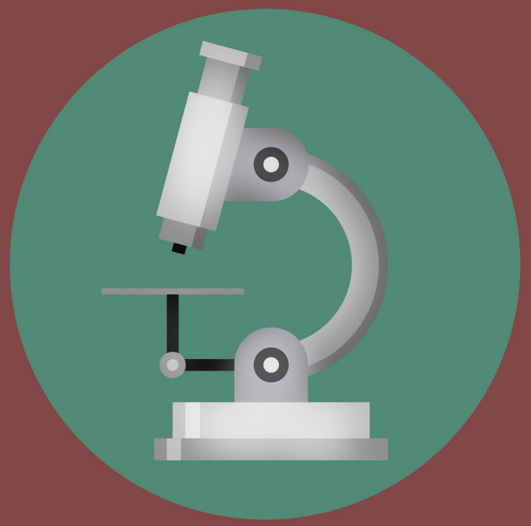
Paving The Way For A Responsible Supply Base

Sustainability Report 2019



MUSIM MAS



Driving Growth Through Innovation



Ensuring Compliance With Best Practices



Building A Responsible Supply Base

As one of the largest players in the palm oil industry, we believe that the best strategy to ensure our continued success is to be the leading sustainable and responsible company.

Vision

To be the world's preferred supply chain partner for vegetable oils and derivatives.

Mission

Driven by a passion for excellence and commitment to continuous improvement, we strive to be the leader in the palm oil industry, producing all our palm products in an economically viable, socially responsible and environmentally appropriate manner, in full compliance with all relevant legal requirements.

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About this report

This is the third Musim Mas Group ('Musim Mas' or the 'Group') report, which provides updates on the Group's sustainability performance. The report has been prepared in alignment with the Global Reporting Initiative (GRI) Standards: Core option.

Scope and boundaries

Unless stated otherwise, this report covers performance data from 1 January to 31 December 2019. Historical data is provided where relevant and available. Given the timing of this report, we have also incorporated significant 2020 milestones. These include impacts and measures taken in light of the COVID-19 pandemic. Our 2018 sustainability report included data relating to our supply chain as at 31 September 2019. The present report provides updates to these milestones with a full year's data against our targets under our Roadmap to Responsible Supply Base (2020 and Beyond).

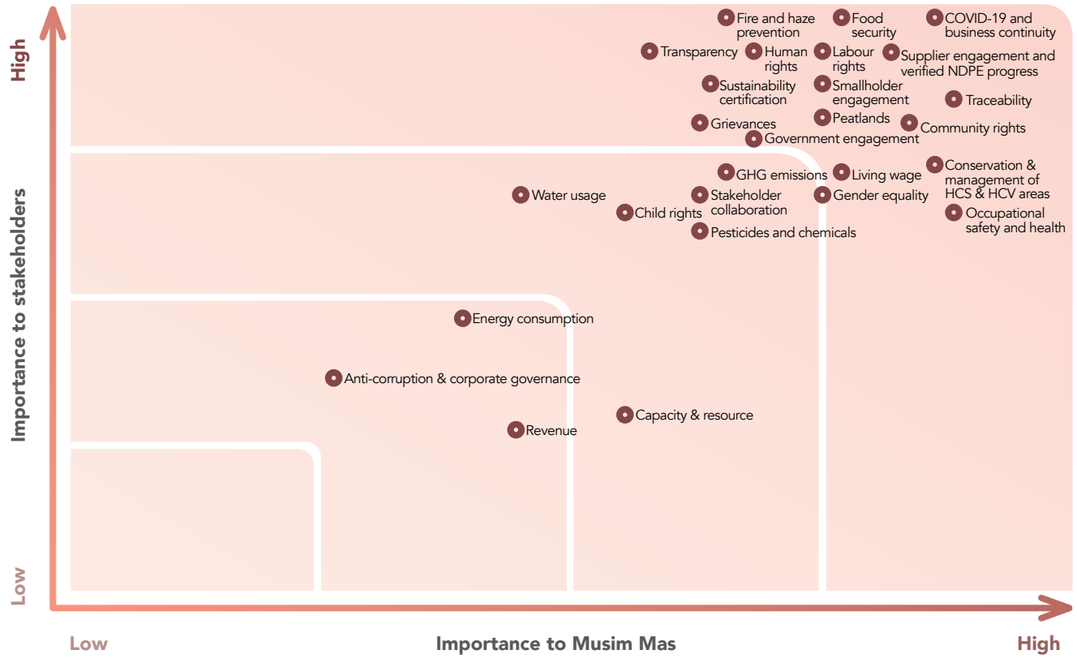
The report is structured to cover the following:

- Striving for higher standards across our operations: **Musim Mas-owned operations**, covering our upstream operations in Sumatra and Kalimantan, over which we have operational control. This does not cover our downstream business or joint ventures, except for certification updates on downstream operations. While we own land in Papua, there has been no development in this area, and it has therefore been excluded from the scope of this report.
- Supply chain transformation at scale: **Musim Mas supply base**, covering our third-party suppliers and smallholders.

Stakeholder inclusiveness, sustainability context and materiality

This report covers the topics most material to our business and stakeholders. In determining these topics, consultation was carried out with our customer base, implementation partners and financial institutions. Our operational teams were also engaged at local and site level. We have drawn upon international and sector-wide engagement through the multi-stakeholder initiatives we are a part of – as well as leading benchmarks such as the Zoological Society of London's Sustainability Policy Transparency Toolkit (ZSL SPOTT) and Forest 500 – to ensure we are responsive to themes and aspects that are important to stakeholders. Throughout the report, we have sought to provide an appropriate context for our performance, particularly in relation to the unique social and environmental landscapes in Sumatra and Kalimantan.

Materiality matrix



Since our last report, some themes have increased in importance. These are fire and haze prevention, GHG emissions, transparency, sustainability certification, grievances, community rights, human rights, anti-corruption and corporate governance, food security, and stakeholder collaboration. In light of the COVID-19 pandemic, occupational safety & health, food security and government engagement have also increased in importance. COVID-19 and business continuity has been added as a new, standalone indicator. Other topics have received less attention from external stakeholders, and certain indicators have been updated or merged to better reflect present-day issues. Notably, living wage and labour rights are now standalone topics, anti-corruption now includes corporate governance, and stakeholder engagement has been updated and renamed stakeholder collaboration. Gender equality has also become increasingly important as a material issue. The key material issues, along with this report, have been reviewed and validated by the sustainability management team.

Assurance

We have not engaged a third party to provide assurance on our sustainability report. However, all information related to our material topics, including labour rights, fire prevention, community rights, and peatlands, has been reviewed by certification bodies such as the Roundtable on Sustainable Palm Oil (RSPO). This provides verification and lends credibility to the information and data published in this report. Furthermore, the calculations of our greenhouse gas (GHG) emissions submitted to RSPO have been independently verified by external auditors.

Our supplier engagement consultants, Consortium of Resource Experts (CORE) and Earthqualizer (previously Aidenvironment Asia), were engaged to review the supply chain section of this report. The scope of their review covered materiality, responsiveness to stakeholder concerns, and sustainability contexts. It includes feedback on improvements. This review did not include verification or assurance of the progress indicators presented in the report.



Chairman Statement

Dear friends, colleagues and partners,

I am pleased to introduce our 2019 Sustainability Report, which sets out our performance, our challenges, and our ambition. At the time of publication, we are in the midst of the biggest crisis of this century. Companies, communities, and families worldwide have been adapting to the pandemic and finding new ways of doing business, working, and living their lives.

Musim Mas has built a solid foundation to meet these challenges and navigate the changes ahead.

Our priority is to ensure our employees, smallholders, and local communities' safety and well-being while minimising business disruption. In our plantations, we took swift action and drastically reduced and controlled contact with outsiders, while adapting our work practices to protect our employees and their families. On our industrial sites, strict protocols were put in place and improved as best practices evolved. Our people were provided with support to work from home and ensure their protection when in the office.

We have also sought to provide relief to the broader community. We are working with the Government of Indonesia to expand COVID-19 testing availability and contribute monetary and resources to relief efforts in the geographies where we operate.

These efforts are necessary to the continued viability of our operations and ensure that the people and communities that form our business's backbone continue to be safe and thrive.

While dealing with the pandemic is at the forefront of our efforts this year, it has not stalled our ambition. The change in pace and way of operating has allowed us to reflect and review plans for continuous improvement.

Our focus for the future is three-fold: we wish to continue blazing a trail and lead in sustainability standards to step up supplier engagement for transformation at scale. We also want to focus work with a wide range of stakeholders at the landscape level.

Our 2020 Sustainability Policy and 2019 Sustainability Roadmap lays out a path for leadership and transformation and reiterates our commitment to No Deforestation, No Peat, No Exploitation (NDPE) while highlighting our renewed commitment improving the livelihood of smallholders, workers, and communities.

Musim Mas has always supported joint action in the industry and is one of the world's biggest producers of Roundtable on Sustainable Palm Oil (RSPO) Certified Sustainable Palm Oil.

With an annual capacity of 800,000 MT verified deforestation-free products, we are also the largest oil supplier produced in compliance with the world-leading Palm Oil Innovation Group Charter. We are proud of our leadership in these trail-blazing standards. Still, we continue to explore how to ensure new ways to bring true sustainability to our industry through landscape-level initiatives in partnership with others.

Traceability is one of the tools to achieve this goal. We have advanced our traceability programme, launched our Roadmap to Responsible Supply Base (2020 and Beyond), and are on track to achieve full traceability by 2025. To ensure that these efforts on the ground yield results and minimise impacts, we are now using satellites and various data to actively monitor over six million hectares of our and suppliers' concessions for hotspots and deforestation.

We understand that real change comes from sustained and long-term investment and multi-stakeholder collaborations. Over the past five years, Musim Mas has partnered with International Finance Corporation (IFC) to provide training to 30,000 smallholders. We are proud to announce that 705 smallholders obtained RSPO certification in November 2019 under the joint Musim Mas-IFC Smallholder Programme. It has been very challenging to achieve this outcome, and we applaud the smallholders who have taken this giant leap.

In 2019, we also scaled up our Extension Services Programme to reach out to more independent smallholders, including those not directly supplying us. We have validated the concept of Smallholder Hub, a pre-competitive platform linking local governments, smallholders, extension specialists, and downstream buyers, to improve extension work at a landscape scale. In 2020, we have signed the first partnership with an FMCG company, General Mills, to connect farmers and consumers. Our ambition over the coming years is to multiply these platforms and partnerships to other regions.

We believe that empowering women is essential to strengthening families and communities. We work directly and through partner organisations to help a growing number of female smallholders. In collaboration with IFC, we delivered classes on 'Gender and Social Issues in Oil Palm' to smallholders, to raise awareness and foster women empowerment in oil palm communities.

A genuine challenge to our No-Deforestation pledge is to protect existing forests and peatland from fires. This remains a material issue for any company operating in Indonesia, and the drought of 2019 put our fire management to the test. We are encouraged by our fire prevention work results, remaining vigilant, and maintaining high levels of preparedness and collaboration with communities and local governments.

As a company whose core activities rely on agriculture, we strive to be part of the solution to combat climate change. Our target is a 55% reduction in emissions intensity by 2025, against our 2006 baseline (crude palm oil production). We will achieve this through sustained investments in methane capture and optimal field practices and peat management.

Reflecting on our 2019 achievements feels like looking back at a different world. Musim Mas strives to lead by example and pioneer new and more responsible ways of doing business in the industry. We have made significant progress and look forward to the road ahead guided by our renewed commitments and ambition.

Thank you for your support and your continued constructive partnership through these challenging times. I wish you good health, safety, and prosperity.

Bachtiar Karim

Bachtiar Karim
CEO and Chairman, Musim Mas Group

In the face of the global pandemic

In early 2020, the coronavirus pandemic struck the world, affecting people, communities, and economies everywhere. COVID-19 is, above all, a health crisis with significant socio-economic implications. The first cases in Indonesia were reported on 2 March 2020. At the time of this report's publication, there have been over 365,000 confirmed cases, and the number of deaths has surpassed 12,600 people in Indonesia.

Recognising our role as an employer and active member of our community, Musim Mas has taken proactive measures to ensure the health and safety of our staff and local communities while fulfilling our commitments to our customers and partners. We have adopted a three-pronged approach to tackle the challenges raised by the pandemic:

1. Ensuring the wellbeing and health of our staff and workers	
Maintaining good hygiene	Installing handwashing stations at entrance areas of all plantations and mills
	Providing hand sanitiser, soap, and masks
	Regularly spraying disinfectant at all mills, offices, workers' housing, and in Musim Mas vehicles
	Conducting regular training and briefings for all workers and people living in our compounds to convey information on COVID-19; further communicating COVID-19 information by distributing brochures and displaying posters on bulletin boards and in public spaces
Implementing detection and isolation measures	Tightening supervision at entrances to our plantations and mills, including temperature checks, donning of masks, and hand washing before entry
	Dividing labourers into two work shifts and different work zones to maintain safe distances; prohibiting mingling; marking boundary lines on floor to remind workers to keep a social distance of one metre
	Suspending all physical meetings and postponing all domestic and international business travel
	Setting up an isolation centre equipped with facilities and infrastructure such as patient beds, personal protective equipment (PPE) for medical personnel, oxygen, infusion, medical equipment and medicine for employees
	Forming a COVID-19 Task Force to monitor the health of workers and families living in our compounds
Ensuring food security	Providing vegetable gardens for workers who live in plantations to ensure steady supply of nutritious food
	Providing nutritious meals for workers
2. Ensuring business continuity to safeguard supply of raw materials for essential products	
Proactively supporting and collaborating with government and healthcare organisations	Signing an agreement with Indonesia's Ministry of Agriculture to assist in maintaining a stable food supply for surrounding communities
	Complying with the EU Seveso Directive requirements at our oleochemical plants in Europe
3. Supporting local communities	
Investing in education and awareness campaigns	Working with Indonesian police to disseminate COVID-19 information to communities surrounding our plantations and mills
	Working with regional/district governments to disinfect public spaces
Ensuring adequate medical supplies	Donating to the Tzu Chi Foundation to acquire medical equipment for hospitals
	Donating disinfectant, sanitiser and PPE to governments and communities
Ensuring food security and nutrition for vulnerable communities	Working closely with selected suppliers of raw food materials to ensure a steady supply of food
	Donating essential food items, such as cooking oil, to communities in need
Investing in COVID-19 research and development (R&D) and testing	Partnering with the Indonesian government to expand the availability of COVID-19 testing, including building a laboratory

For updates on our COVID-19 measures, see our website.

Sustainability progress in 2019

Our Musim Mas Sustainability Policy comprises four pillars. Below is a list of our 2019 highlights, targets and progress in line with these goals.

Pillars	2019 Highlights, unless otherwise stated			Key targets	Status as at december 2019, unless otherwise stated
Pillar 1 Improve the lives of smallholders, workers and communities 	**Musim Mas Employees**				
	Workers received in-kind benefits equivalent to >90% of minimum wage	Implementing measures for Decent Living Wage across operations	Only 4% of total workers are temporary		
	81.9% of workers unionised	Gender Committees available at each site	Designated breastfeeding areas established around estates		
	18.5 ha of land set aside for workers to cultivate fruit and vegetables	26 clinics and 2,285 first aid kits available for workers and communities	66% decrease in lost time accident rate (frequency rate) since 2015		
	Children & Education				
	Completed construction of 2nd Musim Mas secondary school	97% of school-age children living at plantations attend school			
	73 scholarships provided, 37 of which were for children from surrounding communities	50% of CSR funding allocated to YAK schools established for the children of Musim Mas staff			
	Smallholders			Engage with 20,000 independent smallholders by 2019	**Achieved (and exceeded):** Engaged with 29,174 independent smallholders under the Musim Mas smallholder programmes
	100% of scheme smallholders covered by a Musim Mas programme under KKPA or VDP	1,148 farmers newly enrolled under KKPA in 2019; 1 new village in Sumatra covered under VDP	3,494 ha scheme smallholder area RSPO certified (54%)		
	1,247 direct and indirect independent smallholders engaged under ESP	27,927 smallholders engaged under the Musim Mas-IFC smallholder programme; 86% of those who benefit may be outside our supply base		Maintain Smallholder Hubs in key landscapes to support third-party extension services by 2020	**On track** 1 smallholder pilot in the Lalan district in Musi Banyuasin, South Sumatra. This is a first step towards establishing a Smallholder Hub. Engaging with partners to establish Hubs in five more areas in Subulussalam, Southern Aceh, Aceh Singkil, and Musi Banyuasin.
	705 smallholders under Musim Mas-IFC smallholder programme became RSPO certified in November 2019	Independent smallholders in Rantau Prapat successfully received funding to replant oil palm under Musim Mas-IFC smallholder programme	Conducted classes on 'Gender and Social Issues in Oil Palm' for independent smallholders, with almost 10,000 women participants as at Dec 2019		
Pillar 2 Deliver Positive environmental impacts 	**Conservation and Restoration**				
	24,220 ha set aside for conservation, making up 12% of our total titled land	10% of total managed peat area conserved			

Pillars	2019 Highlights, unless otherwise stated				Key targets	Status as at december 2019, unless otherwise stated
Pillar 2 Deliver Positive environmental impacts	**Managing and Monitoring Fire**					
	Fires within Musim Mas concessions limited to similar number as 2018 despite forest fires	> 6 million ha monitored daily for hotspots across Indonesia and Malaysia, covering Musim Mas and supplier concessions	75 villages, 458,361 ha covered under FFVP; 148 trainings conducted in 2019	32 villages rewarded for staying fire-free in 2019		
	Carbon Footprint				**Reduce GHG emission intensity by 55% for RSPO-certified mills using 2006 baseline by 2025**	**On track** Recorded GHG emission intensity was 2.80 $MTCO_2e$/MT CPO, 53% lower than the 2006 baseline.[1]
	RSPO-certified mills		**All mills with methane captures**			
	9.7% reduction in net GHG emissions from 2018	19.8% reduction in GHG emission intensity recorded from 2018	537,965 MT CO_2e avoided from 15 methane captures in 2019	54,184,137 kWh in surplus electricity generated exported to national grid	**Equip mills with methane capture facilities by 2021[2]**	**On track** 15 methane captures complete. Construction of the facility at newly commissioned mill is ongoing and expected to be complete in 2021.
	Water and Chemical Use				**Achieve mill water usage intensity to below 1.25 m^3/MT of FFB processed by 2019, and reduce to 1.2 m^3/MT by 2021**	**Achieved for 2019** Mill water usage intensity of 1.23 m^3/MT of FFB processed.
	Water Footprint Network methodology used to measure water consumption		**Maintained positive net water balance despite the drier season in 2019**			
					Phase out ten pesticides by 2021	**On track** Two pesticides were successfully phased out in 2019, totalling four: Brodifacoum, Permethrin, Benomyn, Glufosinate-ammonium.

Pillars	2019 Highlights, unless otherwise stated		Key targets	Status as at december 2019, unless otherwise stated
Pillar 3: Maintain responsible and enduring relationships with suppliers, customers and stakeholders	**Traceability and Certification**			
	Achieved 100% traceability to mill since 2015	27% of suppliers are certified to the RSPO standards, in line with our NDPE commitments; 43% are ISPO certified and 10% are ISCC certified (not mutually exclusive)	Achieve 49% traceability to plantation by 2019 Achieve 66% by 2020; 100% by 2025	**Achieved (and exceeded):** 60% of total supply to plantation is traceable. On track to achieve 66% by 2020.
	Supplier Engagement			
	Group-level profiles developed for all suppliers as at September 2019	100% of primary supplier groups covered by a customised roadmap towards meeting NDPE commitments	Conduct workshops on NDPE for 60% of supplying mills by 2019 80% by 2020, 100% by 2025	**Not achieved:** 51% of supplying mills have attended our five of our NDPE workshop
			Receive commitment from 60% of supplying mills to abide by NDPE principles by 2019 90% by 2020, 100% by 2025	**Achieved (and exceeded):** 80% of suppliers either have an NDPE policy or adopted the Musim Mas Sustainability Policy. On track to receiving commitments from 90% by 2020.
			45% of supplying mills to complete Self-Assessment Tool by 2019 70% by 2020, 100% by 2025	**Not achieved:** 24% of supplying mills have completed the SAT, as we realised suppliers needed mentoring and support on completing the questionnaires.
			From 2020 onwards, we expect 100% of new suppliers committed to NDPE	Ongoing target for 2020 onwards

1 While data is calculated and reported for our 2019 RSPO audit cycle, it covers 2018 figures.
2 Target revised to reflect current number of mills (where facility could be built), and target year revised from 2019 to 2021.

Pillars	2019 Highlights, unless otherwise stated			Key targets	Status as at december 2019, unless otherwise stated
Pillar 3: **Maintain responsible and enduring relationships with suppliers, customers and stakeholders**	**Supply Chain Monitoring (Deforestation and Peat Development)**			Active monitoring for deforestation and peat development of 70% of suppliers with concessions by 2019 90% by 2020, 100% by 2025	**Achieved (and exceeded) 2020 target one year ahead of schedule** 90% of suppliers are actively monitored for deforestation and peat development through a combination of methods
	Monitoring >6 million ha across Indonesia and Malaysia using a combination of methods as at December 2019	Joined new industry coalition to detect deforestation (RADD) in October 2019	Began trialling NDPE Implementation Reporting Framework (IRF) in 2019 to track progress on deforestation/peat commitments of suppliers		
	Managing Non-compliances				
	Closed 31 of 38 grievances raised from January to December 2019	Excluded a total 19 suppliers between January 2019 and June 2020 due to NDPE commitment breaches; Of which, 1 exclusion was lifted in April 2019	Launched full version of Controlled Purchase Protocol in January 2020		
Pillar 4 **Drive innovation**	**Managing NDPE Breaches**				
	CPO yield/ha 1.66 times higher than global average				
	R&D				
	Conducting trials on alternatives to phase-out pesticides such as Mancozeb and Chlorpyrifos	Conducting trials to increase effectiveness of Glyphosate-based herbicides and reduce reliance			
	Productivity and Yield				
	COVID-19 response and preparedness measure implemented for employees, local communities and ensuring business continuity	Community food security programme established in Central Kalimantan to address food supply disruptions in the face of COVID-19			
	Trialling Programmes and Initiatives for Smallholders in Priority Landscapes				
	Siak and Pelalawan: Scaling up ESP in Siak and Pelalawan districts in line with district government plans	Aceh Tamiang: Addressing risk of encroachment into the Leuser Ecosystem with plans to establish a Smallholder Hub. Also assisting villages in developing land use plans, drafting a village policy and assisting smallholders with land legalisation and registration			

Pillars	2019 Highlights, unless otherwise stated		Key targets	Status as at december 2019, unless otherwise stated
	Musi Banyuasin: Smallholder project trialled in Musi Banyuasin in collaboration with Rainforest Alliance, the Sustainable District Platform and IDH in 2018-2019, a step towards establishing a Smallholder Hub	Sambas: Assisting villages in developing land use plans, drafting a village policy and assisting smallholders with land legalisation and registration		

OTHER HIGHLIGHTS AND TARGETS

	2019 Highlights, unless otherwise stated		Key targets	Status as at december 2019, unless otherwise stated
Strengthened Guidance	**Published Roadmap to Responsible Supply Base**		**Update Sustainability Policy by 2020**	**Achieved in September 2020**
Certification	13 out of 14 mills with plantations RSPO certified as at June 2020 (93%)	PT. MPG was the 1st ever mill to be audited against P&C 2018	**Obtain RSPO certification for all certifiable mills by 2021**[3]	**On track** As at June 2020, 13 out of 14 mills with plantations certified (93%). One mill was newly commissioned in Q4 2019 and became certified in June 2020.[4]
	5 mills with plantations ISPO certified; 15 out of 17 mills have undergone ISPO audits	Became POIG verified in Feb 2019; Able to supply around 800,000 MT of POIG-verified oil in 2020	**Obtain POIG verification by 2019**	**Achieved** Became POIG verified in February 2019
Recognition	**PROPER Awards:** Received 12 out of 21 Green awards given to palm oil companies			

3 The remaining mill was originally expected to obtain certification by the end of 2020, but due to the COVID situation site audit have been on hold.
4 While Musim Mas owns and operates 17 mills in total, only 14 mills have plantations that make them eligible to obtain RSPO P&C certification.

About Musim Mas

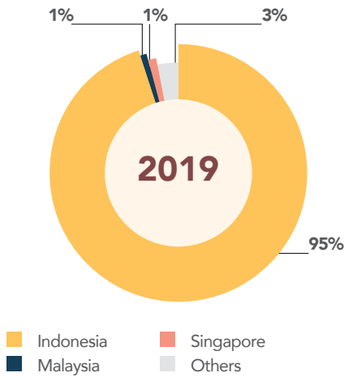
Musim Mas Group ('Musim Mas' or the 'Group') is a private limited company with headquarters in Singapore. We operate across every link in the palm oil supply chain from plantation management to milling, refining, and manufacturing across 13 countries in Asia-Pacific and Europe. Our operations are supported by an extensive fleet of storage tanks, vessels, and tugboats, enhancing our reach and logistical capabilities. The Group also manages Inter-Continental Oils and Fats (ICOF), our global marketing division based in Singapore.

Supported by a multinational workforce of more than 37,000 employees, Musim Mas is one of the largest players in the global palm oil sector.

We have a vertically integrated business model and a segregated supply chain of sustainable palm oil that is certified under the Roundtable on Sustainable Palm Oil (RSPO) standard to enhance accountability and traceability at every step.

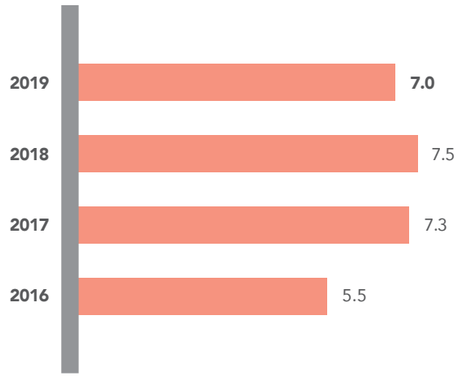
Our production facilities manufacture a wide range of industrial food and non-food products for everyday needs, from biofuels to personal care items. See our website for a full list of products.

GROUP EMPLOYEES BY COUNTRY (%)



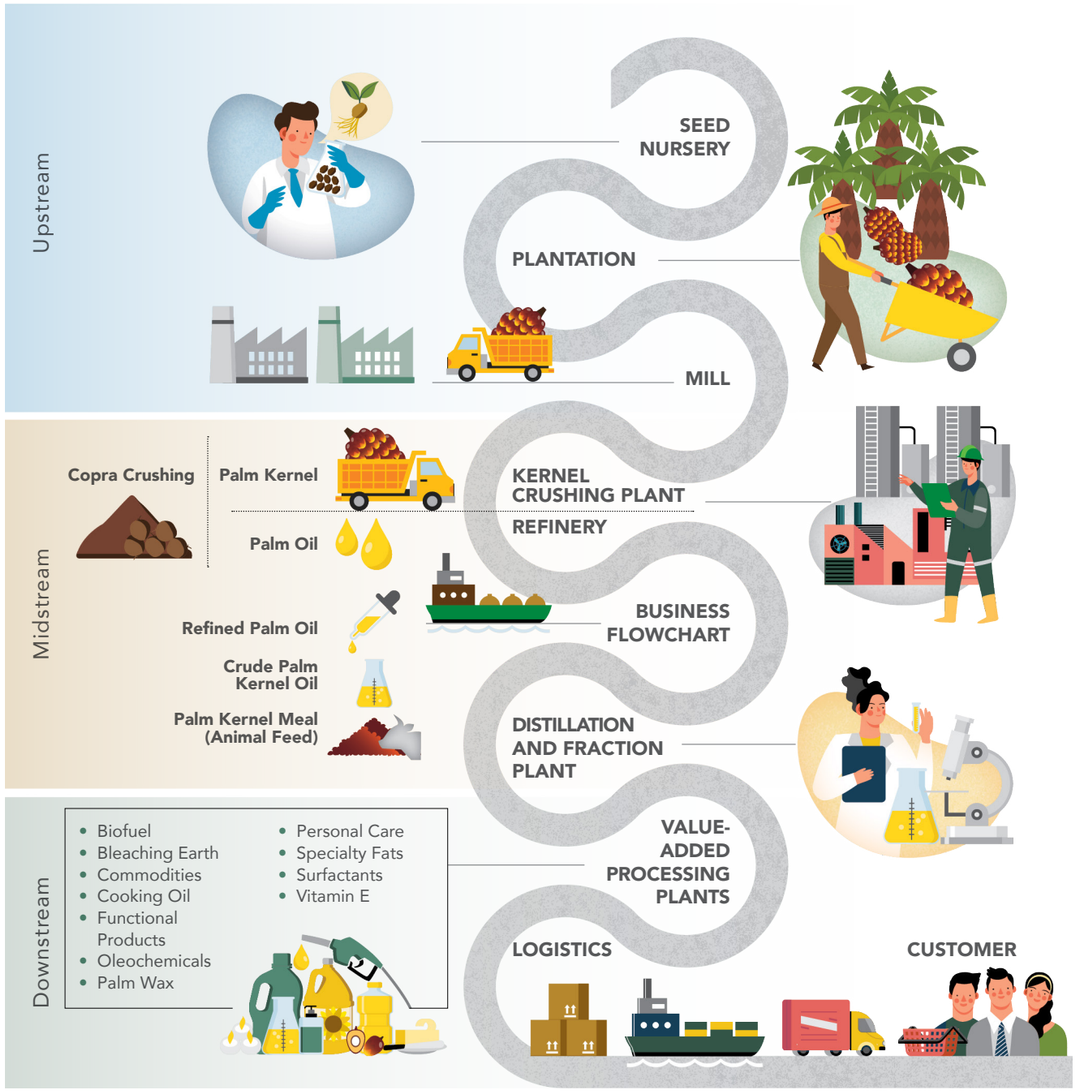
Financial Highlights

REVENUE (BILLION USD)



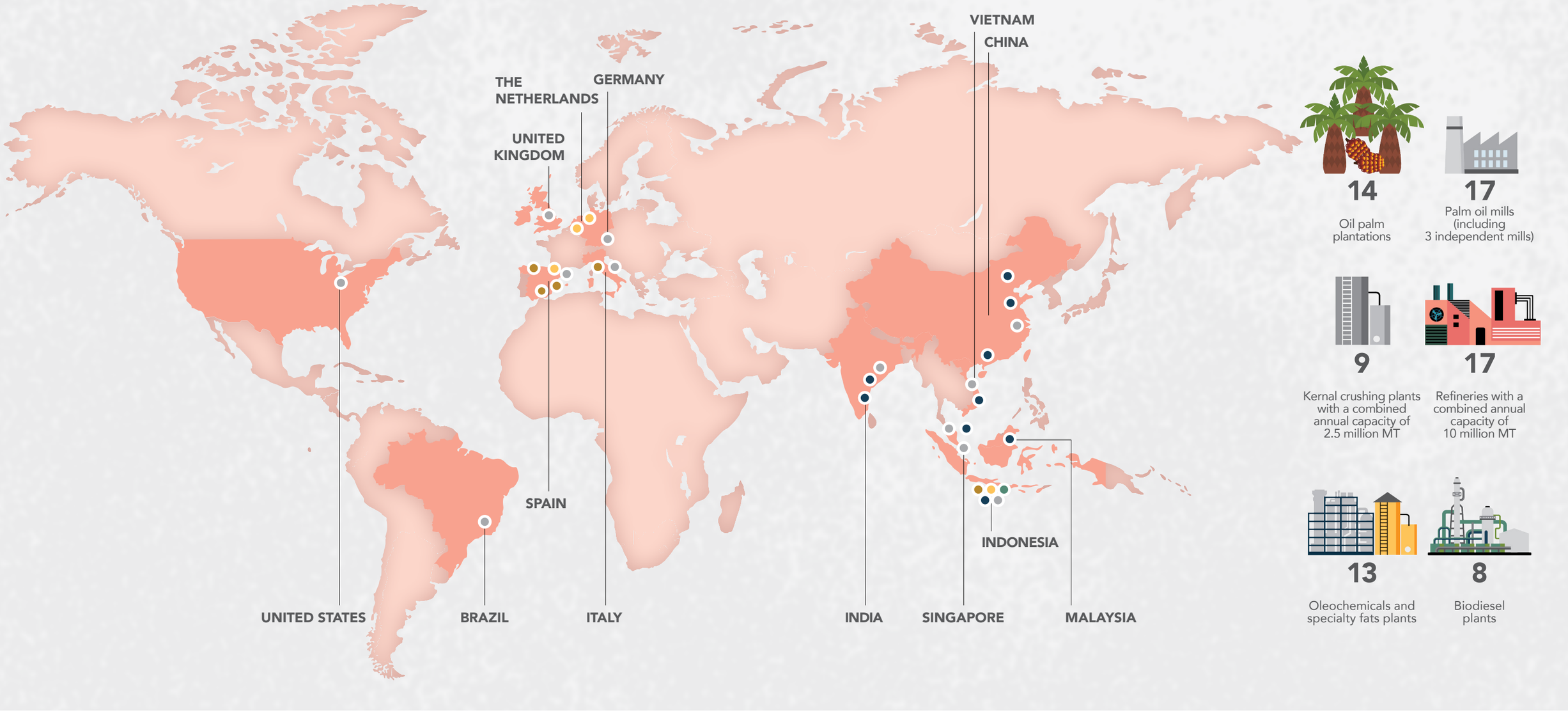


VERTICAL INTEGRATION



Global presence

While our main operational base is in Indonesia and Malaysia, we also maintain a presence in strategic locations worldwide to serve the needs of our international customers. See our global and operational presence at www.musimmas.com/global-presence/.



Operational presence - Indonesia

Our operations cover our plantations, mills and refinery businesses. A listing of our operations can be found at our website.

Overview of Musim Mas-owned operations:

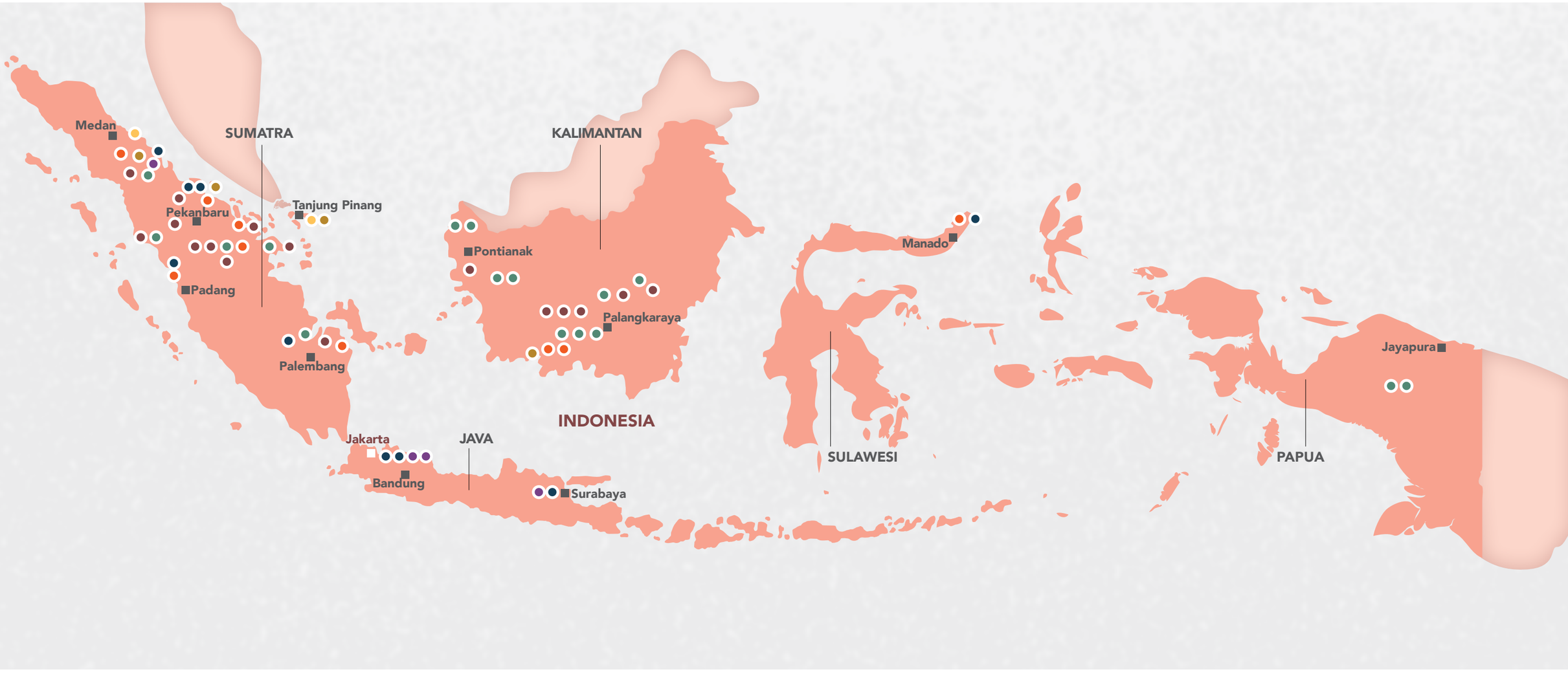
Total planted areas
122,828 ha

Nucleus estates
117,032 ha

Scheme smallholder estates
5,796 ha

Mature plantings
90%

Infrastructure area
7,621 ha



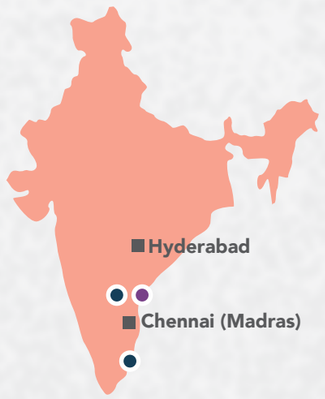
LEGEND

Biodiesel Plant | Kernel Crushing Plant | Mill | Oleochemicals Plant | Specialty Fats Plant | Plantation | Refinery (Global)

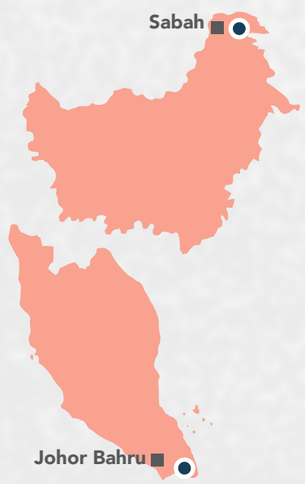
Operational presence - Asia



CHINA



INDIA



MALAYSIA

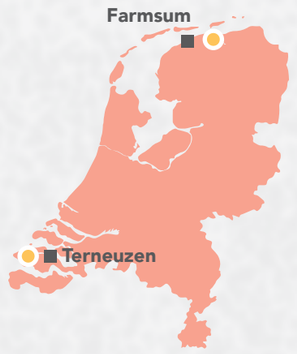


VIETNAM

Operational presence - Europe



ITALY



NETHERLANDS



SPAIN

LEGEND

Biodiesel Plant | Kernel Crushing Plant | Mill | Oleochemicals Plant | Specialty Fats Plant | Plantation | Refinery (Global)

Our operations



New plantings (in existing plantations) covering 646 ha



New mill, PT. GAP, commissioned in Central Kalimantan in Q4 2019



970,751 MT CPO and PK produced



2.48 million MT FFBs produced by Musim Mas plantations



108,471 MT FFB produced by scheme smallholders



919,048 MT FFB purchased from third parties

PLANTATIONS AND MILLS

We own and manage 199,154 hectares of Musim Mas-owned plantations and scheme smallholder plantations in Sumatra and Kalimantan, of which 122,828 hectares comprise planted area. While we own two concessions in Papua, we have no plans to develop the land within these areas.

In 2019, there were new plantings within our existing concessions, amounting to 646 hectares in Kalimantan, with some replanting that took place in Sumatra. These plantings were a continuation of our development plans since 2011, and contributed to the increase in total planted area from 2018. We have also designated areas for future planting, including 1,182 hectares at PT. Lestari Abadi Perkasa, which completed the RSPO New Planting Procedure (NPP) in September 2019.

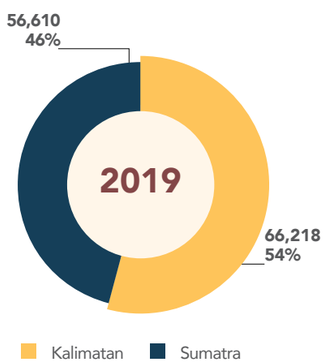
Of our total planted area, 5% belongs to scheme smallholders, who contributed to 108,471 metric tonnes (MT) of our total fresh fruit bunches (FFB) sourced. Total scheme smallholder hectarage increased by 1,172 hectares in 2019, reflecting more scheme smallholders joining our programmes. Combined with Musim Mas FFB, our production amounted to 2.58 million MT, 9.6% less than 2018.

Our yield includes our mature FFB and third-year immature plantings ready for harvest. This yield decreased by 11.8%, from 25.9 MT FFB per hectare (MT FFB/ha) in 2018 to 22.8 MT FFB/ha in 2019. Scheme smallholder yield also decreased by 15% as a result of both lower FFB production and immature plantings that have yet to fruit from the new scheme smallholder planted areas in 2019.

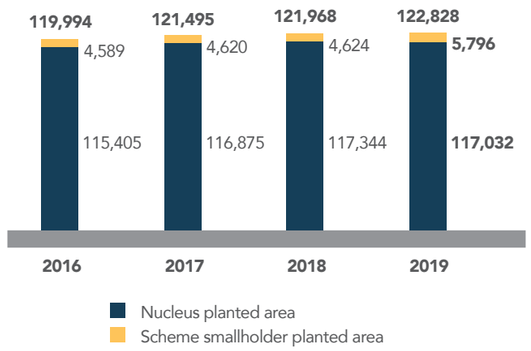
In October 2019, we completed construction of a new mill, PT. Globalindo Alam Perkasa (GAP), in Central Kalimantan. PT. GAP has one estate, an existing certified plantation that has been supplying to our subsidiary mill – Maju Aneka Sawit – since 2011. The new mill brings our total to 17, three of which are independent of plantations and process FFB from third parties. These mills are entirely operated by Musim Mas and not used by any third parties for processing.

Out of our 14 RSPO P&C certifiable mills, 10 source from own plantations, while the remaining four also receives FFB from third parties. Our mills process the fruit produced by our own plantations (70.2%), and by scheme smallholders (3%), with the remaining volume purchased from third parties (26.7%). We purchase less than 0.1% of our third-party supply directly from independent smallholders. In 2019, our mills produced a total of 774,892 MT of crude palm oil (CPO) and 195,859 MT of palm kernel (PK), representing 10% less than total production in 2018, and due to the significant drops in yield in 2019.

PLANTED AREA BY REGION (ha, %)

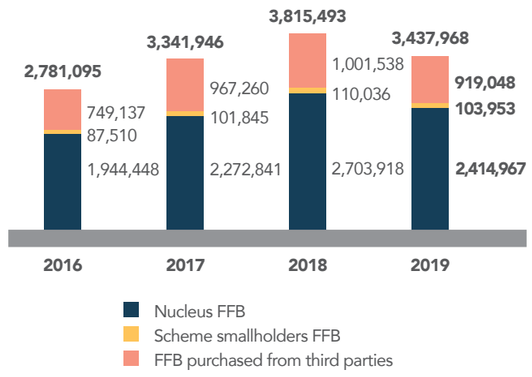


TOTAL PLANTED AREA (ha)



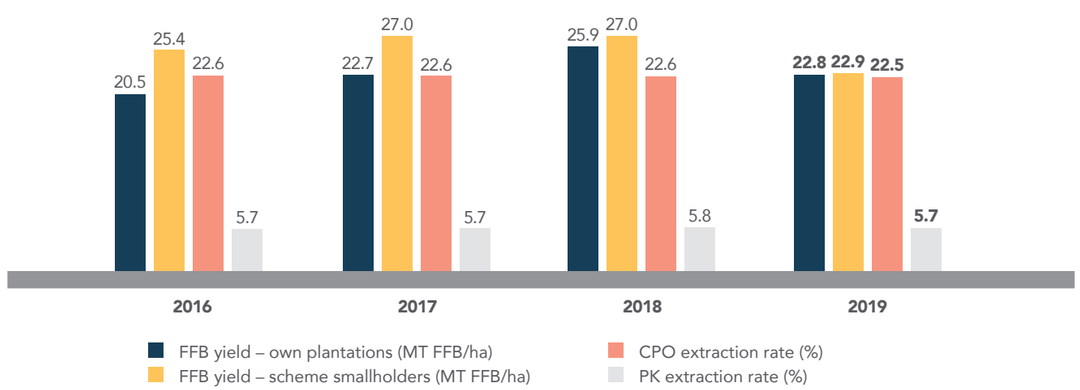
Note:
Nucleus refers to Musim Mas plantations.

FFB PROCESSED (MT)



Note:
'FFB purchased from third parties' was previously labelled as 'independent smallholder FFB'. Third-party FFB supply covers FFB volumes purchased from all third parties, and includes supply from independent smallholders directly and indirectly purchased.

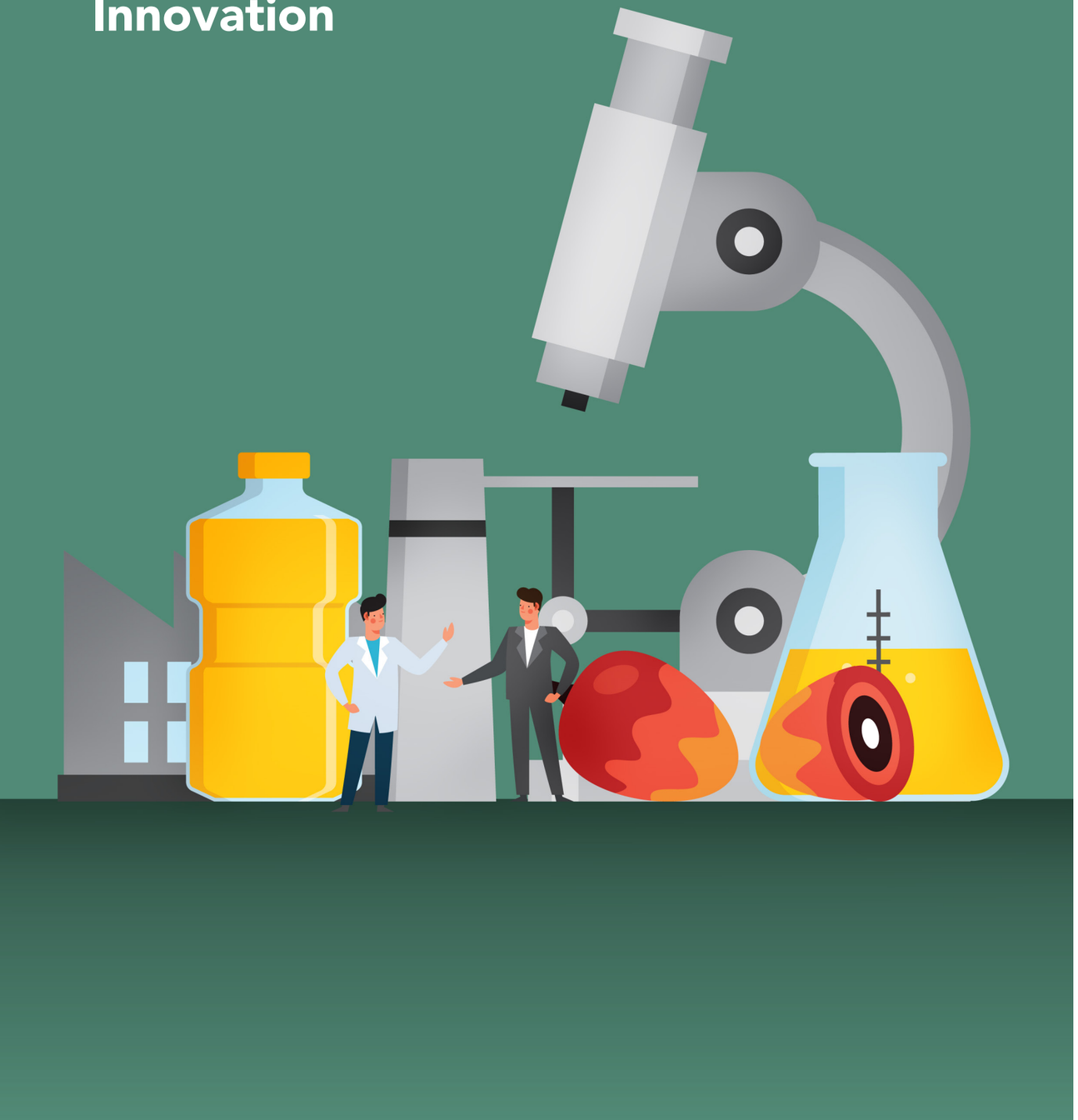
FFB YIELDS AND EXTRACTION RATES



REFINERIES AND PLANTS

Musim Mas is one of the largest palm oil refining and oleochemicals companies in the world. In 2019, our kernel crushing plants produced about 1.1 million MT of palm kernel oil and palm kernel expeller. The scale of our operations ensures that we have a reliable supply of raw materials, control over quality, and an optimised logistical capability to deliver on all supply chain needs.

Driving Growth Through Innovation



IN SEPTEMBER 2020, WE UPDATED OUR SUSTAINABILITY POLICY TO REFLECT OUR EXPERIENCE AND ARTICULATE A RENEWED WAY TO DEMONSTRATE OUR FIRM NDPE COMMITMENTS ACROSS OUR OPERATIONS AND SUPPLY CHAIN.

Our approach to sustainability

In addition to pushing the boundaries and raising the standards in implementing sustainability measures within our operations, we apply best practices to galvanise others towards industry transformation.



Our Sustainability Policy ('Policy') was published in December 2014 and guides our sustainability actions and their implementation. The document sets the framework for our No Deforestation, No Peat, No Exploitation (NDPE) commitments and applies to our global operations and those of our suppliers. Our 2018 Policy Implementation Plan articulates the steps we take to meet these goals. In September 2020, we updated our Sustainability Policy to reflect our experience and articulate a renewed way to demonstrate our firm NDPE commitments across our operations and supply chain. The updated policy outlines the four pillars our commitments to sustainability rest upon:



Improve the Lives of Smallholders, Workers, and Communities



Maintain Responsible and Enduring Relationships with Suppliers, Customers and Stakeholders



Deliver Positive Environmental Impacts



Drive Innovation in Sustainable Practices

In September 2019, we published our Roadmap to Responsible Supply Base (2020 and Beyond), which sets clear targets and shows how we are bringing our suppliers into compliance with our commitments. We work with key suppliers and smallholders in priority landscapes and through multi-stakeholder collaborations to carry out these commitments.

Our strategic efforts to transform the industry can be summarised as a three-tier model:



Stakeholder collaboration and Landscape collaborations
Prioritise supplier engagement and landscape work in Aceh-Leuser Ecosystem, Siak and Pelalawan.

Supply chain transformation at scale
Responsible Supply Base (2020 and Beyond), develop supplier engagement protocol to ensure compliance, co-create labor risk assessment framework for non-certified supplier groups.

Industry leadership in sustainability standards
Maintain Palm Oil Innovation Group (POIG) verification standards, aspire towards higher levels of PROPER awards, aim for RSPO Group certification against P&C 2018, refresh our sustainability policy to reflect our ambitions for 2020 and beyond, and more.

We recognise the importance and relevance of the Sustainable Development Goals (SDGs), a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. We will cover our contributions to specific targets in the SDGs in upcoming reports.

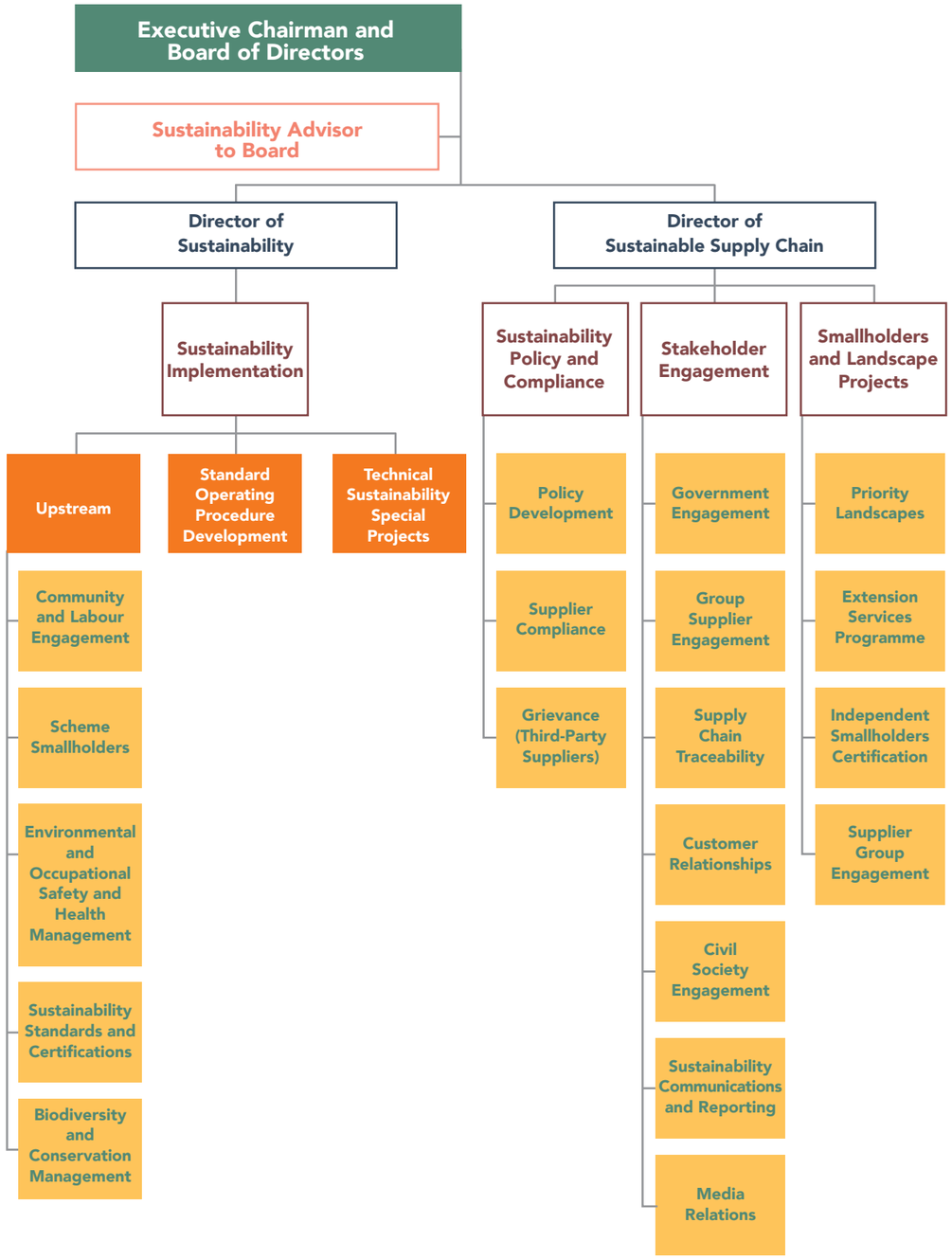
Corporate and sustainability governance

The Musim Mas Board of Directors ('Board') considers sustainability a core component of our corporate integrity, ensuring that material environmental, social and governance (ESG) factors are embedded into business strategies and decisions. The Board is led by our Executive Chairman and Chief Executive Officer. It comprises four members, one of whom is a woman.

Our senior management meets quarterly to review key ESG issues. Our Executive Chairman leads these meetings and monthly reports are also provided to the Board. Our Director of Sustainability and Director of Sustainable Supply Chain oversee the implementation and execution of our sustainability policy commitments, and an external senior strategic advisor supports their work. In 2019, our supplier engagement team for Indonesia shifted from being a stand-alone entity to being a part of the procurement team. This change ensures better integration and decision-making for responsible procurement. We continue to invest in dedicated teams on the ground to implement training programmes and in finding opportunities to reach out to other smallholders.

We are committed to conducting business in a fair and ethical manner and prohibit all forms of corruption and bribery. These commitments are guided by our Code of Business Conduct and the internal Anti-corruption Policy shared with relevant Musim Mas employees. Our Supplier Code of Business Conduct imposes similar obligations upon all external parties who supply to Musim Mas. No cases of bribery or corruption were reported in 2019.

SUSTAINABILITY GOVERNANCE STRUCTURE



Stakeholder collaboration

We understand that we cannot act alone to bring about real and meaningful change in the industry. The complexities around issues such as deforestation and the exploitation of people require collaboration from various stakeholders. That is why we work with a wide range of industry players, government bodies and civil society organisations to discuss and address pressing issues.

NOTABLE PARTNERSHIPS IN 2019

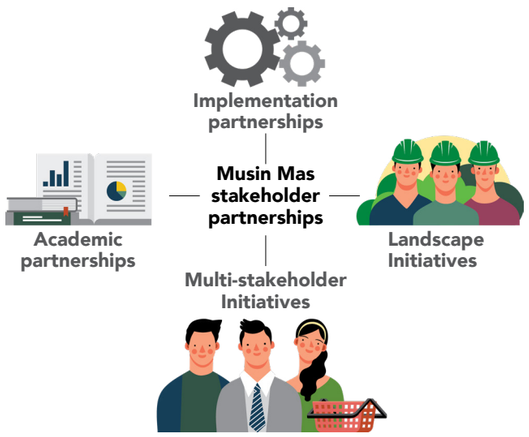
- Partnering with nine other palm oil producers and buyers to support and fund the development of a new, publicly available radar-based forest monitoring system known as Radar Alerts for Detecting Deforestation (RADD) (see page 63).
- Partnering with the International Finance Corporation (IFC) on independent smallholder programmes for those supplying Musim Mas mills (see page 69).
- Working with the Consortium of Resource Experts (CORE) – Proforest and Daemeter – on implementing NDPE commitments, the Extension Services Programme and landscape collaborations (see pages 71 and 75).
- Working with Rainforest Alliance on a pilot project in Musi Banyuasin that will be helpful for establishing Smallholder Hubs (see page 74).
- Collaborating with the governments of Siak, Pelalawan, Musi Banyuasin and Sambas on landscape initiatives to support smallholders in sustainable production (see pages 74-75).

See page 78 (appendix) for our general approach to stakeholder engagement, and our website for an overview of all partnerships and collaborations.

Unilever looks for partnerships with suppliers who share our values, and Musim Mas is moving predominantly in alignment with these values, specifically around NDPE policy commitments.

We would like to see the company step outside the box by adopting a bold leadership role within the palm oil industry. There is an opportunity for Musim Mas to become a leader in the palm oil sustainability space by embracing a proactive and responsive approach rather than being driven solely by customer demand. Unilever and other customers are eager to embrace collaborative partnerships with suppliers that are willing to do things differently and are forthcoming with proactive partnership proposals.

Martin, Sustainable Sourcing Director for Tropical Oils, Unilever
Musim Mas and Unilever are engaged primarily in a buyer-seller relationship and have worked in close collaboration on the sustainability front over the last three-to-four years. The two companies are also partners in the Siak Pelalawan Landscape Programme for Livelihoods and Sustainable Palm Oil and the industry-wide RADD project.



Communicating with stakeholders

We maintain an open dialogue with our stakeholders and welcome constructive feedback to improve our operations. While we are not bound by the requirements to publicly share information as listed companies are, we strive to be transparent by keeping stakeholders informed on Group-wide matters. Information channels include our annual sustainability reports, website announcements, and the RSPO Annual Communication of Progress. We make information on all grievances publicly available and maintain an active social media presence to engage with our stakeholders online. We also continuously engage with our stakeholders to support identification and management of ESG topics, and their impacts, risks and opportunities.

Musim Mas participates in several public assessments and benchmarking programmes that rate our sustainability commitments and progress. Our score on the Zoological Society of London's Sustainably Policy Transparency Toolkit (ZSL SPOTT) fell by 17.1% from 2018. This drop is due to the new indicators introduced in the 2019 assessment. However, this assessment took into account those disclosures that were publicly available before the launch of our 2018 sustainability report in November, and after a re-assessment we have improved our scoring to 78.0%. The Forest Heroes Green Tigers assessment was also updated in 2019 and now employs the Global Canopy Forest 500 methodology.

OVERVIEW OF 2019 BENCHMARK SCORES

PROPER: **Received 12 Green awards** out of 21 Green awards given to palm oil companies	SPOTT: **69.9% Score; Ranked 15th** out of 91 palm oil companies. Achieved 78% in re-assessment	FOREST 500: **35% Score; Ranked 60th** out of 198 palm oil companies
FORESTHEROES.ORG: **Score of 74; Ranked 5th** out of 24 palm oil companies	ecovadis: **Awarded Silver Medal**	CDP DISCLOSURE INSIGHT ACTION: Forests 2019 (B) Climate Change 2019 (C) Water Security 2019 (B-)

As a Dutch bank, ING is particularly sensitive to environmental, social, and human rights risk (ESR) matters, and has a rigorous ESR policy. It is our observation that Musim Mas has an advanced sustainability policy, a dedicated sustainability team, and shows good practice in navigating a challenging sector. In our view, the company has a strong focus on these issues, in particular on traceability, innovation, and engagement with suppliers.

Key improvement areas are increasing transparency in disclosure and further collaboration with suppliers on NDPE and RSPO certification. Having said this, Musim Mas has proven open to answering questions posed by its financial stakeholders such as ourselves and tries to be as transparent as possible in addressing issues.

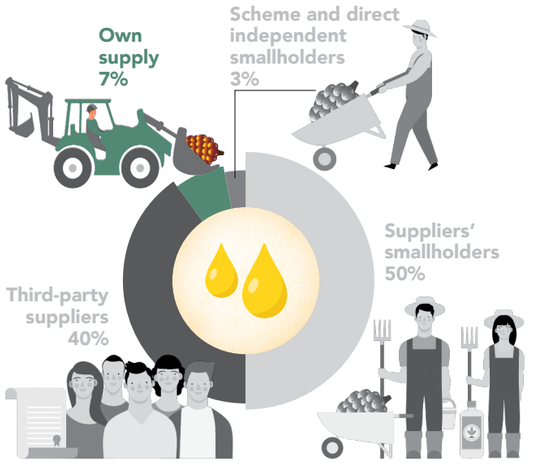
Natalia Rajewska, Sustainable Finance APAC Team, ING
The Sustainable Finance APAC team focuses primarily on assisting clients' sustainable finance programmes, including structuring sustainable loans and bonds. The team also works closely with ING's ESR team.

Ensuring Compliance With Best Practices



Striving for higher standards across our operations

The Musim Mas Group operationalises industry best practices for sustainable production. We take pride in going beyond what is required to truly make a difference and pave the way forward.





WE TAKE PRIDE IN GOING BEYOND WHAT IS REQUIRED TO TRULY MAKE A DIFFERENCE AND PAVE THE WAY FORWARD.

Certification and verification

One of our top priorities is to comply with and support leading industry certification and verification schemes. We believe that by collectively meeting these sustainability criteria, players like Musim Mas can progressively raise the bar within the palm oil sector.

RSPO

1st in Indonesia to obtain RSPO P&C certification, in 2009; **1st in Indonesia to obtain** RSPO certification for our scheme smallholders under KKPA at PT. Agrowiratama, in 2010

PT. MPG was the 1st ever mill to be audited against P&C 2018

13 out of 14 mills with plantations RSPO certified as at June 2020 (93%)

695,151 MT of CSPO & 176,645 MT of CSPK produced, including smallholder volumes

Musim Mas was the first company in Indonesia to become a member of the Roundtable on Sustainable Palm Oil (RSPO) when it was established in 2004, and remains an active member.

PT. Multipersada Gatramegah first ever mill to be successfully audited against RSPO P&C 2018

In November 2018, the RSPO successfully adopted the 2018 Principles and Criteria (P&C), which reflect substantially higher standards compared to the 2013 P&C. The updated criteria now require using the High Carbon Stock Approach toolkit to better deliver no deforestation commitments, with a higher standard around no new developments on peatlands and clearer safeguards for labour rights. RSPO grower members were given a one-year transition period to implement the new standards.

In October 2019, our subsidiary, PT. Multipersada Gatramegah (MPG), was the first facility in the world to be audited against the revised standards. PT. MPG achieved 2018 P&C certification in March 2020. At the time of this report's publication, 11 of our units have been audited using the 2018 P&C and the remaining units will go through the process following our surveillance audit schedule.



Why PT. Sarana Esa Cita (SEC) is facing delays in RSPO certification

One of our mills in West Kalimantan has faced delays in obtaining RSPO certification. While we obtained the location and business permits in 2015/2016, the land use permit – or *Hak Guna Usaha* (HGU) – process is expected to be completed in 2020 for the areas that PT. SEC has already compensated and developed for oil palm plantation. The government field visit, which is one of the stages of the HGU approval process, was initially planned for end-Q1 2020. However, this timeline will be reviewed as the field verification process has been delayed due to COVID-19.

As at December 2019, 12 of our mills were RSPO certified. In October 2019, a new mill, PT. Globalindo Alam Perkasa (GAP), was commissioned in Central Kalimantan. The mill completed its audit in March 2020 and became RSPO certified in June 2020, bringing the total of certified mills to 13 at the time of publication of this report. The remaining mill was originally expected to obtain certification by the end of 2020, but due to the COVID situation site audits have been on hold.

As of December 2019, all 44 of our downstream operations were certified against the RSPO Supply Chain Certification Standard (SCCS). Five of these facilities obtained certification two years ahead of schedule. Through our certified operations, we sourced approximately 632,000 tonnes of RSPO-certified palm oil and oil palm products in 2019. By adhering to this scheme, we are able to supply products under the identity-preserved and segregated supply chain models.



RSPO CERTIFICATION TIMEBOUND PLAN[5]

Company name	Facility	Certification target date	P&C certification status	SCCS certification status
North Continental Oils and Fats, Thanh Hoa, Vietnam	Refinery	2019		Achieved
PT. Globalindo Alam Perkasa, Central Kalimantan, Indonesia	Mill	2020	Achieved	Achieved
PT. Sarana Esa Cita, West Kalimantan, Indonesia	Mill	2020-2021	On track	On track
South India Krishna Oils and Fats, Andhra Phradesh, India	Refinery	2021		Achieved
Tvarur Oils and Fats, Tamil Nadu, India	Refinery	2021		Achieved
Musim Mas (Dongguan) Oils and Fats, Guangdong, China	Refinery	2021		Achieved
Musim Mas (Tianjin) Oils and Fats, Tianjin, China	Refinery	2021		Achieved
Musim Mas (Zhenjiang) Oils and Fats, Jiangsu, China	Refinery	2021		Achieved

ISPO

5 mills with plantations ISPO certified

15 out of 17 mills have undergone ISPO audits

Musim Mas was one of the first companies to apply for Indonesian Sustainable Palm Oil (ISPO) certification. As at December 2019, 15 of our 17 mills – both those with plantations and those that are independent – have gone through audits.

POIG

Became POIG verified in Feb 2019

Able to supply around **800,000 MT of POIG-verified oil in 2020**

Since 2015, Musim Mas has been a committed member of the Palm Oil Innovation Group (POIG), and we have worked closely with POIG and relevant third parties to become verified. Beyond being able to produce our own POIG-verified oil, our goals also support POIG's vision to realise a credible palm oil supply chain guided by the POIG Traders and Processors Charter.

The first POIG-verified Southeast Asian company

In February 2019, Musim Mas Group successfully became POIG-verified. Our 12 RSPO-certified mills with plantations in Sumatra and Kalimantan are now able to produce 800,000 MT of POIG-verified and RSPO-segregated palm oil and will bring it to market in 2020 in the form of crude palm oil, palm oil kernel, as well as a range of palm oil fractions and derivatives.

Being POIG-verified means that products are independently verified against stringent standards and best-in-class No Deforestation, No Peat, No Exploitation (NDPE) policies, some of which already meet standards resulting from the adoption of the 2018 RSPO P&C.

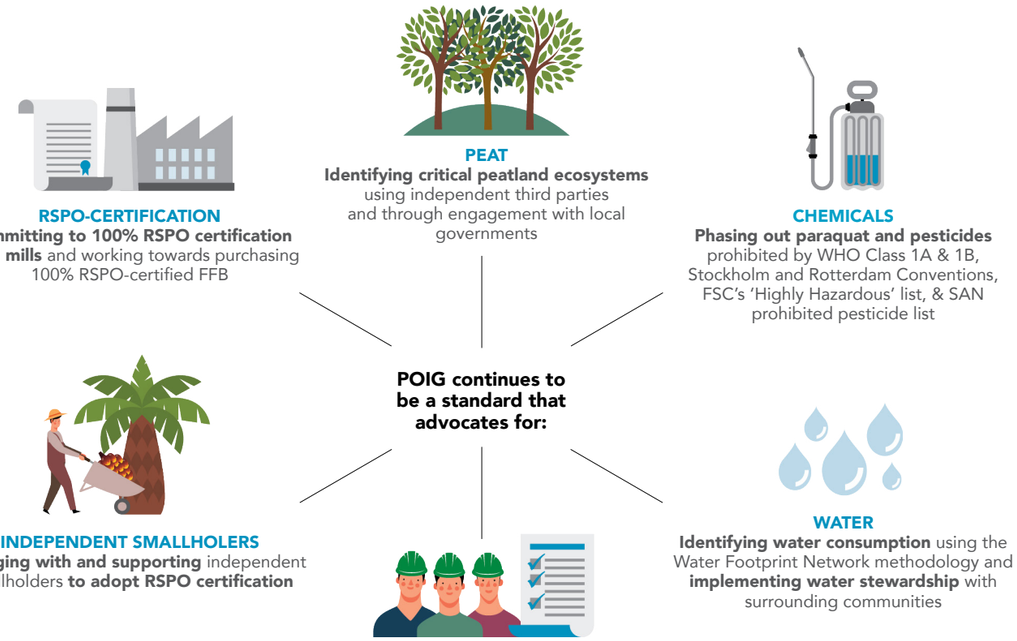
Our newly commissioned mill, PT. GAP, obtained RSPO certification in June 2020 and will subsequently undergo POIG verification.

Read the official statement on the POIG website.



5 Our downstream operations are outside the scope of this report, but we provide certification updates as part of our overall RSPO timebound plan.

BENEFITS OF BEING POIG-VERIFIED



OTHER CERTIFICATIONS

All mills International Sustainability Carbon Certification (ISCC)-certified since January 2018

All mills compliant with the Italian National Certification System for Biofuels and Bioliquids (IT SNC) since April 2018

All crushing plants Good Manufacturing Practices Plus Feed Safety Assurance (GMP+ FSA)-certified since January 2018

INCREASING PRODUCTIVITY AND ENHANCING YIELD

CPO yield/ha 1.66 times higher than global average

Investing in R&D to reduce use of glyphosate-based herbicides

Recognising the need to address growing global demand, we invest in technologies and measures to continuously increase productivity and enhance yield. Musim Mas employs best agricultural practices at our plantations, such as replanting old palms, using high-yielding plant seedlings, focusing on organic growth methods to enhance productivity, and optimising land use.

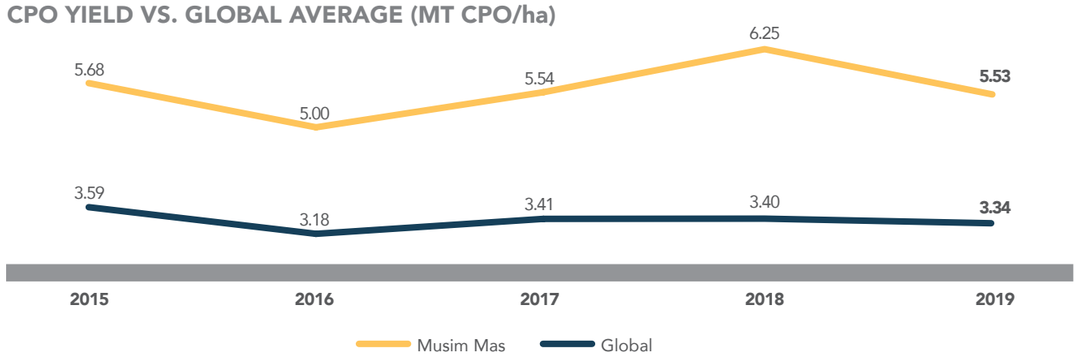
Our crude palm oil (CPO) yield per hectare was 1.66 times higher than the global average in 2019. While this puts us at the forefront of the industry, improving land use efficiency remains our top priority. We are currently researching and developing premium seedlings that enhance the quality of fresh fruit bunches (FFB), increase our yield per hectare and improve oil extraction rates.

We are committed to investing in research and development (R&D) and rely on technical and scientific expertise to maximise yields.



Musim Mas strives to reduce our usage of chemical pesticide and herbicides, including glyphosate-based herbicides (GBH), which are used to manage weeds at plantations. In addition to employing good agricultural practice to reduce its use, our R&D department has planned a series of field trials aimed at improving the effectiveness of GBHs, herbicide rotation and substitutes, and the timing of application and dosage. Read more about how we are reducing our GBH usage on page 46.

CPO YIELD VS. GLOBAL AVERAGE (MT CPO/ha)



Source of global data: www.oilworld.biz/p/palm-oil#palm-oil (available for purchase)
Note: Global average data for 2018 has been restated

Environmental protection and enhancement

Environmental stewardship is a core pillar of our sustainability measures. We strive to minimise and mitigate adverse impacts on the environment, and to identify ways to enhance the ecosystems and landscapes around us. Musim Mas has been regularly assessing the impact of our operations on the climate and environment through widely accepted and respected tools and assessments, such as the Roundtable on Sustainable Palm Oil (RSPO) PalmGHG and CDP.

In 2019, we conducted our first Life Cycle Assessment (LCA). This comprehensive assessment accounts for environmental aspects of our operations and identifies environmental impacts our operations may cause (such as acidification, eutrophication, ecotoxicity levels), thus enabling us to develop holistic mitigation plans to minimise these impacts. After implementing these mitigation measures, outcomes were compared to a business-as-usual scenario. The results showed that the actions taken were effective in minimising our impact on the environment.

TOWARDS BECOMING 100% VERIFIED DEFORESTATION FREE

Being POIG-verified means that our RSPO-certified mills have been independently verified as 100% deforestation free

~800,000 MT CPO and PK verified deforestation-free oil produced by Musim Mas



Musim Mas is a signatory of the New York Declaration on Forests (NYDF) and is aligned with its collective commitment to halve the loss of natural forests by 2020, and end it by 2030. We strictly adhere to our No Deforestation commitment for all of our operations. Our 12 Palm Oil Innovation Group (POIG)-verified mills with estates produce 100% deforestation-free palm oil, totalling 800,000 metric tonnes (MT) of crude palm oil (CPO) and palm kernel (PK) in 2019.

Our focus remains on tracing the external fresh fruit bunches (FFB), CPO and palm kernel oil (PKO) we source for our independent mills and refineries. By doing this, we can work towards eliminating all deforestation within our supply chains, thus ensuring compliance with our strict sourcing policies. We are engaging and working closely with our third-party supplier groups and independent smallholders to do so. See the section on Supply chain transformation at scale for our progress on traceability and engagement.

Conservation and restoration

24,220 ha set aside for conservation, making up 12% of our total titled land

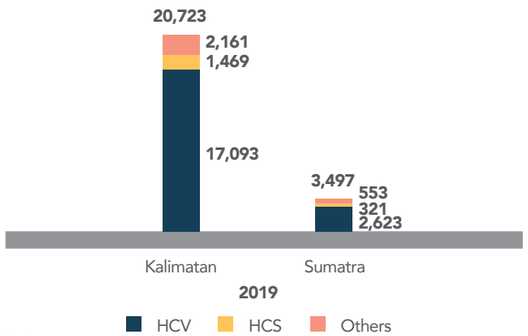
As part of our commitment to the NYDF vision of restoring 150 million hectares of degraded landscapes and forest by 2020 and 350 million hectares by 2030,[6] we have implemented a series of measures that conserve, restore and enhance the natural environments around us.

Prior to any new development, we carry out rigorous assessments and follow the process outlined in the RSPO New Planting Procedure (NPP), including identifying and conserving areas with High Conservation Value (HCV) and High Carbon Stock (HCS). Since 2014, we have been estimating the carbon stock of proposed development areas and major potential sources of emissions that may result directly from development. Potential development scenarios are carefully assessed before we adopt an optimal strategy that balances environmental impacts and economic growth. We conducted all the required assessments before carrying out 646 hectares of new planting in Kalimantan in 2019. This included observing Free, Prior and Informed Consent (FPIC) through consultation and negotiation with all affected communities. In 2019, we submitted an RSPO NPP implementation plan for 1,182 hectares at PT. Lestari Abadi Perkasa that were designated for future planting.

To ensure the credibility of our HCV and HCS assessments, they are all carried out by accredited and registered licensed assessors and practitioners. All five HCV assessments since January 2015 have earned satisfactory ratings from the HCV Resource Network (HCVRN), with the last one achieving such a rating in July 2019. All HCS Approach (HCSA) assessments have been peer-reviewed. Two integrated HCV-HCSA assessments were also completed and submitted to the HCVRN for quality review in January 2020.

In 2019, we identified and set aside an additional 2,710 hectares in Kalimantan and 554 hectares in Sumatra through HCV and HCSA assessments. We also included new areas in our conservation hectarage, adding steep terrain, wildlife corridors and riparian buffer zones not identified by HCV and HCSA assessments. This categorisation is in line with the RSPO 2018 P&C. With these additions, our entire conservation area now totals 24,220 hectares, amounting to 12% of all our titled land. Of this, 86% of belongs to our operations in Kalimantan.

CONSERVATION AREA BY REGION (ha)



Notes:
1. Overlaps in HCV and HCS areas are reflected as HCV figures.
2. 'Others' include steep area, wildlife corridors and riparian buffer zones not identified by HCV and HCSA assessments.

We use dedicated conservation management and monitoring plans to safeguard our conservation areas. Conservation and protection measures include restoring areas that are degraded and managing riparian buffer zones, regularly conducting biodiversity surveys, patrolling grounds and monitoring for encroachment through satellite surveillance to prevent illegal development. We strictly prohibit the hunting of rare, threatened and endangered species and educate workers, families and communities on the importance of conservation. Surrounding communities are involved in designating these areas and play a part in developing and executing conservation management plans. A list of fauna identified at our operations that fall under the International Union of Conservation of Nature (IUCN) Red List of Threatened Species can be found on page 87.

In 2020, we began collaborating with the South East Asia Rainforest Research Partnership (SEARRP), a Borneo-based scientific research facility that has expertise in habitat restoration and sustainable plantation management. Through this partnership, we aim to quantify our conservation efforts and review our management and monitoring plans.

MAINTAINING AND REMEDIATING RIPARIAN ZONES

We maintain riparian zones of 50 metres for small rivers, and 100 metres for wide waterways, to act as buffers between natural waterways and land use for agricultural development. These zones help prevent soil erosion and minimise surface runoff.

We also remediate these riparian areas by replacing palms with jungle trees in collaboration with the Indonesian Forestry and Environmental Planning Agency (*Planologi Kehutanan dan Tata Lingkungan*). We then set aside five rows of existing unmaintained palms, which are left in-situ during replanting. Employing these two approaches, we realised that setting aside oil palm rows instead of restoring the palms yielded better results. Restoration can cause excessive erosion while planted legume crops grow to cover an area and can also choke standing crops when they are fully grown. This remediation process is part of our standard operating procedure (SOP) to extend the area of palms set aside across all of the Group's plantations.

We also work with others through landscape collaborations to conserve and enhance the areas surrounding our operations in Sumatra and Kalimantan. See page 75 on our landscape initiative work.

6 New York Declaration on Forests, Goal 5. Available at https://forestdeclaration.org/goals#goal-5 [last accessed 17 June 2020].

Remediation and compensation project at PT. MPG, Central Kalimantan

In 2012, Musim Mas acquired PT. Multipersada Gatramegah (MPG), a mill with plantation in Central Kalimantan. In April of that year, Musim Mas carried out HCV and social impact assessments.

We recognise that the previous owners of the land carried out commercial land clearing between 2008 and 2010 without conducting an HCV assessment. In 2014, the RSPO launched a Remediation and Compensation Procedure (RaCP) to address land clearance and development undertaken since November 2005 without prior HCV assessments. Musim Mas voluntarily agreed to the terms of the procedure to compensate for the environmental liabilities of the previous owners and carry out necessary remediation measures. PT. MPG's Land Use Change Analysis was externally reviewed by the World Resources Institute (WRI), and the RaCP for PT. MPG was approved by the RSPO in February 2015.

PT. MPG's estimated net environmental compensation liability amounted to 540 hectares, but it was determined that there were no HCV social liabilities. As compensation for the environmental liability, we have set aside 981 hectares. The RaCP is being implemented *in-situ* within our concession, and includes a comprehensive management and monitoring plan, in addition to the ongoing HCV and social impact management programmes. Our RaCP strategy is to enhance the ecological and watershed services for PT. MPG and to reconnect the remaining fragmented forest areas within PT. MPG and the external forest areas. Since 2016, we have submitted annual progress reports for RSPO audits, and in December 2019, we submitted our first five-year progress report to the RSPO.

Together, our RaCP area and HCV area total 2,737 hectares of land that have been set aside for conservation, making up 29% of our PT. MPG concession.



MONITORING AND MANAGING FIRES

Fires within Musim Mas concessions limited to similar number as 2018 despite forest fires



> 6 million ha monitored daily for hotspots across Indonesia and Malaysia, covering Musim Mas and supplier concessions



Founding member

FFA FIRE FREE ALLIANCE

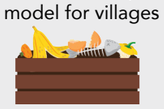
75 villages, 458,361 ha covered under FFVP; 148 trainings conducted in 2019



32 villages rewarded for staying fire-free in 2019



Completed partnership with UNRI on composting model for villages

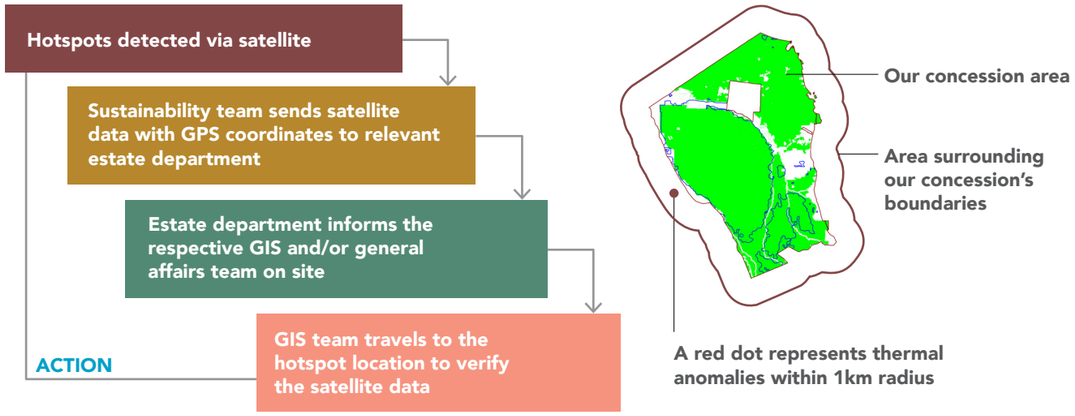


Applying a strict no-burn policy, we do not allow the use of fire within our operations or those of our suppliers. In August and September 2019, the regions of Sumatra and Kalimantan struggled with raging forest fires resulting in a toxic haze that blanketed Indonesia and neighbouring countries. Such catastrophic events jeopardise oil palm operations and pose tremendous risks to people's wellbeing and livelihood.

OUR STRATEGY ON IMPLEMENTING OUR STRICT-NO BURN POLICY

To respond to such situations, and to complement our efforts towards zero deforestation, we have implemented several programmes to manage and monitor fires on our estates, in surrounding areas, and on the lands of suppliers and independent smallholders. We also engage with local communities through the Fire Free Village Program (FFVP) and continue to scale up our landscape initiatives to educate local populations on our No Deforestation, No Peat, No Exploitation (NDPE) commitments and the RSPO criteria through supplier engagement and Smallholder Hubs.

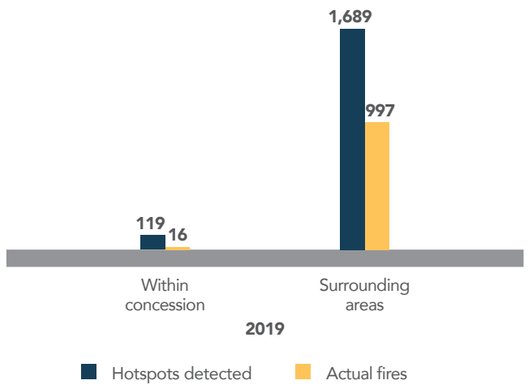
MANAGING HOTSPOTS AT OUR CONCESSIONS AND IN SURROUNDING AREAS: FROM DETECTION TO ACTION





In 2019, our monitoring systems identified 119 hotspots within our concessions. Only 16 of these turned out to be fires, amounting to 49 hectares of burned land, a slight increase over the area affected in 2018 (48 hectares). We managed this despite the significant jump in the number of fires in Sumatra and Kalimantan from August to September, through strict adherence to our zero-burn policy and strengthened fire management processes. We also detected 1,689 hotspots in areas surrounding our estates, of which 997 were fires. This is a six-fold increase in detected hotspots and a nine-fold increase in actual fires over the previous year and was due to the raging forest fires of August and September 2019.

HOTSPOTS VS. FIRES WITHIN CONCESSIONS AND SURROUNDING AREAS



	Managing risks of fire	Monitoring fires and systems
Musim Mas estates and surrounding area	Implementing strict SOPs on no burning Training and equipping firefighting teams at all of our plantations to take action at the first sign of an outbreak and report to headquarters immediately Our firefighting crews also assist district and provincial governments in combating fires	Satellite monitoring using platforms such as the WRI Global Forest Watch Fires map to watch for hotspots at and around our concessions
Suppliers	Engaging suppliers through workshops on understanding NDPE requirements	Satellite monitoring of concessions through the Earthqualizer platform
	Addressing suppliers through the Controlled Purchase Protocol when fires have occurred within their concessions	Ensuring suppliers have systems or processes in place to manage fires
		Collaborating through the Radar Alerts for Detecting Deforestation (RADD) partnership
Independent smallholders	Carrying out education programmes through our smallholder initiatives on alternatives to fire use, such as composting and using fallen leaves to manage soil erosion	Satellite monitoring of independent smallholders under our programmes

EDUCATING COMMUNITIES THROUGH THE FIRE FREE VILLAGE PROGRAMME

While fires are usually caused by extremely dry weather, some are due to local communities using illegal slash-and-burn methods to clear farmlands for crops. As a member of the Fire Free Alliance, we launched our FFVP to engage and educate local communities. Our training programmes cover understanding the risks associated with the use of fire for land preparation, employing agronomic best practices, and using alternative methods for land clearance. We also provide these villages with firefighting equipment and safety gear. In addition, we incentivise communities that remain fire-free by awarding them with infrastructure improvements and services. As at December 2019, the FFVP covered 75 villages spanning 458,361 hectares. In 2019 alone, we conducted 148 trainings in these communities.

In 2019, we completed a programme with Universitas Riau (UNRI) on a composting model that was adopted by three nearby villages. Through this initiative, we taught community members how to compost organic waste and ensure their lands are kept free from fire.

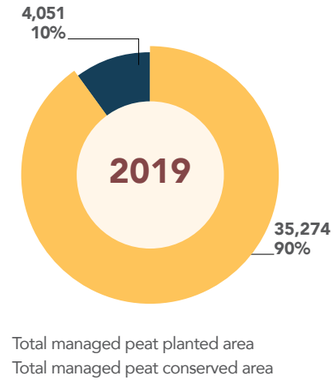
CONSERVING PEAT AND MAINTAINING SOIL HEALTH



Any new development on peat, regardless of depth, is strictly prohibited. This is because peatlands store twice as much carbon as the rest of the world's forests and are more susceptible to catching fire. We currently operate existing plantations on 35,274 hectares of peat. We regulate water levels and maintain water tables to reduce greenhouse gas emissions in these areas, in compliance with local regulations and best management practices. An additional 4,051 hectares of peat area have been identified through our HCV and HCSA assessments and are maintained as conservation areas. Musim Mas has worked with the Indonesian Ministry of Environment and Forestry and independent peat experts to evaluate critical peat areas and other areas requiring restoration. Our peat maps are available on pages 90-92.

MANAGED PEAT AREA PLANTED AND CONSERVED (ha, %)

Total area: 39,324 ha



We are also committed to maintaining soil health and structure by promoting topsoil fertility. This is achieved by reusing bio-waste and organic matter from our plantations to return nutrients to the soil.

CARBON FOOTPRINT

RSPO-certified mills	
9.7% reduction in net GHG emissions from 2018	19.8% reduction in GHG emission intensity recorded; 53% lower than 2006 baseline (Target: 55% by 2025)

All mills with methane captures		
15th methane capture built	549,317 MT CO_2e in overall emissions avoided from methane capture facilities	54,184,137 kWh in surplus electricity generated exported to national grid

The 2019 United Nations Environment Programme reported that global greenhouse gas (GHG) emissions must be reduced by 7.6% per year from 2020 to 2030 to meet the cap of a 1.5°C increase in average global temperature.[7] Musim Mas takes the impact of climate change seriously and is strongly committed to minimising GHG emissions within our operations. Our sustainability teams, senior management and the Board, are all involved in decision-making relating to our climate-

7 United Nations Environment Programme (2019). Emissions Gap Report 2019. Available at https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y [accessed 29 April 2020]

GROUP SCOPE 1 & SCOPE 2 EMISSIONS BY REGION 2019 (MT CO_2e)

	Indonesia	Rest of Asia	Europe	America
Scope 1	1,125,026	59,806	90,757	0
Scope 2	244,529	26,482	20,098	77

GROUP SCOPE 1 & SCOPE 2 EMISSIONS BY BUSINESS ACTIVITY 2019 (MT CO_2e)

	Oil palm plantations	Palm oil mills	Refineries & oleochemical plants	Others
Scope 1	385,745	55,727	764,983	69,134
Scope 2	0	106	290,436	644

Note:
Data included in CDP submissions covers the previous year's figures.

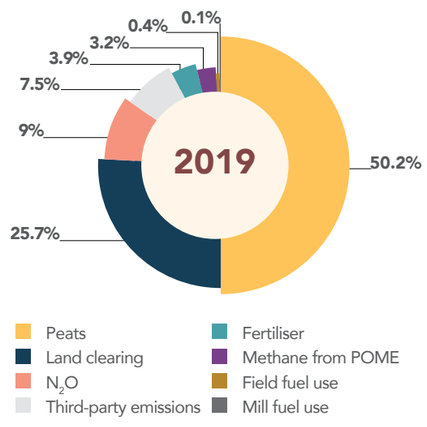
related risks and opportunities to ensure emission reductions are adequately managed throughout our operations. Our 2019 CDP submission provides more details.

Since 2006, we have seen a significant reduction in our emissions, primarily due to our commitments around no new planting on peat and conservation areas, employing good water management practices on existing planted peat, maintaining soil health and structure, and operating zero-discharge mills. Our focus is now geared towards improving yield and continuing the installation of methane capture facilities.

We track our carbon footprint at the Group level using the GHG Protocol methodology. As per our 2019 Climate Change submission to CDP, our total Scope 1 and Scope 2 emissions amounted to 1,566,775 MT of carbon dioxide equivalent (CO_2e).

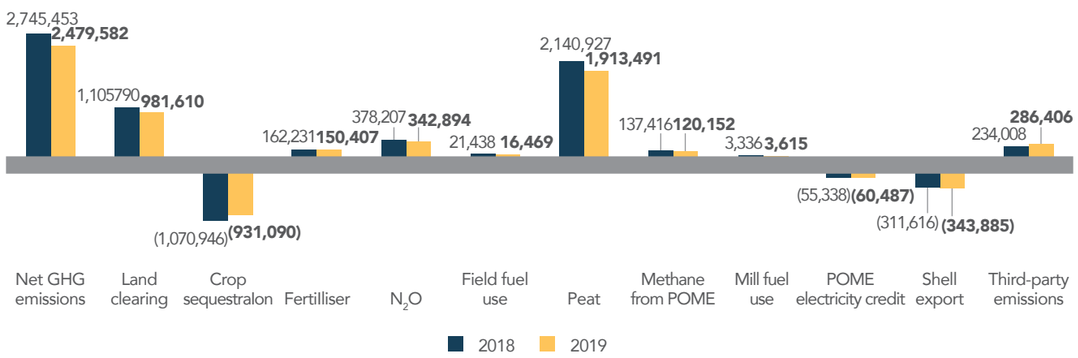
We also track GHG emissions at our RSPO-certified mills, using version 3.0.1 of the RSPO PalmGHG calculator. Our primary emissions sources derive from peat (50.2%) and land-use change (25.7%). Our overall net GHG emissions amounted to 2,479,582 MT CO_2e in 2019, which is 9.7% less than our 2018 figures. Despite an increase in mill fuel use and third-party emissions, we saw overall reductions in emissions generated by land-clearing activities, and the use of fertiliser and nitrous oxide. 2018 data also included the accidental double-counting of peat emissions from two mills that share the same supply base but were audited at different times. For this cycle, their audits were streamlined, thus eliminating this duplication.

GHG EMISSIONS BY SOURCE 2019 (%)
RSPO operations



Note:
The RSPO auditing cycle covers data from the previous year.

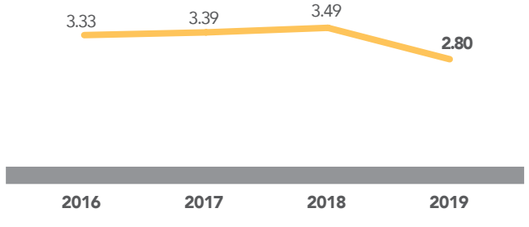
GHG EMISSION SOURCES AND SINKS (MT CO_2e)
RSPO operations



Notes:
1. The RSPO auditing cycle covers data from the previous year.
2. Peat data was double counted for 2018 as per the auditing process, and therefore not comparable to 2019.
3. At present, we do not have data for conservation area offset, mill electricity credits, or grid electricity utilisation.

In 2019, our total GHG emission intensity for RSPO certified mills was 2.80 tonnes of carbon dioxide equivalent per tonne of crude palm oil processed (MT CO_2e/MT CPO), showing a 19.8% decrease from 2018. We also recorded a 53% reduction in GHG emission intensity against our 2006 baseline. These reduced figures can be partially attributed to the double-counting of peat emissions from the previous cycle, with actual peat emissions being lower in 2019. However, two of our estates also saw a significant increase in FFB yield from new plantings and replantings, resulting in a reduction in emissions intensity. With this, we are well on track to meet our 2025 target to reduce our GHG emission intensity by 55% compared to our 2006 baseline (2.68 MT CO_2e/MT CPO).

GHG EMISSION INTENSITY (MT CO_2e/MT CPO)
RSPO operations



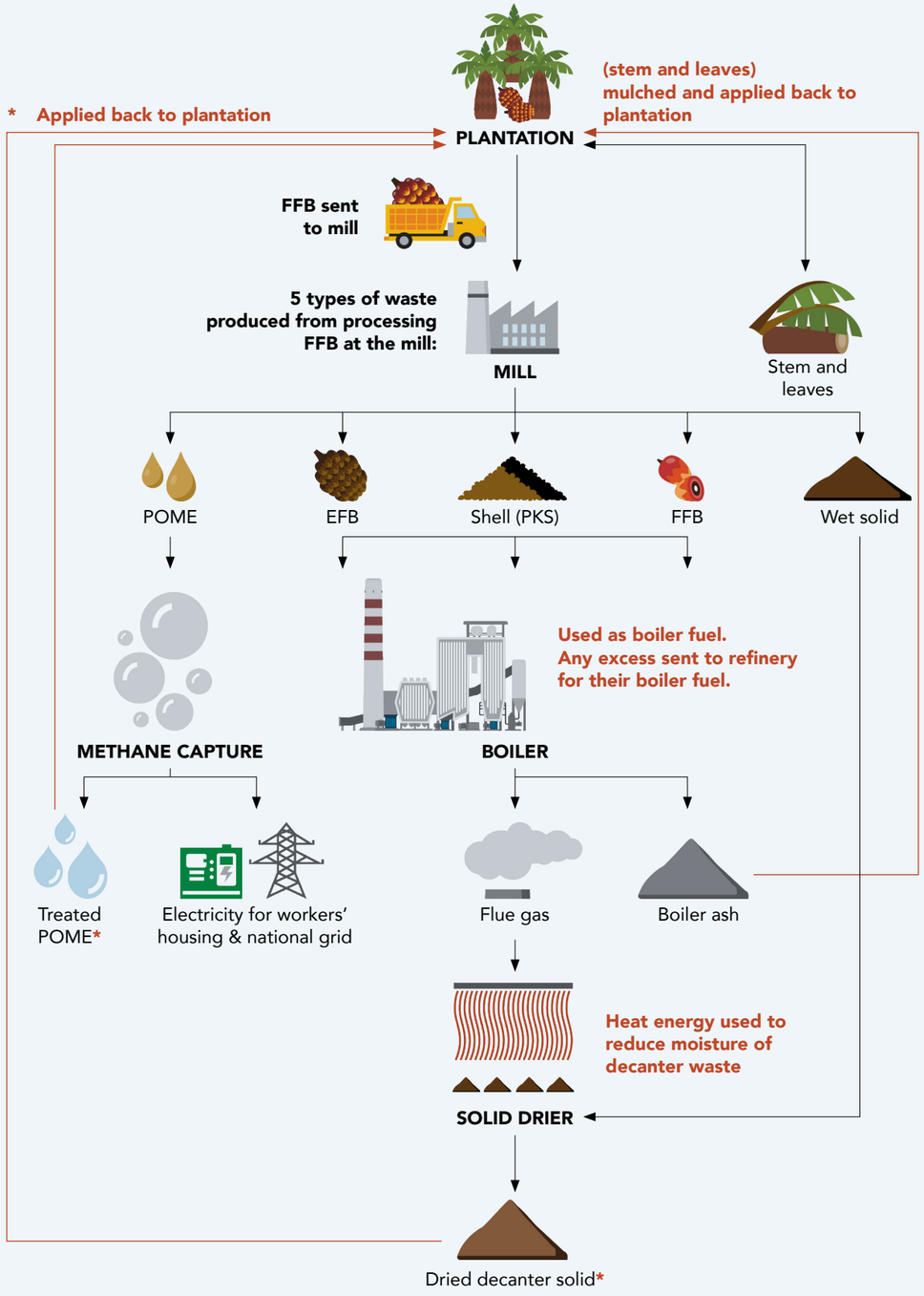
Note:
Data calculated covers RSPO auditing cycle data from the previous year.

REDUCING, REUSING, RECYCLING AND RECOVERING WASTE

All waste produced by our operations is identified and categorised into liquid, solid and gas, and is handled in accordance with our SOPs. We have relevant waste management procedures in place for all hazardous waste and domestic waste, as well as mitigation and prevention measures to reduce the risk of environmental pollution. We regularly educate workers on waste handling and segregation.

In all plantation and mill processes, we implement the '4Rs' to manage waste: reduce, reuse, recycle, and recover. At our plantations, old palm tree fronds and trunks are mulched and applied as organic fertiliser. At our mills, we also continuously achieve 100% zero-waste from our CPO and PK production processes. Dried decanter solids and boiler ash are applied at plantations as organic fertiliser and POME is treated and applied to land as irrigation. The heat from boiler flue gas is used to dry decanter solids. We also recover energy from empty fruit bunches (EFB), palm kernel shells (PKS) and palm fibre to use as boiler fuel and any excess is sent to the refineries for their boiler fuel. In 2019, we produced 745,008 MT of PKS and palm fibre, which generated more than 5,000,000 gigajoules of energy. See the next section on methane recovery from POME.

OUR APPROACH TO WASTE MANAGEMENT



METHANE RECOVERY FROM POME

We have commissioned methane capture facilities at our mills to harness methane generated by the treatment of palm oil mill effluent (POME). It is then churned it into electricity to power our mills, our estates and our workers' housing. Since 2014, we have also been exporting surplus electricity to the national grid. In 2019, this amounted to 54,184,137 kilowatt-hours (kWh).

We built one new methane capture facility in 2019, bringing the total to 15. The methane capture at our newly commissioned mill in Central Kalimantan is under construction, and we expect to complete it in 2021.

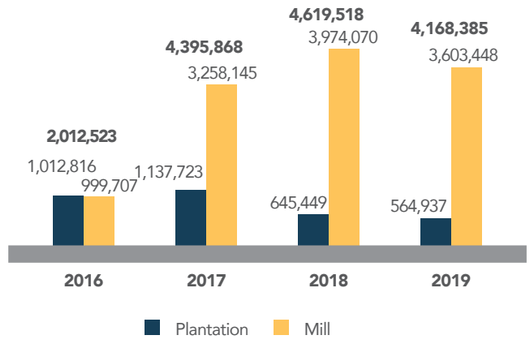
With 15 operational methane captures, a total of 537,965 MT CO_2e of emissions were avoided in 2019.

EMISSIONS AVOIDED DUE TO METHANE CAPTURES (MT CO_2e)

Recognising that water is a finite global resource, Musim Mas has adopted comprehensive measures to maintain the quality and availability of surface water and groundwater for our business and surrounding communities.

We measure the water used at our plantations and mills, and the water usage intensity at our mills. In 2019, we used 4.17 million cubic metres of water (m^3) across our plantations and mills, a 9.7% reduction from 2018 due to less FFB processed in 2019. Our overall mill water usage intensity remained the same as 2018, at 1.23 m^3 per metric tonne of FFB processed (m^3/MT FFB) despite having opened a new mill that was fully operational in October 2019. We have achieved our 2019 target of maintaining water usage intensity to below 1.25 m^3/MT FFB and are now working towards a new target of 1.2 m^3/MT FFB by 2021.

WATER USE (m^3)
Plantations and mills



WATER MANAGEMENT

Mill water usage intensity of 1.23 m^3/MT FFB

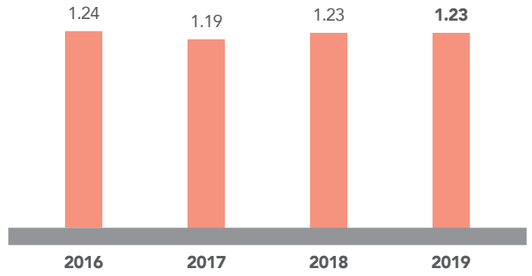
Targets:
1.25 m^3/MT FFB by 2019;
1.2 m^3/MT FFB by 2021

Water Footprint Network methodology used to measure water consumption

water footprint network

Maintained positive net water balance despite the drier season in 2019

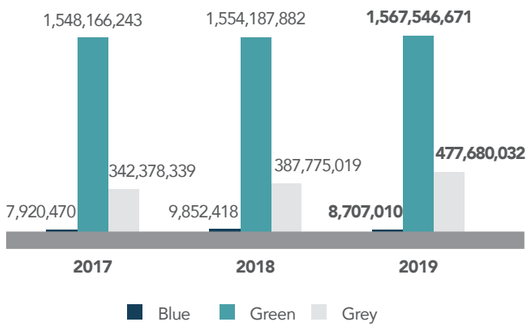
MILL WATER USAGE INTENSITY (m^3/MT FFB)
Target: 1.2 m^3/MT FFB



Musim Mas is one of the few companies in the palm oil industry that uses the Water Footprint Network methodology to measure water consumption. This methodology provides guidance on conducting a water footprint sustainability assessment that includes criteria for understanding the environmental sustainability, resource efficiency and social equity of water use, in terms of consumption and pollution. It also measures indirect water consumption.

In 2019, we prioritised using fertiliser with less water footprint, which resulted in lower blue water consumption. However, we used more ground fertiliser, which resulted in a 23% increase in grey water consumption to dilute the pollutants. Despite the longer dry season of 2019, we managed to maintain a positive net water balance. As a result, the water used at Musim Mas operations was less than the water collected from rainwater throughout the year. For the interim, we target to reduce grey water consumption levels by 2.75% if fertiliser usage is 10% below 2016 levels, 5.5% if fertiliser usage is 20% below 2016 levels, and 8.25% if the fertiliser usage is 30% below 2016 levels. We are working to refine the target once more data is collected.

WATER CONSUMPTION (m^3)

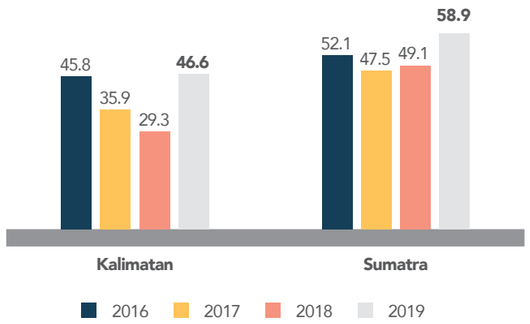


Note:
Blue water covers fresh surface or ground water, green water covers rainwater, and grey water covers the amount of water used to dilute pollutants.
Source: Water Footprint Network.

MANAGING EFFLUENTS

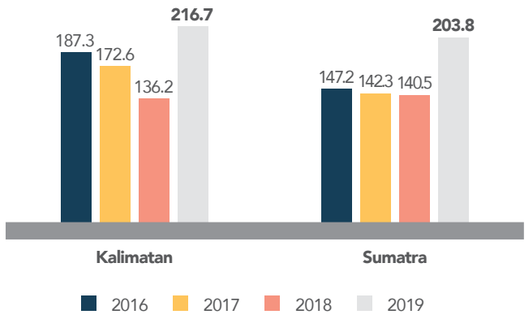
We treat all POME before it is discharged. Biological oxygen demand (BOD) levels and chemical oxygen demand (COD) levels are strictly managed and kept below regulatory thresholds to avoid any impact on groundwater and nearby water sources.

LAND APPLICATION BOD LEVELS AT MILLS BY REGION (mg/L)



Notes:
- Regulatory threshold: 5,000 mg/L

LAND APPLICATION COD LEVELS AT MILLS BY REGION (mg/L)

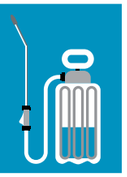


Notes:
- Regulatory threshold: 350 mg/L

We also monitor phosphorus and nitrogen levels in watercourses through inlet and outlet points situated upstream and downstream of each river's crossing concessions. Phosphorus and nitrogen are natural nutrients and part of aquatic ecosystems, but excessive amounts can lead to nutrient pollution. This causes algae to grow faster than ecosystems can handle, thereby severely reducing or eliminating oxygen in the water and affecting the health of fish and other aquatic life. While there is no national guideline on these thresholds, we maintain phosphorus and nitrogen levels within reasonable bounds.

REDUCING RELIANCE ON CHEMICALS

2 pesticides phased out in 2019, totalling 4

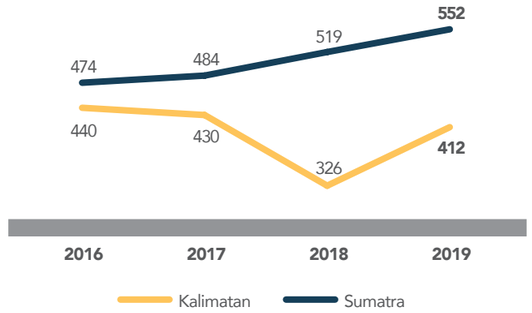


We strive to reduce reliance on chemical fertilisers and pesticides by optimising their use and replacing with organic substitutes where possible. We have banned chemicals such as paraquat from our operations since 2011, and have adopted internal standards and best practices in excluding chemicals that are outlined in the following documents:

- Class 1A or 1B pesticide hazards by the World Health Organization (WHO)
- The Stockholm and Rotterdam Conventions
- The Forest Stewardship Council's (FSC) Highly Hazardous Lists
- The Rainforest Alliance's Sustainable Agriculture Network's (SAN) prohibited pesticide list.

When handling chemicals, our workers adhere to strict health and safety policies and procedures on using personal protective equipment (PPE) we provide. They also undergo regular safety training and medical check-ups. We track the use of pesticides at our estates and monitor toxicity levels. We have found that our current range of 320-555 toxicity units per hectare is closely aligned with best practices in the palm oil industry.

TOXICITY RATES BY REGION (TOXICITY UNITS/ha)



Supported by our research and development (R&D) teams, we study and employ best management practices and have implemented an integrated pest management (IPM) system to reduce reliance on pesticides and herbicides, and to manage pest outbreaks. In November 2018 Musim Mas carried out an independent review to assess the effectiveness of pesticides used at one of our Riau plantations. Evaluated against POIG requirements, we employed a phase-out plan for ten of these pesticides. There is currently no alternative for one of these pesticides, Carbosulfan. Therefore, we only use it in emergencies and will continue to seek pre-approval from the POIG Organising Committee until a safe alternative is found.

In 2019, we successfully transitioned away from using benomyl and glufosinate-ammonium, bringing our total to four phased-out pesticides since 2018. We are on track to phase out the remaining five products by 2021 and intend to begin phasing them out as soon as promising alternatives are found.

PESTICIDE PHASE-OUT PLAN

Active ingredient	Type	Toxicity (rats) mg/kg LD50	Expected phase-out date	Progress/remarks
Brodifacoum	Rodenticide	0.4	Dec 2018	Achieved
Permethrin	Insecticide	430-4,000	Dec 2018	Achieved
Benomyl	Fungicide	>5,000	Dec 2019	Achieved
Glufosinate-ammonium	Herbicide	2,000	Dec 2019	Achieved
Cypermethrin	Insecticide	240-4,150	Dec 2020	Screening for alternatives
Mancozeb	Fungicide	>5,000	Dec 2020	Conducting trials for alternatives
Chlorpyrifos	Insecticide	135-163	Dec 2021	Conducting trials for alternatives
Coumatetralyl	Rodenticide	16.5	Dec 2021	Awaiting government approval for use
Warfarin	Rodenticide	186	Dec 2021	Awaiting government approval for use
Carbosulfan	Insecticide	250	For emergency use only	Currently no alternative. Musim Mas to seek POIG OC approval for emergency use.



MINIMISING USE OF GLYPHOSATE-BASED HERBICIDES

While it is not currently included in any of the banned pesticides lists, we recognise the growing concerns around the use of glyphosate formulations as toxic, persistent and probably carcinogenic. Glyphosate-based herbicides (GBH) are used to manage weeds at plantations, specifically to reduce competition with our palms for nutrients, moisture and sunlight, and to facilitate fertiliser application, harvesting and crop evacuation. They are also employed to maintain access paths for harvesters.

To minimise their use, we employ good agricultural practices such as planting vigorous and shade-tolerant leguminous cover crops to suppress weeds and improve nitrogen levels, increase organic matter, and reduce soil erosion. The Group practices site-specific usage of GBHs that is catered to the age of palms, ground cover conditions, and the area of application. This enables us to monitor, supervise and minimise their use throughout our operations. At the same time, our R&D department has planned a series of field trials that explore improving the effectiveness of GBHs, herbicide rotation and substitutes, and the timing of GBH application and dosage. Initial results have identified a few promising alternatives. However, these chemicals are less cost-effective and difficult to procure in Indonesia. We continue to take a proactive approach towards reducing and phasing out GBHs.

We are also collaborating with other POIG members to publish a working document in early 2021, that will showcase grower-members' innovations and efforts to reduce and phase out glyphosate-based herbicides where possible.

Safeguarding the welfare of our people

Our core values include respecting, protecting and upholding the rights of our employees, and members of the communities surrounding our operations. Our commitments are outlined in the United Nations (UN) Universal Declaration of Human Rights, the International Labour Organization (ILO) conventions, the UN Declaration on the Rights of Indigenous Peoples, the Food and Agriculture Organisation's Voluntary Guidelines on the Responsible Governance of Tenure, and the UN Guiding Principles on Business and Human Rights.

As a member of the Palm Oil Innovation Group (POIG), the Roundtable on Sustainable Palm Oil (RSPO) Human Rights Working Group, and the High Carbon Stock Approach (HCSA) Social Requirements Working Group, Musim Mas is committed to working with our peers to improve industry standards and share best practices.

OVERVIEW OF OUR WORKFORCE

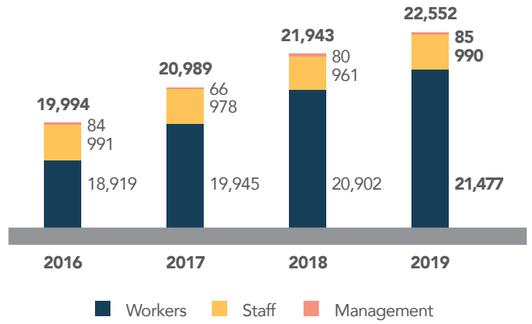


22,552 employees
at plantations and mills

A crucial element of our operations is safeguarding the livelihood of permanent and temporary staff and workers across the Group. Our practices and policies are aligned with the Free and Fair Labor in Palm Oil Production Principles and we have implemented strict measures to prevent child, slave and forced labour, and unlawful, unethical or abusive treatment of any kind. Discrimination and harassment are not tolerated in any way.

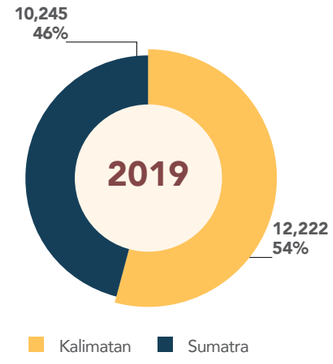
The workforce at our operations in Sumatra and Kalimantan is made up of 22,552 people, including management, staff and workers.

EMPLOYEES BY CATEGORY (no.)

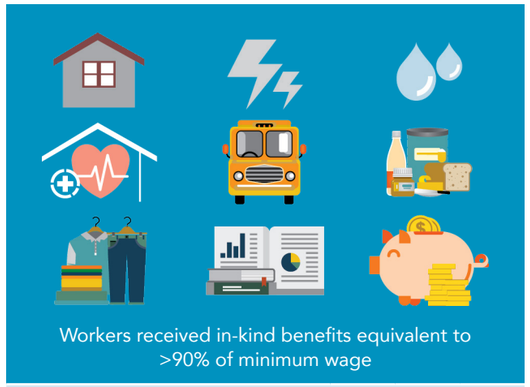


Note:
Management are employees who hold managerial positions, staff refers to salaried employees who are either stationed at the offices or in the field, and workers are waged employees who work at our plantations and mills.

PALM OIL WORKERS AND STAFF BY REGION (no., %)



WORKING AT MUSIM MAS



PROVIDING A DECENT LIVING WAGE (DLW)

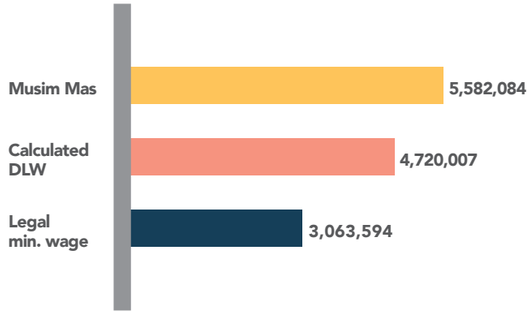
All pay and employment conditions for staff and workers (including temporary workers) meet legal minimum wage standards. In addition, we ensure sufficient provisions to enable families to afford a basic but decent standard of living. Offering a decent living wage and healthy living conditions ensures that staff and workers feel more secure. The result is an increase in work commitment and productivity, improved confidence in employers like us, and lower absenteeism rates.

At Musim Mas, this is achieved by providing workers with in-kind benefits on top of their wages, including healthcare, childcare, housing, electricity and water, education for children, and transport. Our approach is in line with the June 2019 RSPO Guidance for Implementing a Decent Living Wage.

Across the Group, the monetary amount of the benefits provided in 2019 was equivalent to 90% or more of the minimum wage set by the Indonesian government. We also provided more than 13,400 houses to our employees as at December 2019. All salaries and opportunities are based on merit without discrimination between genders.

Example: Wages at PT. Multipersada Gatramegah (MPG)
At our PT. MPG operations in Central Kalimantan, we pay workers a monthly salary of IDR 3,315,594 (where the minimum wage is IDR 3,063,594). With in-kind benefits, monthly wages equate to IDR 5,582,084 per worker, or 82% more than legally required. This amounts to IDR 862,077, which is 18.2% more than the required Decent Living Wage, based on the 2019 RSPO guidance.

WAGES PAID AT PT. MPG (IDR)



BREAKDOWN OF IN-KIND BENEFITS AND CALCULATED DLW AT PT. MPG

Wages paid	Amount (IDR)
In-kind benefits	**2,266,490**
Housing	550,000
Electricity	85,000
Clean water	91,980
Thirteenth month pay for festivities	276,300
Education	767,272
Crèche	90,477
Transportation	405,461
Monthly salary per worker	**3,315,594**
Total wages paid to workers	**5,582,084**

Calculated DLW	Amount (IDR)
Food basket	1,890,240
Housing basket	981,723
Non-food non-housing	3,958,554
Sub-total	**6,830,517**
Unexpected costs (5%)	341,526
Total living cost	**7,172,043**
(÷) Full-time equivalent	(÷) 1.56
Net living wage	**4,597,463**
Health insurance	**122,544**
Gross DLW wages	**4,720,007**

Note:
Full-time equivalent is the number of working adults per household, determining the wage that one full-time equivalent should earn for a reference family to cover its living costs.

CONTRACTS AND PROVISIONS

Parental leave and retirement provisions are in line with legal requirements in Indonesia, which are three months and two days for maternity and paternity leave, respectively, as well as employer and employee contributions towards the Old Day Security (*Jaminan Hari Tua*) and Pension Security (*Jaminan Pensiun*). All our workers have access to health insurance for any work-related risks and hazards. They are provided with copies of their contracts, have access to personnel policies through handbooks, and are given three months' notice of any changes to agreements. All workers retain control over their identity documents.

WORKING HOURS

Since 2016, we have worked with Verité to assess and improve labour practices best suited to the specific context of our operations. One of the outcomes from our collaboration has been better control of working hours for our employees. Collective bargaining agreements spell out provisions on working hours, where overtime is capped at 14 hours a week, and three hours a day. Some employees who choose to work extra hours during peak periods are fairly compensated and paid overtime at a premium. Harvest targets are set with workers and built into their performance assessments.

ACCESS TO GRIEVANCE MECHANISMS

All permanent and temporary employees have access to a transparent and accountable grievance mechanism. Our whistleblowing procedure guarantees anonymity enabling a safe avenue for grievances to be raised without fear of reprisal or dismissal. Workers are able to raise complaints through using multiple facilities made available in and around all our operations.

FREEDOM TO UNIONISE AND COLLECTIVELY BARGAIN

Permanent and temporary workers are free to join any association, union or collective bargaining agreement. These agreements adhere to government regulations and are valid for all employees. We maintain positive relationships between management and union representatives, who meet regularly to discuss matters such as wages, benefits and leave. Currently, 81.9% of our employees in Sumatra and Kalimantan belong to workers' unions.

DEVELOPMENT OPPORTUNITIES

We equip workers for their jobs through regular and relevant training. We also provide development opportunities by investing in capacity building and technical skills programmes to help employees achieve their career goals while contributing to the growth of the company.

INFRASTRUCTURE

To support the welfare of our workforce, we make substantial investments in infrastructure development, including roads, sewage and drainage, housing (only provided to permanent workers), medical facilities, schools, and amenities such as clean, safe water. We also organise interactive programmes and events to enhance morale and camaraderie between employees and nearby communities. Our total infrastructure area amounts to 7,621 hectares across our nucleus estates.

ADDRESSING WORKERS COMPLAINTS/ GRIEVANCES

To address workers complaints and grievances, we endeavour to:



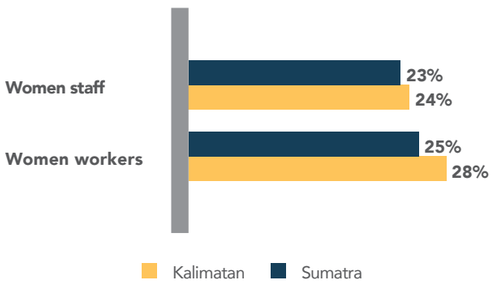
1. Communicate the complaint/ grievance procedure to stakeholders/workers at least once a year.
2. Assist illiterate parties in submitting their complaints/grievances.
3. Respect and ensure the anonymity of complainants, human resource departments, community spokespersons and whistleblowers, and to protect all parties conveying complaint/grievances.
4. Record all complaints/grievances in a complaints/grievance book.
5. Coordinate with management heads and follow-up on all complaints/grievances submitted within agreed-upon timeframes.
6. Coordinate with an independent party or mediator regarding a complaint/grievance, if needed.
7. Resolve the complaint/grievance as soon as possible with a solution that benefits both parties while still considering the legal position or the laws and regulations applicable in Indonesia.
8. Record wholly and accurately all phases of the complaint/grievance resolution process, including a record of parties involved.

EQUAL OPPORTUNITY AND GENDER EQUALITY



All employees are hired and promoted based on their competency, capability and experience regardless of gender, race, nationality, religion, age or union affiliation. All are provided equal pay for equal work, regardless of gender, and women make up 27% of our total workforce. Two women in Sumatra work in middle management, representing 3% of that employment pool. Hence, the ratio of the minimum wage paid to male and female workers is 1:1.

WOMEN EMPLOYED BY LEVEL BY REGION (%)



We regularly train employees on our no discrimination policy and standard operating procedures. Some jobs are male-dominated due to the manual nature of agricultural work. Additionally, many women prefer temporary or part-time work to balance their household duties and childcare commitments. Recognising this, we strive to promote gender equality and support the inclusion of women across all operations and to assist them in addressing any barriers they may face. We will also develop a holistic action plan to attract more women into the workforce, using the RSPO gender guidance which is currently under public consultation.

Family Cards proving residency and family relationships are provided to heads of families, regardless of gender. At each site, there are dedicated Gender Committees that address any human rights or equality concerns, with a particular focus on women and children. Part of their role is to assist in eliminating gender-related discrimination, promote discussion of gender-related issues, and educate our workforce and communities on equality policies. These committees also address important issues on sexual assault and domestic violence.

Gender committees handle gender discrimination and harassment complaints. Cases can be lodged either through grievance procedures or raised based on information collected during regular visits and awareness sessions at workers' housing complexes. The committees' role is to investigate, resolve and document the grievance process. If a complainant opts to resolve the issue through legal proceedings, the committee members will provide the necessary support.

Musim Mas actively engages external parties, including provincial bodies such as the Women's Empowerment Office, to conduct workshops and share relevant knowledge with the Committees. We have also enacted new policies that support women's inclusion in the workforce, such as ensuring pregnant workers retain their position after maternity leave, and providing childcare services so that women can continue working. In 2019, we took steps to establish designated breastfeeding areas for women workers. We also regularly engage with working mothers to collect feedback on meeting their needs.

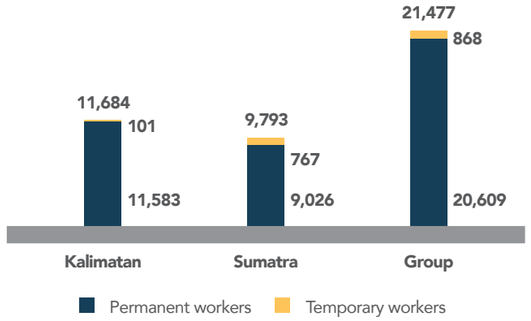
TEMPORARY WORKERS



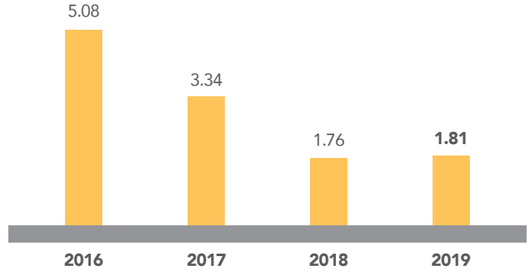
Only 868 of our workers are considered temporary or short-term contract workers, making up 4% of our total workforce. Temporary workers are generally hired for specific short-term jobs. In 2019, we required temporary workers in Sumatra to mark plots for replanting and to assist in census-taking during pest outbreaks.

We provide temporary workers with official short-term employment contracts to ensure they are formally recognised and are entitled to benefits such as work insurance. Workers hired under short-term contracts are also eligible for permanent recruitment after working for three months on a contractual basis.

PERMANENT AND TEMPORARY WORKERS BY REGION AND GROUP (no.)

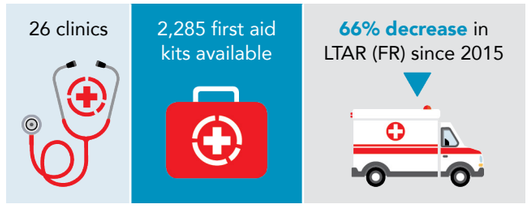


GROUP LOST TIME ACCIDENT RATES (FREQUENCY RATE) PER 200,000 WORKING HOURS



Note:
LTAR (FR) measures the productivity lost due to accidents and is calculated as follows: no. of accidents per 200,000 working hours divided by total working hours worked.

HEALTH AND SAFETY



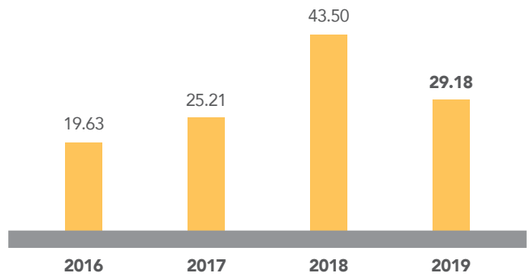
Our occupational safety and health policy mandates that the health and safety of our employees. OSH management and performance are overseen at the Group level, with Safety, Health and Environmental Quality committees enforcing measures and protocols at our sites. These committees meet quarterly and report to the Indonesian Ministry of Manpower. We conduct regular training and safety exercises at all our operations, and workers are required to wear adequate personal protective equipment at all times.

Across our operations, 26 clinics offer free healthcare to all workers and their families. A total of 2,285 first aid kits are also accessible at all sites. Workers handling pesticides and herbicides undergo monthly medical check-ups, and we maintain records on all employee illnesses.

We continue to remain vigilant with health and safety measures, resulting in a 66% decrease in lost time accident rates (frequency rate) – LTAR (FR) – since 2015. Severity rates have also decreased by 33% in 2019 as injuries were less serious.

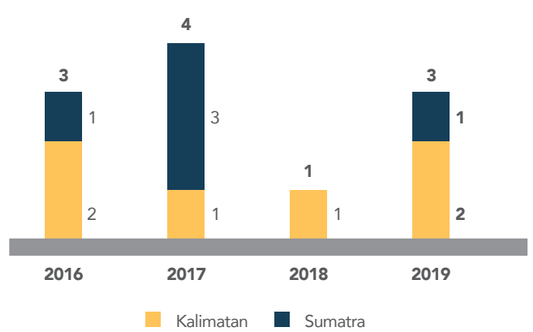
It is with great sadness that we must report three workplace fatalities in 2019, all resulting from vehicular accidents. Two of these accidents occurred outside of our plantation boundaries. The first involved a worker who drove into a stage assembled

GROUP SEVERITY RATES



Note:
The severity rate measures the seriousness of accidents and is calculated as follows: total number of days lost divided by the total number of accidents.

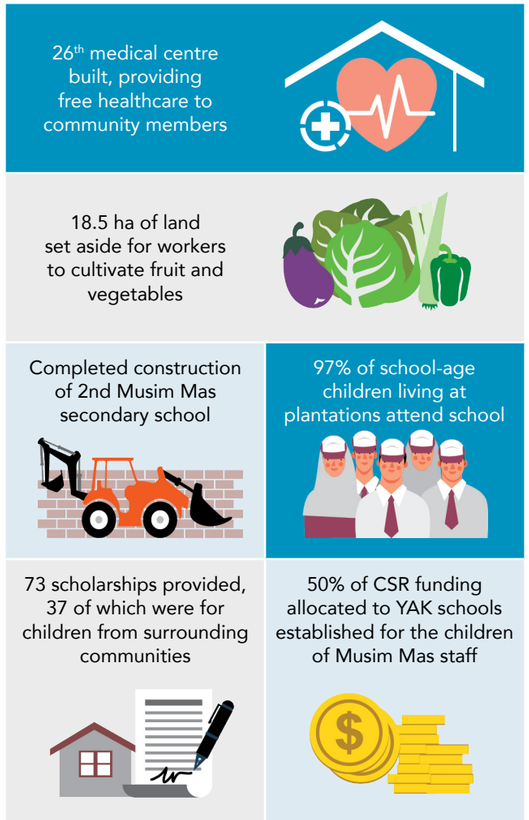
FATALITIES BY REGION (no.)



in the middle of the road by local community members. The second involved a collision with another vehicle. The third fatality occurred when a truck overturned due to slippery road conditions. We take every fatality seriously and completed a Hazard identification and Risk Assessment (HIRA) for each of these incidents. We have also educated workers on road safety and undertaken maintenance of roads within our plantation boundaries to minimise future accidents.

The health and wellbeing of our employees and their families remain our top priorities during the 2020 COVID-19 pandemic. We have adopted strict measures and procedures to maintain good hygiene, detect potential cases, and minimise physical interaction between employees. Our efforts include providing sanitiser, masks and other PPE. We also conduct regular briefings and communicate COVID-19 safety measures. An overview of our SOPs is available on page 05.

SAFEGUARDING COMMUNITY RIGHTS AND LIVELIHOODS



Palm oil contributes significantly to rural income in Indonesia. Its cultivation is a key driver of economic growth, contributes to alleviating rural poverty, and results in improved infrastructure for the population. Musim Mas uses every means at our disposal to support rural communities including, but not limited to, providing jobs, basic amenities, medical services, and education. Through long-term partnerships with communities and civil society organisations, we take to heart and work to address issues that are important to the communities in the areas where we operate.

UPHOLDING LAND AND COMMUNITY RIGHTS

We respect and uphold the human rights of all community members, including indigenous and local communities' rights and their legal and customary land tenure rights. No development or expansion of our operations is permitted without their Free, Prior and Informed Consent (FPIC), and all compensation for lost benefits or the relinquishing of rights is negotiated voluntarily, as agreed upon by the communities. Any open or outstanding conflict with communities is to be resolved according to our conflict resolution procedure and applicable social principles and practices.

We carry out participatory mapping with local communities, and feed the resulting data into our management, monitoring and land use plans. Until further guidance on their definition, we are working on more holistic Integrated Conservation Land Use Plans (ICLUPs) which incorporate findings on high carbon stock (HCS), high conservation values (HCV), peat areas and community consultations. We currently integrate our conservation and land use plans into our existing community programmes, such as our Fire Free Village Programme, Village Development Programme, and our HCV management and monitoring protocol.

SAFEGUARDING COMMUNITY HEALTH

Free healthcare is available to everyone at all our plantations and to nearby local communities through our 26 medical centres, the latest of which was built in 2019. Healthcare includes medical check-ups and routine vaccinations for infants. All community members also have access to health insurance, and our *Yayasan Anwar Karim* (YAK) (the Anwar Karim Foundation) has established free public health programmes in Medan and Surabaya.

Access to clean and safe water is limited in some parts of Indonesia and we implement continuous improvement methods to ensure that all workers and community members have access to this precious resource. Our efforts include building boreholes, providing clean drinking water at our sites, and installing simple water filtration systems for workers' homes. We consistently promote the efficient use of water to reduce wastage.

Providing local community support is at the forefront of our strategy to tackle the COVID-19 pandemic in 2020. We are carrying out educational awareness campaigns, providing adequate medical supplies to communities, and ensuring that vulnerable populations have ready access to food and nutrition. You can learn more about our COVID-19 support for local communities in Indonesia on our website: https://www.musimmas.com/covid-19-response/.



FOOD SECURITY

Local communities depend on gardening and growing produce to fulfil basic dietary needs and as a source of income. For these reasons, we have implemented programmes to maintain and/or strengthen food security at all of our facilities.

We provide all plantation staff with three meals a day. They are also given land at their homes and in community gardens to cultivate fruit and vegetables. These efforts are coupled with access to education programmes on gardening, and the provision of seedlings to grow their own food. As at December 2019, this land area amounts to 18.5 hectares across our 14 plantations. Within our compounds, workers have access to markets, convenience marts, and warungs (family-run convenience stores that sell food and other goods). They

2020 community food security programme

There is worldwide concern about food security due to the COVID-19 pandemic. Given the remoteness of the plantations that comprise our agricultural operations, we must ensure that our employees and neighbouring communities have access to a stable supply of food.

This is why we allotted a portion of our land at PT. Sukajadi Sawit Mekar (SSM) in Central Kalimantan to planting vegetables as a way of providing continuous access to food within the scope of our community awareness programme. As at June 2020, our Sebabi estate alone harvested half a hectare of corn, one hectare of sweet potatoes, and two hectares of other assorted vegetables. We have also launched this programme at three other estates under PT. SSM, with more than five hectares in total available to be harvested in the near future, as per the East Kotawaringin Regent's order of March 2020. We have made these plots available to Musim Mas employees who live on our plantations and to members of neighbouring communities to help minimise the impact of food supply disruptions that may occur during and after the pandemic.

Beyond the realm of conventional planting, the estate has also developed a hydroponic system to support the growing and harvesting process. In addition, PT. SSM cultivates and farms freshwater fish to further support community needs.



are also served by water depots where they can purchase additional potable water on top of the clean water available in their homes. For children under the age of five, nutritional supplements are provided through our integrated family planning service centre.

In communities surrounding our operations, members who sell land to the company are required to confirm that they have retained enough ground to grow their own food. This is to ensure they do not solely rely on the money received from selling their land and experience food insecurity. Through participatory mapping with these communities, we create land-use plans in surrounding areas to ensure sufficient land is set aside for food production. Musim Mas also allocates part of our CSR budget to support community food production by providing funds for cattle, fish seed, and agricultural seedlings. Funds are distributed after consultation with, or upon receiving investment programme requests, from surrounding communities.

PROVIDING CHILDREN ACCESS TO EDUCATION

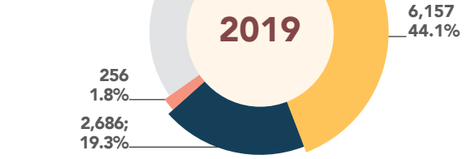
We believe that children need healthy, nurturing environments to optimise their development. We have established childcare centres at each of our estates to meet the needs of workers with pre-school children and ensure access to education for all school-age children living on our plantations. Within our operations, we have built and funded nine schools through *Yayasan Anwar Karim* (YAK). These schools provide elementary and secondary education to Musim Mas employees, as well as children from surrounding communities. In 2013, we built our first secondary school at PT. Guntung Indamannusa and in 2019, we completed construction of a second school at PT. Musim Mas.[8] The remaining students attend other neighbouring secondary schools, to which we provide free transport. Our schools are equipped with computer facilities, and students can enrol in extra-curricular programmes that include sports, music and activities that enhance their leadership skills. Through YAK, we provided 73 scholarships to students in 2019, 37 of whom were children from surrounding communities. We also work with a local NGO to provide uniforms and books to students living in surrounding communities.

There are 13,950 children of mill and estate workers under the age of 18 living at our plantations. They include 9,099 school-age children, 97% of whom are currently enrolled in YAK or neighbouring community schools. An additional 20 children from nearby communities have enrolled in our YAK schools.



CHILDREN LIVING IN PLANTATIONS (no., %)

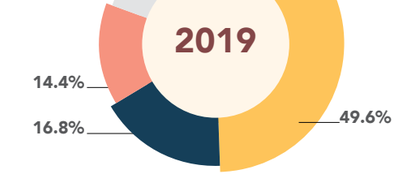
Total: 13,950



- Workers' school-age children attending YAK schools
- Workers' school-age children not attending schools
- Workers' school-age children attending outside schools
- Workers' children not of schooling age

CSR CONTRIBUTIONS (%)

Total: IDR 15,225 million



- YAK school
- Religion, social, culture
- Infrastructure
- Education
- Environment
- Community health facilities
- Economic development
- Supplementary
- Others

VILLAGE DEVELOPMENT PROGRAMME

In 2000 Musim Mas launched the Village Development Programme (VDP) as part of our CSR efforts, an outreach initiative for scheme smallholders tailored to community-managed plantations. Through VDP, Musim Mas facilitates funding and investment in oil palm development while providing communities with technical guidance and training on oil palm cultivation. Once the oil palm enters its productive years, it is sold to Musim Mas, and the villages that own these plantations receive the proceeds from sales of FFB. These funds are then used to cover operational costs and as instalments towards repaying investment costs. This initiative came about before the 2007 establishment of Indonesian regulations that require companies to facilitate the creation of plasma smallholder schemes for the benefit of surrounding communities. More on our scheme smallholders can be found on page 68.

YAYASAN ANWAR KARIM

We operate a long-standing outreach initiative through *Yayasan Anwar Karim* (YAK), which runs programmes that address needs like economic development, community facilities, and infrastructure. In 2019, almost 50% of our CSR funding was allocated to YAK schools established for the children of Musim Mas staff. Each YAK school has 15 to 20 classrooms and is equipped with support facilities, such as computer labs, libraries, places of worship (including mosques), clinics, canteens, and buses.

8 This is a restatement from previous reports which only mention the secondary school being built by 2019.

Building A Responsible Supply Base



Supply chain transformation at scale

Out of our total palm oil supply, 7% is produced by Musim Mas and a total of 3% is extracted from fresh fruit bunches (FFB) purchased directly from our scheme smallholders and independent smallholders. The bulk of our supply - 90% - comes from external sources, meaning third-party mills outside Musim Mas control. These mills receive FFB either from their own plantations (equivalent to 40% of our supply) or independent smallholders (50%). We are currently implementing measures to determine the total number of independent smallholders that participate in our supply base, but we estimate that it is up to one million farmers.

We have worked hard to ensure that Musim Mas production is sustainable, but many of our external suppliers have yet to adopt these standards. We therefore have set ambitious targets for supply chain transformation that will bring about change for many companies and smallholder farmers. Their progress will determine the success of our entire supply chain.

The Musim Mas Group Sustainability Policy ('Policy') guides our expectations of our suppliers. It requires them to comply with our clear commitments to No Deforestation, No Peat, No Exploitation (NDPE), which are central to our sustainability



WE ARE CURRENTLY IMPLEMENTING MEASURES TO DETERMINE THE TOTAL NUMBER OF INDEPENDENT SMALLHOLDERS THAT PARTICIPATE IN OUR SUPPLY BASE, BUT WE ESTIMATE THAT IT IS UP TO ONE MILLION FARMERS.

PROGRESS ON NDPE COMMITMENTS AS AT DECEMBER 2019

No Deforestation, No Peat	No Exploitation
80% of suppliers either have an NDPE policy or have adopted the Musim Mas Sustainability Policy	
27% of suppliers are certified to RSPO standards, in line with our NDPE commitments	
24% of suppliers self-declared their NDPE status via the Musim Mas Self-Assessment Tool	
Customised roadmaps have been developed with all primary suppliers and include action plans to address NDPE gaps	
90% of suppliers with concessions monitored for deforestation, peat development and fires. This area spans >6 million ha across Indonesia and Malaysia	Delivered classes on 'Gender and Social Issues in Oil Palm' to independent smallholders
Joined new industry coalition to detect deforestation in October 2019	Drafting plans to develop Indonesia-specific assessment for non-certified suppliers
Began trialling NDPE Implementation Reporting Framework (IRF) to track progress on 'D' and 'P' commitments	Drafting plans for NDPE IRF to trial tracking progress on 'E' commitments

efforts. In September 2020, we updated our Sustainability Policy to reflect our experience and articulate a renewed way to demonstrate our firm NDPE commitments across our operations and supply chain.

Through our monitoring and engagement activities, our ultimate goal is to ensure all suppliers and smallholders adopt practices to meet the same commitments. We are making considerable progress on our 'D' and 'P' commitments. With the help of technology, we are now able to geographically monitor our suppliers' concessions for deforestation, planting on peat, and fires. This enables us to determine if there have been any 'D' and 'P' breaches, take action, and influence our suppliers in meeting their commitments. However, monitoring our 'E' commitments, including adherence to Free, Prior and Informed Consent (FPIC), compliance with labour laws, and respect of workers rights, is not as obvious and has many unknowns. While industry actors work together to finds ways to effectively monitor these 'E' commitments, we continue to mentor our suppliers in understanding and upholding fundamental human rights.

Our 2020-2025 roadmap towards a responsible supply base

In September 2019, Musim Mas published a Roadmap to Responsible Supply Base (2020 and Beyond), clearly mapping out commitments for 2019, 2020 and 2025, around:

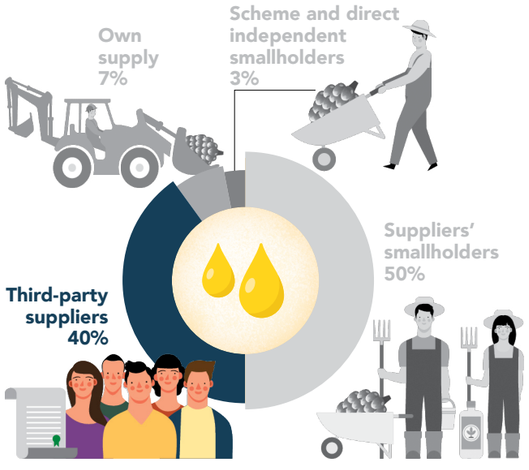
1. Traceability
2. Concession monitoring
3. Supplier engagement, including new suppliers
4. Mentoring of suppliers
5. Outreach to smallholders through dedicated programmes and landscape-level collaborations regardless of the destination of their FFB.

This timebound plan guides measurable actions on the ground and enables us to track our progress. The Roadmap can be found on our website.

'Plantation' vs. 'concession'

As we learn more about our supply base, we have come to realise it is highly diverse and comprises large and small plantation companies as well as scheme and independent smallholders. Some of these actors have formal land titles giving them land-use rights, while others have no such documents. Musim Mas uses the term 'plantation' to refer to the place of production, be it a large, industrial plantation with concessions and mills, a large farm without a mill, or a smallholder farm. We use 'concession' to specifically refer to the geographical boundaries of one of these areas, for example, when using satellites to monitor our suppliers' lands and facilities.

OUR SUPPLIERS





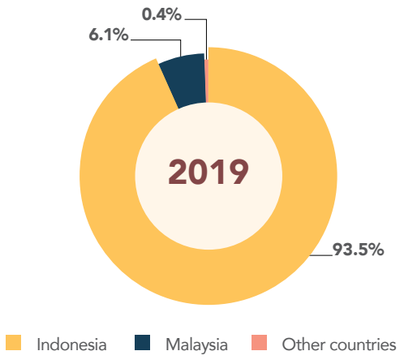
625 supplying mills from 297 supplier groups



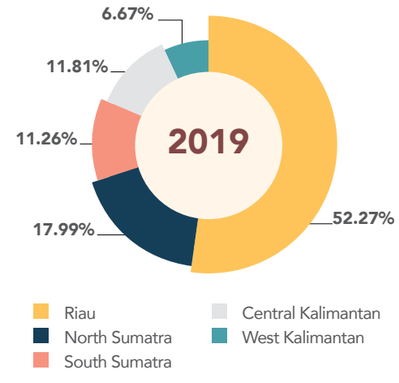
Supplier mills certified:
27% RSPO certified
43% ISPO certified
10% ISCC certified
(not mutually exclusive)

Out of the total volume we procure, 15% comes directly from the plantations of our primary suppliers, who are typically large- or medium-sized companies. These players contribute a significant long-term volume to our supply and/or are located in our priority landscapes. A further 25% comes from the plantations of our secondary suppliers, typically medium- or small-sized companies who supply limited volumes to Musim Mas. Half of our total volume comes through our third-party suppliers, specifically from independent smallholders who sell to them.

CPO SUPPLY BASE BY REGION (%)



TOP SUPPLYING PROVINCES IN INDONESIA (%)



Over 90% of our crude palm oil (CPO) volume originates in five provinces in Indonesia, while 6% is sourced from Malaysia, and less than 1% comes from other countries (i.e. Thailand, Colombia, and Guatemala). A list of all third-party supplying mills is available on our website.

CERTIFIED SUPPLY

A number of our suppliers have been certified against one or more sustainability standards. As at December 2019, 27% of supplier mills are Roundtable on Sustainable Palm Oil (RSPO) certified. Because they adhere to this standard, we know their supply is largely in line with our NDPE commitments. A total of 43% of supplier mills are Indonesian Sustainable Palm Oil (ISPO) certified, and 10% of supplier mills comply with the International Sustainability Carbon Certification (ISCC) standard.

How we engage with our suppliers

In our efforts to transform the industry, we engage with our suppliers in four ways:



The next four sections of this report expand on these approaches.

A group-level approach to supplier engagement

Some of the suppliers we source from are subsidiaries of larger producer groups belonging to parent or holding companies. These groups may operate mills and plantations in other regions that are not always part of our supply chain. As a result, we may not have direct visibility of the activities carried out by a group. We therefore employ a group-level approach to supplier commitments and engagements to eliminate indirect risks to our NDPE commitments.

To ensure top-down compliance, we engage the parent groups of our suppliers. The sustainability representative ensures attendance of our workshops, completion of the Musim Mas Self-Assessment Tool, and participation in our other supplier programmes. Data is collected for each mill belonging to a group to obtain a clear picture of our suppliers' operations. Therefore, while we engage with suppliers at the group level, data is presented at mill level.

As at September 2019, we have assembled profiles of all supplier groups currently supplying to Musim Mas and have made this process part of the actions we take for all new engagements. In 2020, we are employing individualised approaches to gear our efforts towards more one-on-one engagements with supplier groups. This way, we can better align our interventions to each group's journey towards achieving its NDPE commitments. These engagements will begin with groups requiring urgent attention, such as those with operations in high-risk landscapes, those being prompted by external stakeholders to show NDPE progress, and those who are receptive to our engagement programmes.



1. Towards 100% traceability to plantation



Achieved 100% traceability to mill since 2015



Achieved 60% overall traceability to plantation

Ensuring a 100% traceable supply chain means that we can achieve full visibility of our suppliers, enabling us to assess and reduce environmental and social risks and improve sustainability systems. This includes tracing our supply to mill and plantation to prevent deforestation from entering our supply chain.

Since 2015, we have achieved 100% traceability to the mills of suppliers, meaning we know where all the CPO and palm kernel (PK) we source comes from.[1] We are now gearing our efforts towards 100% traceability to plantation[2] to determine the origin of all FFB by 2025.

1 Unless otherwise stated, all traceability data refers to volume of CPO.
2 Plantation refers to the place of production, be it a large, industrial plantation with concessions, a large farm without a mill, or a smallholder farm. See page 58 for clarification.

As at December 2019, we have achieved overall traceability to plantation of 60%, exceeding our 49% target for 2019. Specifically, for independent smallholders delivering to our own mills, we have 89% traceability, with individual farm maps, and are on track to achieve 100% by end 2020. For third-party suppliers, we have 58% traceability to plantation. We are aiming at full traceability of our third-party suppliers, and therefore overall traceability to plantation, by December 2025. All traceability information can be accessed via our supply chain map.

PRIORITISING TRACEABILITY TO SMALLHOLDER FARMS THROUGH A RISK-BASED APPROACH

Collecting traceability information about independent smallholders presents significant challenges. Most smallholders do not have land titles, or they have simple ones with inaccurate maps. To ensure a consistent quality of information, we carried out a field mapping exercise covering independent smallholders. Mapping each farm accurately requires time and effort. Mapping tens of thousands of farms requires considerable resources to collect, verify, and collate information.

The required efforts and resources are not commensurate with the benefits that we can gain from this process. Such an exercise only provides a snapshot of the state of traceability at a given moment. Furthermore, it is urgent that we identify FFB sources and create solutions to tackle the challenges ahead.

As we adapted to the situation, we decided to invest resources and time to develop a system and tools to conduct risk-based traceability in 2019. A broader, risk-based approach was co-developed with the Consortium of Resource Experts (CORE) to support and accelerate the traceability process. Through this approach, we prioritise verifying the farms of FFB producers whose lands overlap with higher-risk areas, such as those in the vicinity of protected zones. This is done by:

See our video for an overview of this approach:



We initially set a target of 30% traceability to our suppliers' independent smallholder supply base using the risk-based traceability approach by December 2019. We were aiming at 45% by 2020 and 100% by 2025. However, we did not achieve our 2019 target due to the limitations of the available data. This is because independent smallholders are not bound by contract, do not have permanent relationships and do not continuously sell to our supplier mills. Through the risk-based approach, we have resumed our efforts to meet our full traceability targets. We have done this despite the challenges and difficulties created by unforeseen circumstances, including the COVID-19 pandemic.



2. Proactively engaging and mentoring suppliers on NDPE

Group-level profiles developed for all suppliers as at September 2019



4 NDPE engagement workshops held, covering 44% of suppliers





80% of suppliers either have an NDPE policy or adopted the Musim Mas Sustainability Policy



24% of suppliers have completed the Self-Assessment Tool

100% of primary supplier groups covered by a customised roadmap towards meeting NDPE commitments



As at September 2019, we had conducted desktop research and developed profiles of all suppliers. To effectively communicate and help suppliers understand our NDPE commitments, we adopted a number of approaches with CORE to engage suppliers and track their progress towards making and achieving NDPE commitments.



Attending NDPE workshops

In 2019 we ran workshops in Indonesia covering key topics around the environment, governance, labour rights, community rights and social issues, traceability, certification, the Musim Mas Self-Assessment Tool, and the Musim Mas customised roadmap. As at December 2019, four workshops have been completed, representing 44% of suppliers, just short of our target of 60%.



Submitting NDPE commitments

When entering into a commercial relationship, every new supplier is required to confirm their commitment to the Musim Mas NDPE policy commitments, either by having an internal NDPE policy, or by adopting the Musim Mas Sustainability Policy. Existing suppliers are required to do the same. As at December 2019, 80% of our existing supplier mills (or 79% of supplier groups) have committed to the Sustainability Policy, exceeding our 2019 target of 60%.



Participating in the SAT

We expect suppliers to complete the Musim Mas Self-Assessment Tool (SAT), an exhaustive set of questions against our NDPE requirements. This evaluation is carried out annually and enables suppliers to self-declare information about their operations, and allows Musim Mas to identify potential risk areas at the mill level. As at December 2019, only 24% of our suppliers have completed their assessments. This number fell short of our 45% target for 2019 and made us realise that suppliers need support to understand and fill in their questionnaires.



Being covered by customised roadmaps

A customised timebound roadmap is developed for each supplier with clear KPIs and implementation milestones that will guide them into meeting NDPE commitments. These roadmaps will serve as the basis of the verification process and apply to all suppliers, including those that are RSPO certified or already in line with our commitments. Such customised roadmaps cover 100% of our primary supplier groups as at December 2019. We aim to cover 20% of our secondary suppliers by 2020, and 100% by 2025.

By 2025, 100% of our suppliers will have been engaged and mentored on NDPE commitments through all four approaches. In 2020, we are initiating group-level verifications of the systems and processes that suppliers have implemented to meet the commitments made in their roadmaps. This way we can keep tabs on our suppliers' progress towards meeting their obligations, until we can confidently define what it means to be NDPE-compliant.

3. Monitoring deforestation and peat development within the supply chain

90% of suppliers with concessions monitored for deforestation and peat development as at December 2019, meeting 2020 target one year ahead of time





Monitoring >6 million ha across Indonesia and Malaysia using a combination of methods as at December 2019



Joined new industry coalition to detect deforestation (RADD) in October 2019

Began trialling NDPE Implementation Reporting Framework (IRF) in 2019 to track progress on deforestation/peat commitments



Companies like Musim Mas have committed to eliminating deforestation from agricultural supply chains, in line with collective commitments such as the Consumer Goods Forum Zero Net Deforestation Commitment and the New York Declaration on Forests (NYDF). The palm oil industry has made tremendous progress towards this goal. However, we recognise this ambition will not be achieved by the end of 2020. While our operations and those of many of our suppliers are deforestation-free, challenges remain in our supply chain. To address this, Musim Mas has invested in multiple methods to monitor our supply chains to better detect and remove supply connected to deforestation.

OVERVIEW OF MONITORING APPROACHES

Our Geographic Information System (GIS) team uses a combination of methods to monitor our suppliers. These include internal monitoring of concession maps and information provided by these suppliers, relying on Earthqualizer's satellite monitoring platform (previously Aidenvironment's platform), and keeping track of supplier activity through public platforms such as GeoRSPO and the World Resources Institute's Global Forest Watch (GFW). We are also part of the RADD (Radar Alerts for Detecting Deforestation) system, a pilot multi-stakeholder platform with updated technical capabilities that allows us to detect tropical deforestation in less time.

Through these platforms, we are able to monitor over six million hectares across Indonesia and Malaysia. As at December 2019, we are actively monitoring 90% of our suppliers with concessions for deforestation and peat development using one or more of these methods. This number exceeds our 70% target for December 2019 and meets our 2020 goal. By 2025, we aim to cover the remaining 10%, including the supply bases of independent mills.

Musim Mas
Geographic Information System (GIS) team



Earthqualizer Platform
Industry reference Business to Business monitoring platform

Radar Alerts for Detecting Deforestation
Innovative new system developed by WRI, Wageningen University, Satelligence High Accuracy and collaboration ground checks

Public Sources
We collect, update and crosscheck information using public sources such as GeoRSPO, Greenpeace Kepo Hutan, Global Forest Watch

Internal Monitoring
Our suppliers share maps and information about their supply base to establish Traceability to Plantation (TTP)

WHAT HAPPENS WHEN THERE IS A DEFORESTATION AND/OR PEAT DEVELOPMENT CASE?



New deforestation detection and collaborative verification initiative: RADD

In October 2019, Musim Mas and nine other palm oil producers and buyers joined forces to support and fund the development of a new, publicly available radar-based forest monitoring system. Known as Radar Alerts for Detecting Deforestation (RADD), the platform will allow companies and other stakeholders to monitor and detect deforestation in near-real-time and with increased speed and accuracy through online tools such as GFW Pro. As a collaborative platform, RADD facilitates faster mobilisation of on-the-ground action (by any member company) to address detected deforestation, hence improving the monitoring of palm oil supply chains. The partner companies will work together over the next two years to collect crucial feedback to upgrade the system through continuous improvement.

Read more about RADD on our website.

Using the NDPE Implementation Reporting Framework (IRF) to report on NDPE progress

In 2019, we began participating in a multi-stakeholder platform aimed at developing an approach to monitoring and reporting progress on NDPE commitments. The Implementation Reporting Framework (IRF) is a tool developed collaboratively by the Palm Oil Collaboration Group (POCG) and facilitated by Proforest. It is designed to increase transparency on reporting progress, implementation activities and gaps in companies' fulfilment of their commitments. The IRF's methodology standardises how we evaluate each supplying mill using set criteria to measure progress related to deforestation, planting on peat, labour rights, and land and local community rights components. It also recognises that progress and solutions or activities required may differ for each component. Trials have begun with the 'D' and 'P' components of NDPE commitments.

SUPPORTING SUPPLIERS WITH FIRE MONITORING

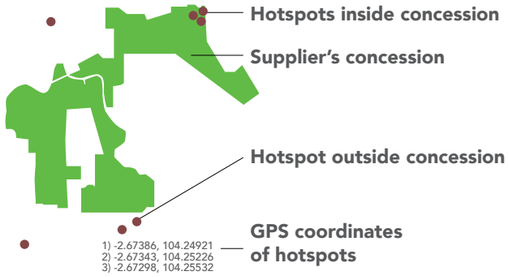
We use our monitoring platforms to assist suppliers in detecting hotspots and fires within their concessions. We monitor areas within a five-kilometre radius of mills for suppliers who operate mills without plantations. Suppliers are notified when any hotspots are detected and expect them to verify these and take appropriate action within five days. We do not exclude any suppliers from our supply chain as long as they can confirm that they did not intentionally cause the fire and followed legal processes. We also encourage suppliers to restore burnt areas to a condition that exceeds any legal requirements.

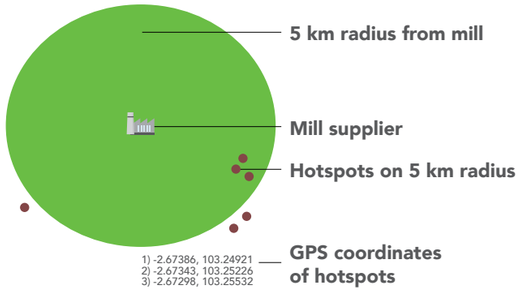
MONITORING HOTSPOTS ON SUPPLIER'S OPERATIONS:

Hotspots detected via satelitte in:
a. Supplier's concession
b. 5 km radius from supplier's mill (if suppliers do not own concession)

Musim Mas notify the suppliers whenever the hotspots are detected and expect the confirmation of fire

Corrective and preventive actions are required from supplier if regard to fire





Addressing 'No Exploitation' within the supply chain

Equally important to fulfilling NDPE commitments is ensuring that our suppliers uphold their commitments under the 'No Exploitation' umbrella of our Sustainability Policy. This includes ensuring suppliers pay their workers at least the legal minimum wage and employ measures to eliminate gender-related discrimination linked to employment and occupation. Human rights and labour rights components are part of the roadmaps developed with suppliers towards meeting NDPE commitments, and all suppliers have to self-report their measures via the Musim Mas Self-Assessment Tool. We also work to resolve social disputes via our grievance mechanism.

Musim Mas will be verifying the mechanisms and systems suppliers have in place to ensure that social commitments are upheld, starting with assessing what is known and tangible. Being able to monitor the social components of NDPE commitments is not always straightforward, such as ensuring FPIC has been followed, or certain labour rights have not been violated. While industry players work together to finds ways to effectively monitor the 'E' commitments, we continue to mentor our suppliers in understanding and upholding these fundamental human rights.

We are currently assessing suppliers who are certified against standards such as the RSPO on how they uphold human rights and respect labour rights. However, this leaves a gap for the bulk of our supply chain that is not certified. To address this, Musim Mas entered into an agreement with a non-profit labour specialist in 2020 to collaborate on developing the industry's first Indonesia-specific 'No Exploitation' assessment for non-certified suppliers.

The Palm Oil Collaboration Group will also be trialling 'No Exploitation' assessments in supply chains through the NDPE IRF, specifically on how to tackle labour grievances and to determine what due diligence on labour rights looks like.

When dealing with our suppliers to ensure that their suppliers and smallholders uphold social commitments, we always go straight to the source and work with farmers on the ground through our landscape initiatives and independent smallholder programmes. In 2019, Musim Mas and the International Finance Corporation worked together to deliver classes on 'Gender and Social Issues in Oil Palm' for independent smallholders. This programme covered the importance of addressing social issues that may affect local communities and impact their families. Other topics included how supporting women further improves livelihoods in oil palm communities, human and labour rights, the risks of children working at smallholder plots, health and safety and how to create better social outcomes.

4. Managing NDPE breaches



Closed 35 of 39 grievances raised from January to December 2019

Launched full version of Controlled Purchase Protocol in January 2020





Stopped purchasing from a total 14 companies as at December 2019 due to NDPE non-compliance; MM has resumed business relationship with 1 company in April 2019 due to their commitment to sustainability

Any breach to our NDPE commitments can be reported via regular one-on-one engagements, annual self-assessments through the SAT, and remote satellite monitoring for detected deforestation and peat development. It can also be brought to our attention through public media and advocacy campaigns.

GRIEVANCES

If there is a confirmed breach, our Grievance Mechanism is activated to resolve the issue swiftly and effectively. This procedure outlines the process for receiving, logging and verifying grievances. In instances where grievances are critical, suppliers are subject to a cessation of business and must meet defined milestones before the commercial relationship can resume.

In 2019, 39 grievances were filed via the mechanism, 90% of which have been closed. We are working with the suppliers and stakeholders to resolve the remaining seven cases. Of the 39 cases, one was raised against a Musim Mas subsidiary in June 2019 through the RSPO complaints system. Musim Mas continues to actively seek its resolution through the RSPO complaints system. Details of the case can be found here.

GRIEVANCES AS AT DECEMBER 2019

Grievances raised by category	Raised	Active	Closed
Deforestation	32	1	31
Sourcing of FFB from protected areas	3	0	3
Labour rights	2	2	0
Deforestation/social conflict cases	1	0	1
Land disputes	1	1	0
Total	**39**	**4**	**35**

Our website provides an overview of the grievance mechanism used to resolve disputes and compliance grievances against Musim Mas Group and third-party suppliers (at the group level). The link also provides access to the Grievance List.

ACTIVATING THE CONTROLLED PURCHASE PROTOCOL (CPP)

Updated Controlled Purchase Protocol

The CPP was established in 2015 and an updated version was launched in January 2020. The CPP formalises our approach to managing violations related to cases of deforestation, development on peat, and all forms of exploitation for all grievances filed after December 2019. The protocol links the management of grievances with how we conduct business with our suppliers. Through this approach, we assist suppliers in meeting their commitments and provide incentives for those who show an intent to become sustainable producers. The CPP follows three principles:

1. Willingness to engage: the supplier shows an intent to commit to the protocol and a desire to better understand and address the root cause(s) of the grievance.
2. Positivity to act: the supplier allocates adequate resources towards addressing the grievance and can demonstrate the highest commitment to its management.
3. Demonstrating progress: the supplier provides progress reports against the agreed-upon milestones and criteria.

See our updated Controlled Purchase Protocol for more information on the updated CPP and the grievance procedure.

All verified grievances go through our CPP, which is designed to link grievance resolution milestones to target-driven purchases. This protocol supports our commitment to building long-lasting, transformational relationships with suppliers through active and continuous engagement. Excluding or suspending suppliers who can still be convinced to improve and address their issues only increases supply to the 'leakage market'.

The re-entry requirements of this protocol incorporate the conclusions of extensive discussions with NGOs and industry peers (gathered as the 'Sundaland' group, an informal multi-stakeholder organisation consisting of major palm oil players, technical consultants and civil society groups) on how to address past harm and allow a resumption of business with excluded suppliers.

As at December 2019, Musim Mas has stopped purchasing from 14 companies due to breaches with our NDPE commitments.

On the other hand, we resumed sourcing from an excluded supplier in April 2019. PT. Mopoli Raya confirmed their sustainability commitments by publishing relevant policies, signing a declaration to conserve 1,382 hectares of HCV area, and conducting and publishing an HCSA assessment. As a consequence of these actions, we reinstated them as a supplier. More on their progress can be found on our website.

Updates to our engagement in Singkil-Bengkung

Musim Mas receives supply from ten suppliers operating in the Singkil-Bengkung area of Aceh, and we recognise the negative impacts and risks that may arise given their proximity to the Rawa Singkil Wildlife Reserve and the Leuser ecosystem. Over the years, the Rainforest Action Network (RAN) has reported extensively on the Leuser Ecosystem and has recently focused specifically on the Singkil-Bengkung area. RAN published a report covering illegal activity in peat forests being developed to produce fruit in the Rawa Singkil Wildlife Reserve. This was followed up by several articles that alleged global brands were still sourcing palm oil acquired through deforestation of rainforests, and that unresolved conflicts between local communities and palm oil plantation operators persisted in the Singkil-Bengkung region. The report lists Musim Mas as one of the refiners sourcing from mills in this area.

Musim Mas shares RAN's concerns for the Leuser ecosystem and the Rawa Singkil Reserve. In recent years, we have engaged with our suppliers to increase their awareness of the issues, and to exclude irresponsible actors from our supply chain. Exclusion is a last resort, as it prevents further engagement to improve practices and remedy past wrongs. The need for higher traceability in risk areas has been a central part of our discussions and we have proposed solutions to address traceability and deforestation challenges at large.

In December 2019, we held a Focus Group Discussion in Subulussalam for suppliers in the Rawa Singkil area focusing on traceability and NDPE compliance. The workshop was co-hosted by Golden Agri Resources (GAR), and was also attended by the regional Natural Resources Conservation Agency (BKSDA Aceh), Aidenvironment, the United States Agency for International Development (USAID), KFW Germany, Earthworm, community representatives, FFB dealers and local traders.

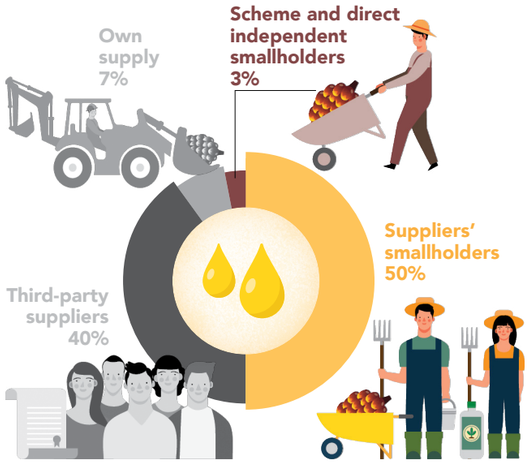
We are aiming at full traceability by the end of 2020 for the mills supplying to us. A Smallholder Hub is planned for 2020 in this region to improve farming practices, extension work, and awareness of sustainability issues. Innovative satellite imagery analysis will support extension work and monitoring of the deforestation risk. Although the COVID-19 pandemic has delayed its deployment, engagement is crucial to the transformation of this landscape and will remain a priority for Musim Mas.

Progress on this case can be found via our grievance mechanism here. Read more on our response and approach to the Singkil landscape on our website.



Smallholder engagement

Smallholders own up to 40% of the total oil palm area in Indonesia[3] and are integral to our business strategy and our move towards sustainable production at scale. Central to our approach is assisting smallholders in improving their livelihoods, providing them with knowledge and resources in improving productivity, and helping raise their earning capacity while reducing the risk of negative environmental and social impacts. For some, this can lead to sustainability certification.



SCHEME SMALLHOLDERS



100% of scheme smallholders covered by a Musim Mas programme under KKPA or VDP[4]

1,148 farmers newly enrolled under KKPA in 2019





1 new village in Sumatra covered under an additional Village Development Programme, totalling 16 villages under 17 programmes



3,494 ha scheme smallholder area RSPO certified (54%)

PT Agrowiratama first smallholder scheme in Indonesia to be RSPO certified in 2010



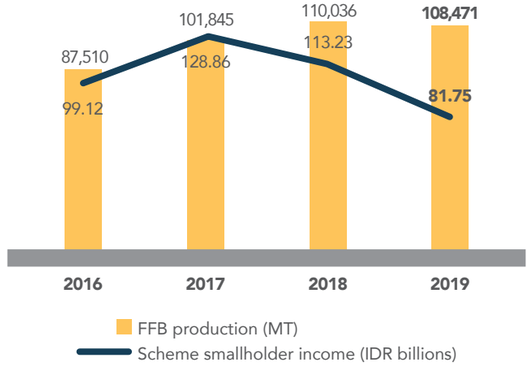
The scheme smallholders we support fall either under our *Kredit Koperasi Primer Anggota* (KKPA) cooperative or our Village Development Programme (VDP) (also known as *Kas Desa*). The KKPA and the VDP operate nine and 17 programmes respectively, covering all of our scheme smallholders.

The KKPA was initiated voluntarily in the 1990s, well before the 2007 establishment of Indonesian regulations that require companies to facilitate the creation of plasma smallholder schemes for the benefit of surrounding communities. Under the KKPA, we have been supporting farmers who are part of our plasma smallholder scheme at PT. Agrowiratama and PT. Musim Mas since 1996. Family units owning two hectares of land or less are given access to financial support and resources such as bank loan guarantees, agricultural training, and seeds and fertilisers. The KKPA began with 762 smallholders and now comprises 3,751 smallholders who manage a total of 6,327 hectares of land under the scheme. In 2019 alone, 1,148 farmers were newly enrolled in our programmes. Throughout the year, scheme smallholders benefitted from 98 training sessions conducted by Musim Mas. In 2019, we commissioned an impact assessment and report to better evaluate the benefits brought to farmers and communities by the KKPA cooperative. This is to enable us to develop tools to design better programmes with measurable outcomes going forward. The assessment will be available by December 2020.

While the KKPA is aimed at individual smallholders, the Musim Mas Village Development Programme targets communities and villages. The VDP promotes economic independence and improving community welfare by supporting the management of oil palm plantations on land belonging to village communities. Beginning with four villages and 12 hectares in 2000, the VDP now covers 16 villages across Sumatra and Kalimantan, spanning a total of 127 hectares.

In 2019, our scheme smallholders under both the KKPA and VDP produced a total of 108,471 metric tonnes of FFB. Their total income from its sale was IDR 81.75 billion, which is 28% less than in 2018. This can be attributed to slightly lower FFB production and depressed CPO prices.

SCHEME SMALLHOLDER PRODUCTION AND INCOME



As at December 2019, 54% of the total land belonging to scheme smallholders is RSPO certified[5] – 3,392 hectares under KKPA and 102 hectares under the VDP, totalling 3,494 hectares. Maps of our scheme smallholders are submitted to the RSPO but are not available publicly due to Indonesian government regulations. Our concession maps can be viewed on GeoRSPO.

INDEPENDENT SMALLHOLDERS

1,247 direct and indirect independent smallholders engaged under ESP



27,927 smallholders engaged under the Musim Mas-IFC smallholder programme; 86% of those who benefit may be outside our supply base



705 smallholders under the Musim Mas-IFC smallholder programme became RSPO certified in November 2019



Independent smallholders in Rantau Prapat successfully received funding to replant oil palm under the Musim Mas-IFC smallholder programme



1 smallholder pilot in the Lalan district in Musi Banyuasin, South Sumatra, a first step towards establishing a Smallholder Hub



Conducted classes on 'Gender and Social Issues in Oil Palm' for independent smallholders, with almost 10,000 women participants as at Dec 2019



Our independent smallholder programmes began with farmers supplying directly to our mills. They account for less than 3% of our total supply. However, just over 40% of our supply comes from direct and indirect independent smallholders who sell to our mills and our suppliers. Realising this, we scaled up our efforts geographically to address the barriers all smallholders face in producing sustainably and improving their livelihoods. Based on our experience, we have developed a strategy to boost engagement, thus increasing the magnitude and reach of our programmes:

Musim Mas-IFC smallholder programme Approach 1	Extension Services Programme Approach 2	Smallholder Hub Approach 3
		
Our operations Musim Mas-owned mills	**Third-party suppliers' mills** Musim Mas third-party supplying mills	**Scaing to district level** District government/ Bupati's office

While the Musim Mas-IFC (International Finance Corporation) smallholder programme is carried out at Musim Mas mills, the ESP targets both Musim Mas mills and our suppliers' mills.

To truly transform industry practice, we believe it is paramount to provide access to sustainable practices to anyone and everyone within the landscape. This is why our programmes cover independent smallholders whose FFB may not be part of our supply base. In fact, only 14% of the suppliers who are part of the Musim Mas-IFC smallholder programme have been confirmed to be part of our supply base. The remaining 86% are independent smallholders who benefit from the programmes but who may not necessarily be part of our supply base. The ESP is similarly open to suppliers outside our supply base.

3 World Resources Institute *Intensification by Smallholder Farmers Is Key To Achieving Indonesia's Palm Oil Targets* (2018)
Source: https://www.wri.org/blog/2018/04/intensification-smallholder-farmers-key-achieving-indonesia-s-palm-oil-targets [accessed 6 August 2020]

4 The KKPA programmes cover all individual scheme smallholders belonging to the cooperative, while the VDP programmes cover all villages that take part.

5 Previously, this was reported as 76%. In 2019, we started calculating this percentage by dividing the certified scheme smallholder area by the total area allocated to scheme smallholders. In the past, we divided it by the total scheme smallholder planted area. This new calculation complies with RSPO Annual Communications of Progress (ACOP) reporting guidelines.

INDEPENDENT SMALLHOLDERS BENEFITTING FROM MUSIM MAS SMALLHOLDER PROGRAMMES

Musim Mas programme	Mills covered by programme (no.)	Independent smallholders engaged (no.)	Independent smallholders confirmed to be part of Musim Mas supply base (%)	Other independent smallholders benefitting from programme (%)
Musim Mas-IFC smallholder programme	4	27,927	14%	86%
Extension Services Programme	5	1,247	100%	0%

THE MUSIM MAS-IFC SMALLHOLDER PROGRAMME

In 2015, Musim Mas and the International Finance Corporation (IFC) – a member of the World Bank Group – launched the Indonesian Palm Oil Development for Smallholders programme. It supports independent smallholders in meeting the same efficient farming standards as industrial plantations and empowers them to produce sustainably. The programme focused on four of our mills that sources heavily from independent smallholders.

Between 2015 and the end of 2019, a total of 27,927 smallholders were engaged and trained under this programme, exceeding our 2019 target to engage 20,000 smallholders. This makes the Musim Mas-IFC smallholder programme one of the most extensive programmes for independent smallholders across Indonesia. It also means we gave these farmers guidance on good agricultural practices (GAP) and environmentally responsible practices, legal requirements, financial support, and access to global markets.

In 2017, IFC carried out a financial valuation assessment of the benefits arising from our scheme smallholder programmes. We will be building off this study to expand our support for independent smallholders.

Financial access provided to farmers in Rantau Prapat

As part of the Musim Mas-IFC smallholder programme, independent smallholders are encouraged to form farmer group associations. This accelerates the process of distributing government replanting subsidies and provides other benefits to smallholders. IFC and Musim Mas have successfully helped form a farmer association, *Maju Lancar Mandiri Labuhanbatu* (*MLML*), at our PT. Siringo-Ringo (SRR) subsidiary in Rantau Prapat, North Sumatra. In May 2019, the independent smallholders supplying to MLML received funds from the Indonesian government to replant their oil palm. BNI Bank is our commercial partner for this programme, and we hope to bring on board more financial partners to ensure its continuity.

Read more about this initiative on our website.



Independent smallholders receive RSPO certification under Musim Mas-IFC programme



In November 2019, a group of 705 smallholders under our programme successfully received RSPO certification during the launch of the RSPO Smallholder Academy at RT17 in Bangkok. These smallholders are located around two Musim Mas mills in North Sumatra and Riau. As part of the process towards certification, farmers received training on financial literacy, support with land titles, and opportunities to explore alternative livelihoods to help diversify their sources of income. Being RSPO certified is a significant milestone for these smallholders, who are now able to show that they are producing oil palm sustainably while increasing their market access and income. RSPO certification also ensures that these smallholders' production practices are in line with our NDPE commitments.

Read more about the RSPO-certified smallholders on our website.

A strong focus on gender equality

While women have always played an important role in oil palm plantations, gender inequalities persist. Many women own and manage land but have long been seen primarily as caregivers, excluded from training programmes, and not been given equal market and financial access as men in the industry. Recognising these inequalities, the Musim Mas-IFC smallholder programme incorporates a strong gender component that provides women farmers, and smallholders' wives who help on the farm, with training on a variety of topics. These include strengthening their group's organisational capacity, good agricultural practices to increase productivity, occupational health and safety, environmental management, financial management, and access to markets. As at December 2019, almost 10,000 women had participated.

Read more about how the programme focuses on strengthening the role of women.



EXTENSION SERVICES PROGRAMME (ESP)

Building on the Musim Mas-IFC smallholder programme, the Extension Services Programme (ESP) is geared towards scaling up our outreach and impact on independent smallholders who supply our third-party supplier mills. Increasingly, this means that we are also moving on to smallholders who may be present in landscapes considered to be 'at-risk' given their proximity to forested landscapes, where private sector intervention is needed the most.

Launched in 2017, the ESP combines hands-on training with informal theory sessions. Field assistants follow up with one-on-one sessions that tailor the programme to individual smallholders' needs, depending on which stage they are at of the farming process. As at December 2019, a total of 1,247 independent smallholders who are part of our third-party supply base in Aceh, Riau, Central Kalimantan and South Sumatra have been engaged under this programme.

What began as a pilot in Musi Banyuasin in South Sumatra, in partnership with CORE, has expanded into a full programme in Aceh Tamiang, with staff and personnel on the ground assisting over 100 farmers. In 2020, we are extending the ESP to our operations in the Siak and Pelalawan landscapes.

Piloting the ESP in South Sumatra





Musi Banyuasin is the largest palm oil producer in the South Sumatra province. It is home to one of the highest concentrations of supplier mills in the Musim Mas supply base, with over 17 palm oil mills and 442,000 hectares of palm plantations that produce 1.8 million metric tonnes of CPO and 20,000 metric tonnes of palm kernel oil annually. Musi Banyuasin is also home to several vital ecosystems that remain in their natural state, including two major nature reserves, significant state forest lands, a 100,000-hectare restoration concession, and extensive peatlands.

In 2017, we piloted the ESP in Musi Banyuasin at one of our third-party supplier mills, PT. Bastian Olah Sawit (PT. BOS). PT. BOS was selected for its willingness to trial the ESP and ability to outreach to a high number of smallholders who could benefit from the programme. Musim Mas and PT. BOS have an ongoing working relationship and were already working together on traceability and other sustainability commitments at the time.

After several field visits and surveys, a kick-off meeting was held with PT. BOS to assist the ESP team in engaging with the smallholders in their supply chain, a critical step in building a relationship with both PT. BOS and its smallholders. Two Musim Mas field staff were introduced and integrated into the local community. Relationships were also gradually developed with smallholders through village extension officers and the local level government.

As at December 2019, 452 independent smallholders have taken part in training programmes delivered by Musim Mas in Musi Banyuasin. These smallholders were actively involved in training focused on five key topics:

1. Harvesting
2. Upkeep
3. Fertilising
4. Pest and disease management
5. Financial literacy.

The delivery of this training is flexible and revolves around the busy schedules of the smallholders and the training team. The five topics can be spread across 10 to 14 two-hour sessions that combine theory and practical skills. After these sessions, follow up field visits are scheduled so independent smallholders can ask questions and inspect their own blocks with the trainers. These field visits are crucial to building relationships and implementing the skills learnt.

We learned several lessons from our pilot. Firstly, forming relationships with smallholders and agents is critical to building trust and establishing and operationalising the ESP. This is especially true because the ESP does not offer tangible contributions or monetary aid that allows beneficiaries to walk away with one-time handouts. Instead, the programme relies on two-way engagement and relationships to teach sustainable agronomic skills and knowledge. Although this approach may be time-consuming, it is imperative for any successful programme with long-term positive results. Secondly, we learned that training must be practical and demonstrate tangible benefits if smallholders are to truly understand why they should change their current practices. And lastly, we learned that key to the ESP's success is government support and aligning our plans with district and local government plans. Otherwise, the programme would lack the buy-in required to have a real impact.

Today, we have two suppliers engaged under the ESP in Aceh and South Sumatra. The commitments under the ESP require them to become real partners on the ground and to empower local communities rather than providing one-off training programmes. This is why our next steps are not only to expand the programme with other third-party mills but to also develop the capacity of local level village extension officers through Smallholder Hubs, making them an essential resource to smallholders in the surrounding area.

Musim Mas is very active in supplier engagement, both through the auspices of CORE and independently. The company is making positive strides as one of the very few palm oil producers with a detailed roadmap and progress with short- and long-term commitments. It is also good to see that, when faced with challenges on traceability to plantation, Musim Mas is proactive in enacting solutions by placing their people on the ground to implement training programmes, and by finding new opportunities to apply these programmes to other smallholders.

The motivation of most companies having smallholder programmes is to improve capacity in their supply chain, which can be a deterrent for most smallholders. However, the Extension Services Programme is not limited to the smallholder portion of Musim Mas' supply base but rather is dynamic in allowing FFB supply farmers the freedom to choose where they sell. It is a positive step in the right direction towards the landscape-wide adoption of sustainable practices.

Musim Mas is a firm believer in working with others to accelerate their Extension Services Programme outreach in order to create positive environmental and social impacts. In 2020, the aim is to expand the ESP to Siak and Pelalawan, providing an opportunity to involve peer companies and other stakeholders. This approach will help overcome limitations in outreaching to the entire landscape, which would require over 1,000 trainers. The pilot in South Sumatra will serve as an example to help peer companies understand how to scale up the programme.

Sahat Aritonang, Deputy Director of Technical Operations, Daemeter Consulting
Musim Mas has worked with Daemeter under the umbrella of the Consortium of Resource Experts (CORE) for over four years on implementing programmes around responsible sourcing, traceability, and the Musim Mas ESP for independent smallholders. Sahat's role covers designing, piloting, and implementing the ESP approach, as well as traceability to plantation work. CORE's involvement in the ESP is now more in an advisory and technical capacity as Musim Mas independently scales up the programme.

SMALLHOLDER HUBS

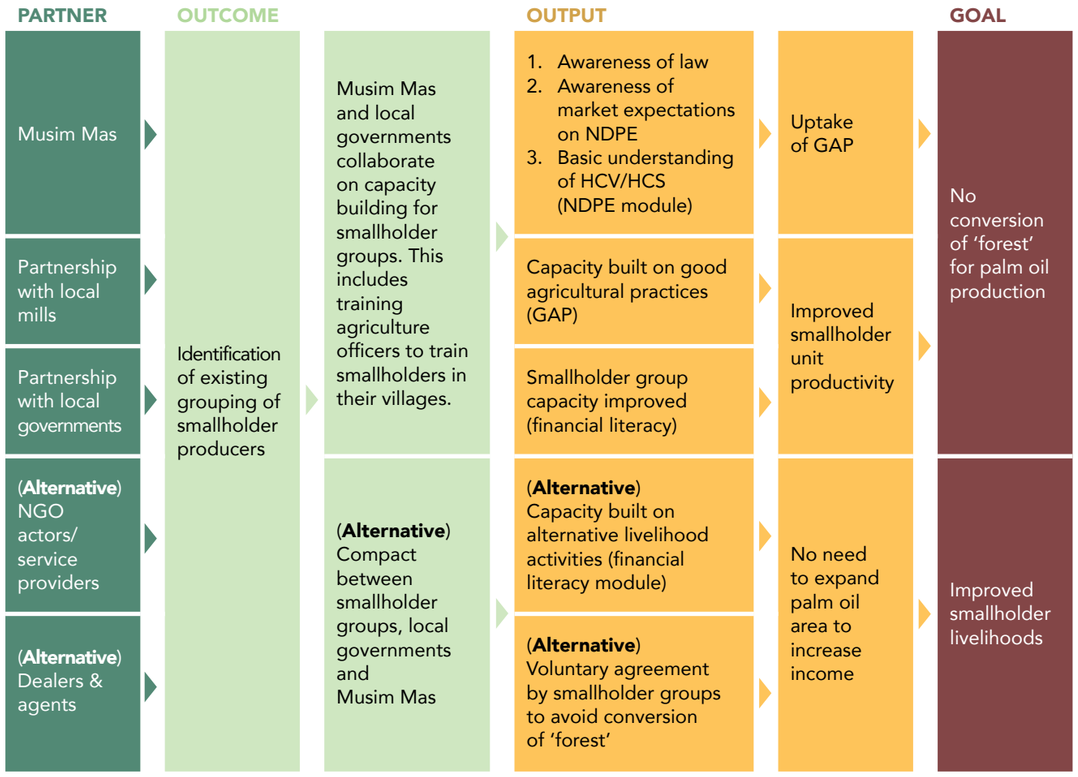
As part of our strategy to scale up our independent smallholder outreach, we are working to establish Smallholder Hubs in 2020. These will serve as a common platform that will allow palm oil companies to pool resources, share expertise, and support third-party extension services such as the ESP. These resources will be used to train independent smallholders at the district level, regardless of whom they sell to. To make these Smallholder Hubs a reality, we are working with stakeholders who share common goals, including provincial governments, government departments, buyers, NGOs and civil society organisations, other growers, mills, consultants and smallholders.

One crucial objective of this Smallholder Hub Approach is to embed skills within a community. By working with 'agriculture officers', we can assist capacity building at the local government level and establish a sustainable extension service. Key deliverables include:

1. Training village extension officers who can then train independent smallholders in their region
2. Providing additional agronomic training to agricultural officers
3. Providing ongoing support and conducting field visits for agricultural officers as they train independent smallholders.

The first step is to develop a relationship with the local or district government, preferably at the *Bupati* level, which will then open doors with local *Camats* and *Kepala Desas*. Understanding local governments' plans and objectives will ensure our Smallholder Hub approach can be synced with their programmes.

THEORY OF CHANGE



A STEP TOWARDS SMALLHOLDER HUBS: PILOT PROJECT IN MUSI BANYUASIN

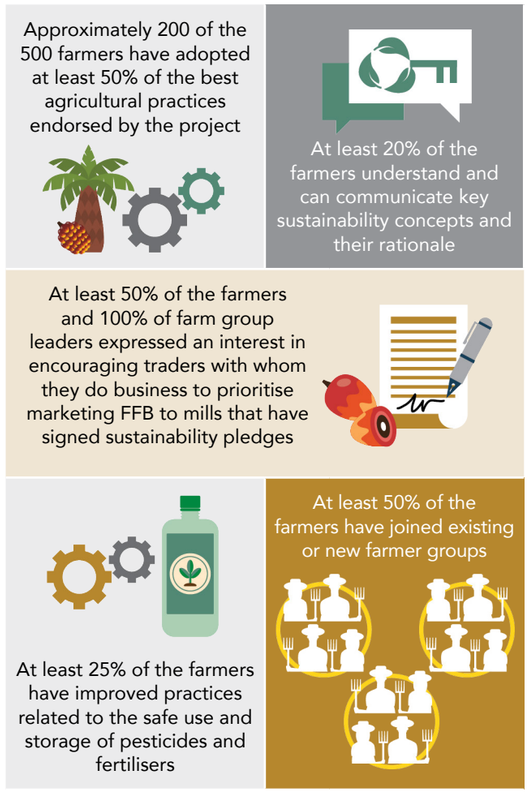
From August 2018 to October 2019, Musim Mas collaborated with the Rainforest Alliance to pilot a project directly with four villages in the Lalan district in Musi Banyuasin, South Sumatra. The programme was designed to increase smallholder farmers' knowledge and awareness of the importance of sustainable practices in their oil palm plantation businesses in four villages.

Capacity-building activities were carried out through a series of discussions and trainings at the farm level using the five selected training modules: on-farm management and recording, productivity, pest and plant disease, health and safety, and conservation. In addition, independent oil palm farmers were given instruction on improving their institutions and forming new farmer groups. More than 500 farmers belonging to 20 farmer groups, including three women's farmer groups, participated in multiple training sessions.

Monthly trainings were also conducted at 20 demonstration plots on the application of sustainable agricultural standards to increase production while promoting better environmental conditions. Seven farmers were identified as project 'champions' and assigned to train other farmers – or 'Train the Trainers' – on these practices using concrete examples.

The Rainforest Alliance also assisted 97 farmers with an early replanting programme to increase productivity on approximately 63.5 hectares and helped them complete all land legality requirements.

Project outcomes:



Moving forward, we will look into building capacity in these four villages at a more advanced level, for example, to comply with certain certification standards and to encourage farmers to become certified. It is also worth considering replicating this programme in other areas within the Musi Banyuasin Regency because it is a sustainable district as a member of the *Lingkar Temu Kabupaten Lestari* (*LTKL*) or Sustainable District Platform.

We are currently seeking support from other actors to trial the Smallholder Hub approach in five areas: Subulussalam, Southern Aceh, Aceh Singkil, and Musi Banyuasin.

Landscape collaborations

To drive real change and assist in the transformation of the entire industry, companies like Musim Mas must work with other stakeholders to improve the livelihood of smallholders and local communities. We find that government support and participation are crucial to scaling up any project. In particular, local governments have jurisdiction over land use planning and zoning and are instrumental to the process of land-rights legalisation, a critical issue for smallholders. They are also mediators for private-sector and community discussions about issues such as environmental conservation and shared ecosystem services. Musim Mas also works closely with partners like CORE to team up with peer companies in pre-competitive collaboration to affect real change on the ground, and Earthqualizer, for progressive, complex projects on social forestry.

WORKING WITH HIGH-RISK MILLS IN PRIORITY AREAS

Musim Mas has identified four priority landscapes where we regularly engage with mills and smallholders through landscape-specific programmes, such as the Extension Services Programme. Specifically, we engage with mills from our supply base that operate within areas that are deemed high priority, e.g. they are located in areas adjacent to protected nature reserves or in High Conservation Value (HCV) areas.

Though we prioritise engagement with high-risk mills, we make it a point to work with all the mills in our supply base. This displays our commitment to responsible sourcing and ensures that no supplier is left behind in our quest to transform the industry.

Through the annual Self-Assessment Tool and other traceability assessments, we can assess mills' environmental and social risks. With customised roadmaps, we can then assist them in complying with our commitments, if they are not already. Our satellite monitoring systems further aid this process by surveying for deforestation and peat development occurrences.

PRIORITY LANDSCAPE: SIAK AND PELALAWAN, RIAU

Why this is a priority landscape?	**Siak**: Long-established palm oil production area, with significant numbers of independent smallholder producers. The district is home to vulnerable communities and ecosystems that have been adversely affected by agricultural expansion in the past. The district is also home to protected areas such as the Giam Siak Kecil Biosphere Reserve and Zamrud National Park, which would benefit from enhanced, long term protection. **Pelalawan**: Makes up 10% of the oil palm plantation land in Riau, with more than one-third of the land area owned by smallholders who need counselling and assistance with various agricultural challenges.
What is being done?	Village engagement programme to support peat and forest conservation. Conserving plots of land and preventing deforestation by training independent smallholders and supporting suppliers on traceability and NDPE commitments.
	Focusing on fire prevention as this landscape is prone to fires in its peatland.
What we hope to achieve?	Aligning our vision with regional governments for sustainable production at the landscape level, namely the Siak Green District Initiative (Siak), Palm District Action Plan and the Good Growth Partnership under UNDP (Pelalawan).
Who we are working with?	District government heads, plantation and planning departments Consultants: Daemeter and Proforest Downstream actors: Cargill, Unilever, Neste, PepsiCo, Danone, L'Oréal Peers: Sinar Mas Agribusiness and Food (GAR) Local NGOs: Sedagho Siak
More information	Collaboration to drive sustainable palm oil production in Siak District Launch of extension and supporting programmes in Pelalawan district

PRIORITY LANDSCAPE: ACEH-LEUSER ECOSYSTEM, ACEH TAMIANG, SUMATRA

Why this is a priority landscape?	Home to five million Indonesians from over ten ethnic groups, and the Leuser Ecosystem, an ecological hotspot known for its biological diversity.
What is being done?	Closely engaging our third-party suppliers, independent smallholders, and stakeholders in three priority areas – Tamiang, Timur, and Singkil – to address risks of encroachment into the Leuser Ecosystem, specifically in Aceh Tamiang and the South Aceh region.
	Establishing a Smallholder Hub where we can build the capacity of local agricultural officers to enable them to train independent smallholders in their area.
	Assisting villages in developing land use plans via a participatory planning approach and assisting the planning and drafting of village policy in Aceh Singkil and the South Aceh district. Also helping independent smallholders in the area with land legalisation and registration. Work will begin in Aceh Singkil, where we will be employing a staff member, before being expanded to other areas.
	Integrating a satellite monitoring system to track deforestation for our landscape projects.
What we hope to achieve?	Creating a verified sourcing area for palm oil and other commodities to ensure its holistic development.
Who we are working with?	IDH (the Sustainable Trade Initiative) Government of Aceh Downstream actors: Unilever, PepsiCo, General Mills Local civil society organisations Earthqualizer, Earthworm Suppliers, including those outside our supply chain
More information	Aceh Landscape Progress Update 2019/2020

PRIORITY LANDSCAPE: MUSI BANYUASIN, SOUTH SUMATRA

Why this is a priority landscape?	One of the highest concentrations of supplier mills in our supply base and home to protected areas covering 75,000 hectares that provide protection for important tiger habitats, including the Sembilang-Dangku landscape. The area faces major environmental challenges due to agricultural production, such as encroachment on protected forest areas, plantation on peatland, low levels of legal land ownership and low farmer capacity and productivity.
What is being done?	Supporting IDH landscape programme with guidance from the district government's Green Growth Plan.
	Implementing ESP for the independent smallholders in the supply chain at one of our suppliers' mills, PT. BOS.
	Plans to develop a Smallholder Hub via the Centre of Excellence, a multi-stakeholder unit operated by the LTKL and IDH aimed at district-level sustainable development, and train agriculture officers stationed there.
What we hope to achieve?	Development of a Smallholder Hub
Who we are working with?	Rainforest Alliance Sustainable District Platform (LTKL) IDH
More information	Musim Mas website

PRIORITY LANDSCAPE: SAMBAS, WEST KALIMANTAN

Why this is a priority landscape?	Sambas landscape covers an area of around 6,717 km^2 which consists of production forest, protected forest, conservation forest, peatland and village areas.
What is being done?	Since its initiation in 2018, the social forestry programme at Sambas landscape has engaged 80 households in four villages: Sebubus, Kaliau, Sanatab, and Santaban.
	Assisting villages in developing land use plans via a participatory planning approach and helping with the planning and drafting of village policy in Sambas, West Kalimantan. Also helping independent smallholders in the area with land legalisation and registration.
	In August 2019, a multi-stakeholder forum was held at the Sambas district regional development planning agency office resulting in a set of recommendations, e.g. the need for developing multi-stakeholder collaboration and synergy for area development and forest area management, as well as for village areas, particularly the ones located in Sambas Landscape.
What we hope to achieve?	Promoting multi-stakeholder collaboration in Sambas landscape, as well as improving villages' and communities' economic livelihood. This includes supporting local communities on social forestry knowledge and capacity by providing access to local forest areas and land legalisation, establishing sustainable use and forest management practices, and establishing small business models to improve land use.
Who we are working with?	Sambas District Government Earthqualizer
More information	Sambas social forestry programme

Stakeholder Table

Stakeholder group	Objectives	Method of engagement	Frequency
Academic/ research partnerships	Support academic exploration and research studies to improve knowledge and understanding, especially related to conservation and environmental protection	Collaborating with academic institutions by funding sustainability research and projects	Annually
		Providing input and industry insights	As and when required
Certification bodies	Improve sustainability standards as members Compliance with sustainability standards	Working groups One-on-one meetings	As and when required
		RSPO Roundtable meetings	Biannually
		RSPO ACOP ISCC reports	Annually
Communities	Understand and address community concerns Improve livelihoods and standard of living of local communities Engage communities in dialogue to support causes such as conservation, fire and haze prevention	Participatory mapping and integration into management and monitoring land-use plans	Annually
		Grievance procedure Dialogue and consultation with community groups and representatives Community programmes	As and when required Bi-annually (for village-wide fire programmes)
		Anwar Karim Foundation	Annually
Customers and partners	Address industry-related sustainability concerns and issues	Joint partnerships and collaborations on key issues, e.g. monitoring deforestation in supply chain, smallholder projects	As and when required
	Communicate policies and measures taken	One-on-one communications Field visits	As and when required
		Website and social media	Frequently
		Sustainability reports	Annually
Employees	Uphold human and labour rights	Participating in external initiatives to address systemic industry issues	Annually
	Maintain awareness on company policies and practices	Musim Mas training programmes	Annually
	Improve health and safety, workplace conditions, and benefits	Collaborating with experts to assess and improve workplace conditions	As and when required
		Appraisals/one-on-one meetings	Annually
		Community meetings	At least once a year
		Trade union meetings	Monthly
Financial institutions and investors	Manage environmental and social risks through sustainable financing by communicating policies and actions and responding to queries	One-to-one communications Field visits	As and when required
		Website and social media	Frequently
		Sustainability reports	Annually
Government and regulatory bodies	Build strong relationships with government and regulatory bodies and agencies to facilitate projects focused on building smallholder capacity and improving their livelihoods	Landscape programme meetings One-on-one meetings	Frequently
NGOs	Ensure palm oil brings benefits to local communities and ecosystems	Working with NGOs in conservation projects and partnerships	Annually
Smallholders	Empower smallholders to improve their sustainability practices, livelihoods, and access to the growing sustainable palm oil market	Launching programmes and other initiatives for our scheme smallholders and independent smallholders, including those supplying to Musim Mas and those outside our supply base in priority landscapes	Frequently
Suppliers	Ensure a fully traceable supply chain Engage on NDPE commitments and practices	Workshops on NDPE commitments	Where required
		Musim Mas Self-Assessment Tool	Annually
		Customised roadmaps	As and when required

Base data

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
ECONOMIC						
Income statement						
Revenue	USD (billion)	7.0	7.5	7.3	5.5	5.0
LAND AND PRODUCTION						
Total titled land area	**ha**	**199,154**	**198,837**	**194,204**	**193,729**	**193,497**
Oil palm plantations						
Total planted area	**ha**	**122,828**	**121,968**	**121,494**	**119,994**	**116,280**
Mature	ha	110,749	108,035	101,621	97,348	95,118
Immature	ha	12,078	13,933	19,873	22,646	21,162
Nucleus planted area	**ha**	**117,032**	**117,344**	**116,875**	**115,405**	**111,971**
Mature	ha	105,429	103,780	97,526	93,493	91,866
Immature	ha	11,603	13,564	19,349	21,911	20,105
Scheme smallholder planted area	**ha**	**5,796**	**4,624**	**4,620**	**4,589**	**4,308**
Mature	ha	5,321	4,255	4,095	3,855	3,252
Immature	ha	475	369	524	734	1,056
Production and productivity						
Total FFB produced	**MT**	**3,503,074**	**3,815,493**	**3,341,946**	**2,781,095**	**3,073,391**
FFB production – own plantations	MT	2,475,554	2,703,918	2,272,841	1,944,448	2,138,567
FFB production – scheme smallholders	MT	108,471	110,036	101,845	87,510	92,162
FFB volume purchased from third parties	MT	919,048	1,001,538	967,260	749,137	842,662
Crude palm oil	MT	774,892	860,295	754,568	629,794	703,397
Palm kernel	MT	195,859	220,853	191,371	158,484	177,856
FFB yield – own plantations	MT FFB/ha	22.79	25.85	22.74	20.54	23.08
FFB yield – scheme smallholders	MT FFB/ha	22.92	26.98	26.98	25.44	28.00
Extraction rate – crude palm oil	%	22.54	22.60	22.58	22.65	22.89
Extraction rate – palm kernel	%	5.70	5.79	5.73	5.70	5.79

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
Conservation area						
Total conservation area	**ha**	**24,220**	**20,958**	**21,028**	**19,228**	**19,228**
Total HCV area	ha	19,716	19,138	19,228	19,228	19,228
Total HCS area	ha	1,790	1,820	1,800		
Others	ha	2,714				
Managed peat						
Total managed peat area planted	ha	35,274	35,275	35,287	35,293	35,293
Total managed peat area conserved	ha	4,051	4,049	3,536	3,536	3,536
Certification						
RSPO certified – own plantation area	ha	136,588	135,824	135,710	135,710	105,038
RSPO certified – scheme smallholder area	ha	3,494	3,494	3,474	3,454	3,252
RSPO certified mills	no.	12	12	10	10	10
ISPO certified	no.	5	4	4	4	4
ISCC certified	no.	12	12	11	10	10
POIG audited mills	no.	12	8	4	2	0
ENVIRONMENT						
Water usage						
Plantation	m^3 (million)	0.57	0.65	1.14	1.01	0.99
Mill	m^3 (million)	3.60	3.97	3.26	2.82	2.50
Mill water usage intensity	m^3/MT FFB processed	1.23	1.23	1.19	1.24	1.01[10]
Water consumption						
Blue water	m^3 (million)	8.71	9.85	7.92	7.85	
Green water	m^3 (billion)	1.57	1.55	1.55	1.53	
Grey water	m^3 (million)	477.68	387.78	342.38	459.68	
Effluents						
BOD levels river discharge – Sumatra	mg/l	67.57	54.66	66.27	76.87	76.88
BOD levels river discharge – Kalimantan	mg/l	37.24	28.92			
BOD levels land application – Sumatra	mg/l	58.85	49.12	47.51	52.10	73.46

10 2015 data has been restated.

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
BOD levels land application – Kalimantan	mg/l	46.55	28.98	35.88	45.82	65.08
COD levels river discharge – Sumatra	mg/l	204.96	149.81	183.37	201.38	197.88
COD levels river discharge – Kalimantan	mg/l	172.89	159.33			
COD levels land application – Sumatra	mg/l	203.82	140.48	142.31	147.25	223.51
COD levels land application – Kalimantan	mg/l	216.72	136.21	172.57	187.32	272.88
Total volume of treated effluent discharged into rivers – Sumatra	m^3	109,303	74,389	128,951	117,732	104,035
Total volume of treated effluent discharged into rivers – Kalimantan	m^3	88,256	12,512			
Total volume of treated effluent applied to land – Sumatra	m^3	1,021,719	993,994	789,785	815,851	838,218
Total volume of treated effluent applied to land – Kalimantan	m^3	998,416	1,058,915	770,952	631,096	560,891
Phosphorus and nitrogen in water courses						
P-level inlet – Sumatra	mg/l	0.47	0.88	0.18		
P-level outlet – Sumatra	mg/l	1.07	0.26	0.17		
P-level inlet – Kalimantan	mg/l	0.08	0.06	0.06		
P-level outlet – Kalimantan	mg/l	0.08	0.04	0.06		
N-level inlet – Sumatra	mg/l	1.70	2.97	1.02		
N-level outlet – Sumatra	mg/l	1.94	1.23	0.93		
N-level inlet – Kalimantan	mg/l	2.63	2.46	0.81		
N-level outlet – Kalimantan	mg/l	2.24	1.85	0.57		
Fertiliser type and usage						
Inorganic fertiliser	MT	142,407	140,569	140,571	163,637	134,443
POME	m^3 (million)	2.02	2.04	1.59	1.45	1.40
Total organic fertiliser (DDS and boiler ash)	MT	69,770	66,673	70,001	48,465	55,227

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
Fertiliser usage (mature) – Sumatra	MT/ha	1.73	1.87	1.77	1.76	1.89
Fertiliser usage (mature) – Kalimantan	MT/ha	1.95	1.62	1.78	1.99	1.73
Fertiliser usage (immature) – Sumatra	MT/ha	2.78	2.90	3.36	3.07	2.00
Fertiliser usage (immature) – Kalimantan	MT/ha	1.77	1.52	1.33	1.15	0.88
Herbicide usage						
Toxicity per hectare planted – Sumatra	toxicity/ha	552	519	484	474	400
Toxicity per hectare planted – Kalimantan	toxicity/ha	412	326	430	440	400
Energy consumption from renewable sources						
Palm kernel shells	MT	39,639	48,416	42,927	30,249	30,127
Palm kernel shells – energy	GJ	597,750	730,113	647,335	456,154	454,317
Palm fibre	MT	703,570	779,957	645,933	570,478	630,267
Palm fibre – energy	GJ (million)	4.68	6.00	5.00	3.98	4.94
GHG emissions[11]						
Total net GHG emissions (RSPO mills)	MT CO_2e	2,479,582	2,745,453	2,278,580	2,346,025	2,302,910
GHG emission intensity (RSPO mills) – Group	MT CO_2e/MT CPO	2.80	3.49	3.39	3.33	3.15
GHG emission intensity (RSPO mills) – Sumatra	MT CO_2e/MT CPO	4.34	5.04	4.64	4.52	4.26
GHG emission intensity (RSPO mills) – Kalimantan	MT CO_2e/MT CPO	1.12	1.42	1.62	1.78	1.80
Methane capture facilities	no.	15	14	13		
Total emissions avoided by methane capture facilities	MT CO_2e	537,964	593,070	484,867		
Fire incidents						
Hotspots within concession	no.	119	69	35	90	433
Fires within concession	no.	16	18	4	14	89
Hotspots within surrounding concession boundaries	no.	1,689	269	130	15	41
Fires within surrounding concession boundaries	no.	997	109	33	6	26

11 Other than the number of methane capture facilities, data reflects previous auditing cycle.

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
EMPLOYEES						
Employees at Group-level						
Group total	**no.**	**37,343**	**37,871**	**37,938**	**29,573**	
By country	Indonesia	35,552	36,156	36,495	28,301	
	Malaysia	239	237	221	214	
	Singapore	354	345	295	256	
	Other countries	1,198	1,133	927	802	
By category	Management level	632	661	440	390	
	Non-managerial	36,711	37,210	37,498	29,183	
By gender	Male	28,327	29,754	30,207	22,148	
	Female	9,016	8,117	7,731	7,425	
Employees at plantation- and mill-level						
Total permanent employees by region	**Sumatra**	**9,478**	**9,144**	**8,956**	**8,853**	**9,227**
	Kalimantan	**12,121**	**11,676**	**10,939**	**10,093**	**9,755**
Total senior management – Sumatra	Male	13	3	4	5	5
	Female	0	0	0	0	0
Total senior management – Kalimantan	Male	10	5	5	8	9
	Female	0	0	0	0	0
Total middle management – Sumatra	Male	25	35	28	34	36
	Female	2	1	0	0	0
Total middle management – Kalimantan	Male	35	36	29	37	36
	Female	0	0	0	0	0
Total staff (permanent only)	**no.**	**990**	**961**	**978**	**991**	**1,087**
By gender	Male	740	738	737	757	837
	Female	250	223	241	234	250
Staff turnover – Sumatra	%	12%	14%	14%	9%	13%
Staff turnover – Kalimantan	%	15%	20%	14%	12%	17%
Total workers	**no.**	**21,477**	**20,902**	**19,945**	**18,919**	**19,045**
By contract type	Permanent	20,609	19,859	18,917	17,955	17,895
	Temporary	868	1,043	1,028	964	1,150
By gender	Male	15,729	15,263	14,337	13,672	13,848
	Female	5,748	5,639	5,608	5,247	5,197
Worker turnover – Sumatra	%	15%	16%	11%	17%	19%
Worker turnover – Kalimantan	%	22%	42%	30%	42%	51%

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
Musim Mas lowest monthly wage (IDR)	Sumatra	2,289,228	2,119,100[12]	1,949,285	1,800,750	1,615,000
	Kalimantan	2,458,000	2,377,000	2,095,000	1,934,600	1,735,000
Legal minimum monthly wage (IDR)	Sumatra	2,289,228	2,119,100	1,949,285	1,800,750	1,615,000
	Kalimantan	2,458,000	2,377,000	2,095,000	1,934,600	1,735,000

Note: Wages listed above are the lowest paid within each respective province. A full breakdown of all minimum wages in each region of Indonesia is available here.

HEALTH AND SAFETY						
Plantations and mills						
Total accidents	no.	377	334	590	889	922
Total days lost to accidents	no.	11,001	14,528	14,874	17,447	15,817
Total working hours	no.	41,566,545	37,982,621	35,313,204	35,022,662	34,297,597
Lost time accident rate (Frequency rate) (per 200,000 working hours)	–	1.81	1.76	3.34	5.08	5.38
Severity rate (average days lost per accident)	–	29.18	43.50	25.21	19.63	17.16
Fatalities	no.	3	1	4	3	2

SOCIAL AND COMMUNITY						
Support for smallholders						
Scheme smallholders benefiting from smallholder programmes	no.	3,571	2,423	2,423	2,423	2,304
Scheme smallholder programmes (KKPA)	no.	9	7	7	7	7
Trainings provided to scheme smallholders	no.	98	121	99	85	57
Villages under VDP	no.	17	16	14	14	11
Total income of villages under VDP	IDR (million)	799.9	1,058.9	922.6	565.6	524.1
Total income of smallholders under KKPA	IDR (million)	80,949.3	112,174.3	127,934.7	98,552.5	85,676.2
Independent smallholders covered by Musim Mas-IFC programme	no.	27,927	15,349[13]	9,652	3,178	539
Independent smallholders covered by ESP	no.	1,247	514			

12 Musim Mas lowest monthly wage and legal minimum wage for 2018 have been restated.
13 Correction to figure published in previous report.

Category/ Indicator	Measurement unit/ breakdown	FY2019	FY2018	FY2017	FY2016	FY2015
Infrastructure and services provided						
Musim Mas schools	no.	9	9	8	8	8
Children of Musim Mas employees attending Musim Mas schools	no.	6,157	6,498	5,914	5,700	5,181
Children from community attending Musim Mas schools	no.	20	101	54	61	59
Children of Musim Mas employees attending outside schools	no.	2,686	-	-	-	-
Student scholarship recipients for children of employees and surrounding communities	no.	73	68[13]	5	4	3
Clinics	no.	26	25	24	23	24
Aid posts	no.	2,285	2,043	1,897	1,732	1,664
Housing provided for employees	no.	13,486	12,919	12,383	11,763	11,295
Area enclaved for food security	ha	18.50	19.47	15.70	10.37	10.19
CSR and community programmes						
Contribution to CSR	IDR (billion)	15.2	11.6	12.2	9.5	10.0

13 Correction to figure published in previous report.

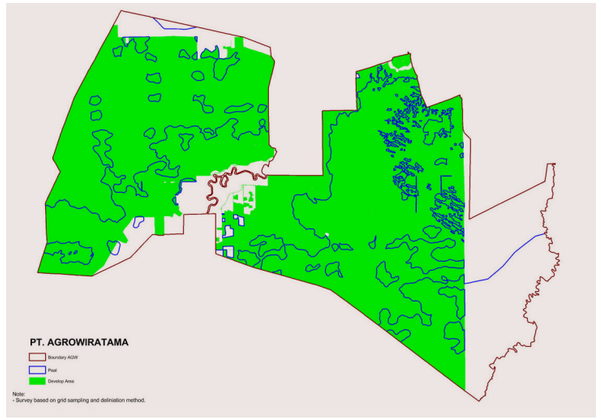
Fauna inventory under IUCN Red List of Threatened Species

IUCN status	Scientific name	Common name		Species
Critically Endangered (CR)	*Alcedo euryzona*	Raja Udang Kalung Biru	Javan Blue-banded Kingfisher	Bird
	Presbytis chrysomelas	Surili Serawak	Bornean Banded Langur	Mammal
	Batagur affinis	Biuku/Tuntong Sungai	Southern River Terrapin	Amphibian
Endangered (EN)	*Mycteria Cinerea*	Bangau Bluwok	Yellow-billed Stork	Bird
	Ciconia stormi	Bangau Strom	Storm's Stork	Bird
	Pycnonotus zeylanicus	Cucak Rawa	Straw-headed Bulbul	Bird
	Nasalis larvatus	Bekantan	Proboscis Monkey	Mammal
	Hylobates moloch	Owa Jawa	Silvery Gibbon	Mammal
	Hylobates albibarbis	Owa Kalimantan	Bornean Agile Gibbon	Mammal
	Hylobates agilis	Owa Ungko	Agile Gibbon	Mammal
	Hylobates syndactylus	Siamang	The Siamang	Mammal
	Tapirus indicus	Tapir Asia	Malayan Tapir	Mammal
	Heosemys spinosa	Kura-kura Duri	Spiny Turtle	Amphibian
	Orlitia borneensis	Kura-kura Sungai Kalimantan	Malayan Giant Turtle	Amphibian
Vulnerable (VU)	*Ciconia episcopus*	Bangau Hitam	Asian Woollyneck	Bird
	Leptoptilos javanicus	Bangau Tongtong	Lesser Adjutant	Bird
	Chloropsis sonnerati	Cica Daun Besar	Greater Green Leafbird	Bird
	Spizaetus nanus	Elang Wallace	Wallace's Hawk Eagle	Bird
	Acridotheres javanicus	Kerak Kerbau	Javan Myna	Bird
	Arborophila orientalis	Puyuh Gonggong Biasa	White-faced Partridge	Bird
	Treron capellei	Punai Besar	Large Green-pigeon	Bird
	Melanoperdix niger	Puyuh Hitam	Black Partridge	Bird
	Sus barbatus	Babi Berjenggot	Bornean Bearded Pig	Mammal
	Aonyx cinereus	Berang-Berang Cakar Kecil	Asian Small-clawed Otter	Mammal
	Macaca nemestrina	Beruk	Pig Tailed Macaque	Mammal
	Presbytis thomasi	Kedih	Thomas's Langur	Mammal
	Nycticebus coucang	Kukang Sunda	Sunda Slow Loris/Greater Slow Loris	Mammal
	Cervus unicolor	Rusa Sambar	Sambar Deer	Mammal
	Amyda cartilaginea	Bulus	Asiatic Softshell Turtle	Reptile
	Tomistoma schlegelii	Senyulong/Buaya Sepit	False Gharial	Reptile
	Ophiophagus hannah	Ular Kobra/Ular Anang	King Cobra	Reptile
	Cuora amboinensis	Kura-kura Batok	Southeast Asian Box Turtle	Amphibian
	Pelodiscus sinensis	Kura-Kura Tempurung Lunak	Chinese Softshell Turtle	Amphibian

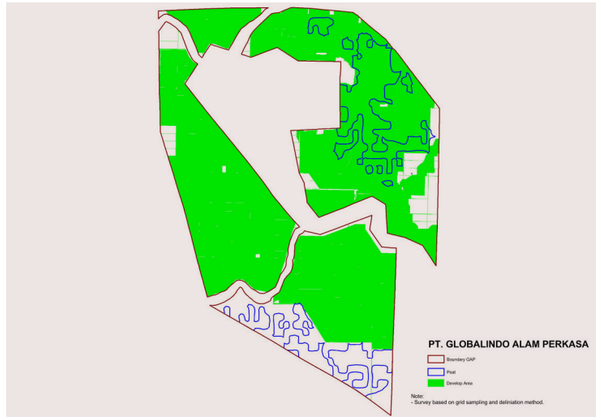
IUCN status	Scientific name	Common name		Species
Near Threatened (NT)	*Malacopteron affine*	Asi Topi Jelaga	Sooty-capped Babbler	Bird
	Napothera macrodactyla	Berencet Besar	Large wren-babbler	Bird
	Psittacula alexandri	Betet Biasa	Red-breasted Parakeet	Bird
	Psittacula longicauda	Betet Ekor Panjang	Long-tailed Parakeet	Bird
	Dicaeum everetti	Cabai Tungir Coklat	Brown-backed Flowerpecker	Bird
	Meiglyptes tukki	Caladi Badok	Buff-necked Woodpecker	Bird
	Meiglyptes tristis	Caladi Batu	White-rumped Woodpecker	Bird
	Actenoides concretus	Cekakak Hutan Melayu	Rufous-collared Kingfisher	Bird
	Chloropsis cyanopogon	Cica Daun Kecil	Lesser Green Leafbird	Bird
	Chloropsis cochinchinensis	Cica Daun Sayap Biru	Javan Leafbird	Bird
	Aegithina viridissima	Cipoh Jantung	Green Lora	Bird
	Macronus ptilosus	Ciung Air Pong Pong	Fluffy-backed Tit-babbler	Bird
	Pycnonotus bimaculatus	Cucak Gunung	Orange-spotted Bulbul	Bird
	Pycnonotus cyaniventris	Cucak Kelabu	Grey-bellied Bulbul	Bird
	Pycnonotus eutilotus	Cucak Rumbai Tungging	Puff-backed Bulbul	Bird
	Icthyophaga humilis	Elang Ikan Kecil	Lesser Fish-eagle	Bird
	Icthyophaga ichthyaetus	Elang Ikan Kepala Kelabu	Grey-headed Fish Eagle	Bird
	Rhabdotorrhinus corrugatus	Julang Jambul Hitam	Wrinkled Hornbill	Bird
	Phaenicophaeus diardi	Kadalan Beruang	Black-bellied Malkoha	Bird
	Anthracoceros malayanus	Kangkareng Hitam	Black Hornbill	Bird
	Argusianus argus	Kuau Raja	Great Argus	Bird
	Trichixos pyrropygus	Kucica Ekor Kuning	Rufous-tailed Shama	Bird
	Harpactes diardii	Luntur Diard	Diard's Trogon	Bird
	Harpactes kasumba	Luntur Kasumba	Red-naped Trogon	Bird
	Calyptomena viridis	Madi Hijau Kecil	Green Broadbill	Bird
	Anthreptes rhodolaemus	Madu Leher Merah	Red-throated Sunbird	Bird
	Psittinus cyanurus	Nuri Tanau	Blue-rumped Parrot	Bird
	Trichastoma rostratum	Pelanduk Dada Putih	White-chested Babbler	Bird
	Chrysophlegma humii	Pelatuk Kumis Kelabu	Chequer-throated Yellownape	Bird
	Prionochilus thoracicus	Pentis Kumbang	Scarlet-breasted Flowerpecker	Bird
	Garrulax palliatus	Poksai Mantel	Sunda Laughingthrush	Bird
	Treron fulvicollis	Punai Bakau	Cinnamon-headed Green-pigeon	Bird
	Buceros rhinoceros	Rangkong Badak	Rhinoceros Hornbill	Bird
	Buceros bicornis	Rangkong Papan	Great Hornbill	Bird
	Lophura ignita	Sempidan Biru	Crested Fireback	Bird
	Eurylaimus ochromalus	Sempur Hujan Darat	Black-and-yellow Broadbill	Bird
	Pericrocotus igneus	Sepah Tulin	Fiery Minivet	Bird
	Loriculus pusillus	Serindit Jawa	Yellow-throated Hanging Parrot	Bird
	Cyornis turcosus	Sikatan Melayu	Malaysian Blue Flycatcher	Bird
	Cyornis umbratilis	Sikatan Rimba Dada Kelabu	Grey-chested Jungle Flycatcher	Bird
	Caloramphus hayii	Takur Ampis Sumatra	Malay Brown Barbet	Bird
	Magalaima rafflesii	Takur Tutut	Red-crowned Barbet	Bird
	Megalaima mystacophanos/ Psilopogon mystacophanos	Takur Warna-warni	Red-throated Barbet	Bird
	Platylophus galericulatus	Tangkar Ongklet	Crested Jay	Bird
	Stachyris maculata	Tepus Tunggir Merah	Chestnut-rumped Babbler	Bird
	Pityriasis gymnocephala	Tiong Batu Kalimantan	Bornean Bristlehead	Bird
	Pteropus vampyrus	Kalong Besar	Large Flying Fox	Mammal
	Trachypithecus cristatus	Lutung Kelabu	Silvery Lutung	Mammal
	Trachypithecus obscurus	Monyet kacamata	Dusky Leaf Monkey	Mammal
	Hemigalus derbyanus	Musang Belang	Banded Civet	Mammal
	Cyclemys dentata	Kura-kura Bergerigi	Asian Leaf Turtle	Amphibian

Peat maps

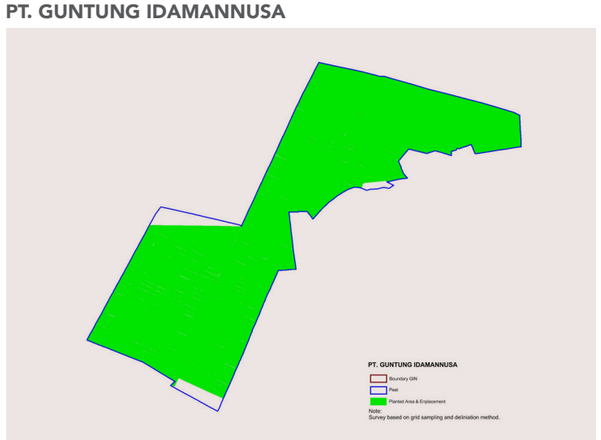
PT. AGROWIRATAMA



PT. GLOBALINDO ALAM PERKASA



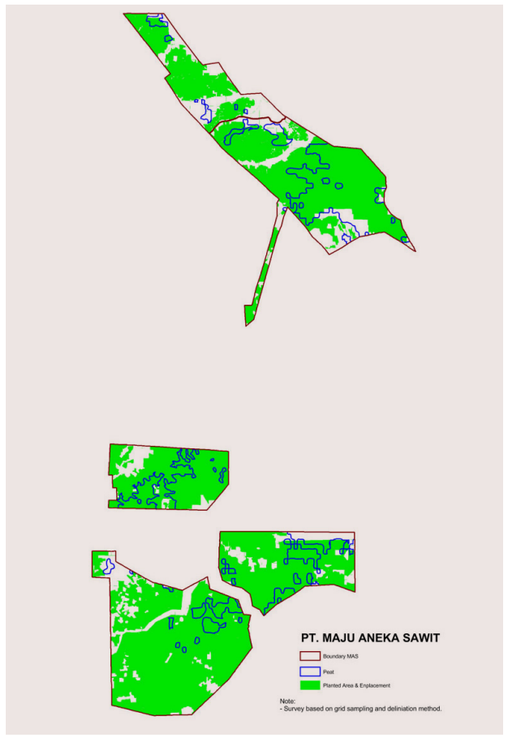
PT. GUNTUNG IDAMANNUSA



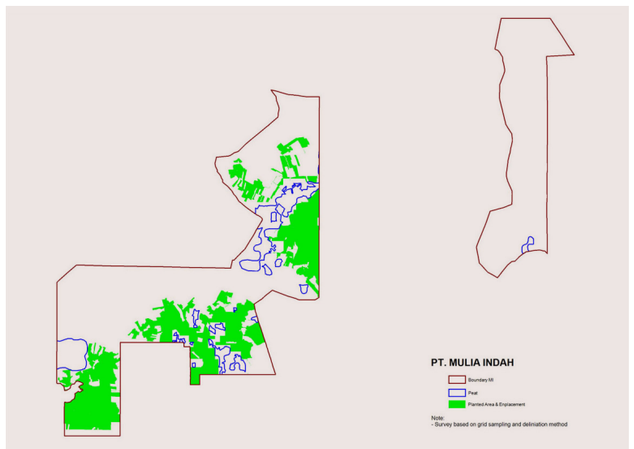
- Boundary
- Peat
- Planted Area and Enplacement

Note: Survey based on grid sampling and delineation method.

PT. MAJU ANEKA SAWIT



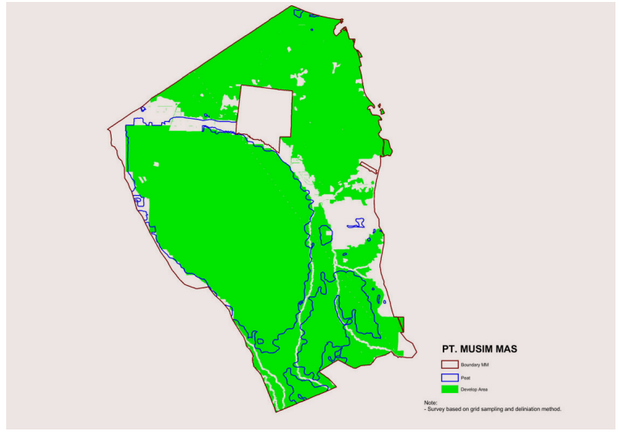
PT. MULIA INDAH



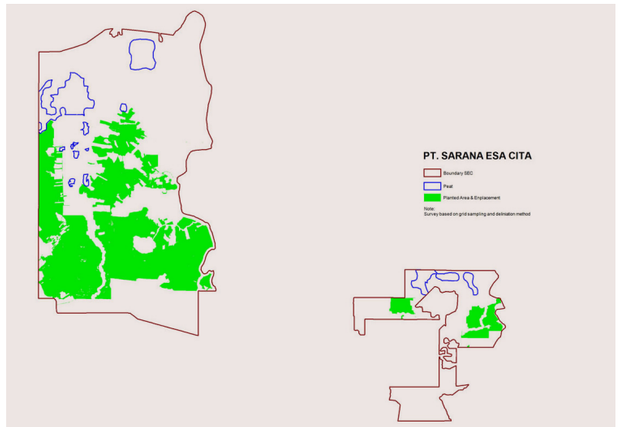
- Boundary
- Peat
- Planted Area and Enplacement

Note: Survey based on grid sampling and delineation method.

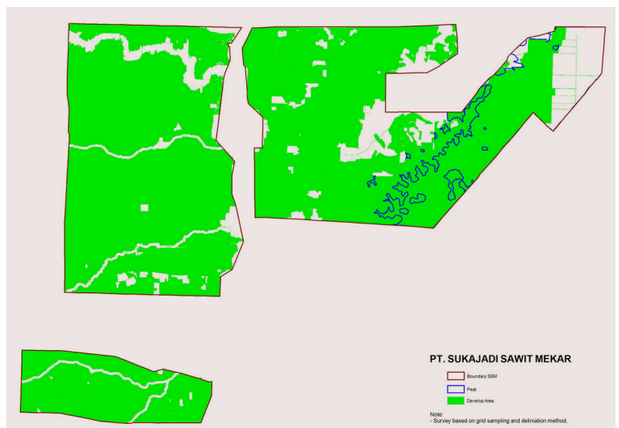
PT. MUSIM MAS



PT. SARANA ESA CITA



PT. SUKAJADI SAWIT MEKAR



- Boundary
- Peat
- Planted Area and Enplacement

Note: Survey based on grid sampling and delineation method.

GRI Index

The Global Reporting Initiative (GRI) is a multi-stakeholder standard for sustainability reporting, providing guidance on determining report content and indicators. GRI is the first and most widely adopted global standard for sustainability reporting. It has been designed to enhance the global comparability and quality of information on environmental and social impacts, thereby enabling greater transparency and accountability of organisations. Sustainability reporting based on the GRI Standards should provide a balanced and reasonable representation of an organisation's positive and negative contributions towards the goal of sustainable development. This report has been prepared in alignment with the GRI Standards: Core option.

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GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Supply chain transformation at scale, 55-56 Our suppliers, 56-65
	103-2	The management approach and its components	Roadmap to Responsible Supply Base (2020 and Beyond) Our suppliers, 56-65
	103-3	Evaluation of the management approach	Our suppliers, 56-65
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	Roadmap to Responsible Supply Base (2020 and Beyond) Proactively engaging and mentoring suppliers on NDPE, 60
	308-2	Negative environmental impacts in the supply chain and actions taken	Proactively engaging and mentoring suppliers on NDPE, 60 Monitoring deforestation and peat development within the supply chain, 61-63 Managing NDPE breaches, 64
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GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Monitoring and managing fires, 35-38
	103-2	The management approach and its components	Monitoring and managing fires, 35-38
	103-3	Evaluation of the management approach	Monitoring and managing fires, 35-38
Pesticide and chemicals			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Increasing productivity and enhancing yield, 32-33 Reducing reliance on chemicals, 44-45
	103-2	The management approach and its components	Reducing reliance on chemicals, 44-45
	103-3	Evaluation of the management approach	Reducing reliance on chemicals, 44-45

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GRI 400 SOCIAL			
Employment			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Overview of our workforce, 45 Working at Musim Mas, 46-47
	103-3	Evaluation of the management approach	Safeguarding the welfare of our people, 45 Overview of our workforce, 45 Working at Musim Mas, 46-47
GRI 401: Employment 2016	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Working at Musim Mas, 46-47 Temporary workers, 48-49
Labour/Management Relations			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45 Working at Musim Mas, 46-47
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Working at Musim Mas, 46-47 Freedom to unionise and collectively bargain, 47
	103-3	Evaluation of the management approach	Working at Musim Mas, 46-47 Contracts and provisions, 47 Freedom to unionise and collectively bargain, 47
GRI 402: Labour/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	Contracts and provisions, 47
Occupational Health and Safety			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45 Health and safety, 49-50
	103-2	The management approach and its components	Reducing reliance on chemicals, 44-45 Health and safety, 49-50
	103-3	Evaluation of the management approach	Health and safety, 49-50
GRI 403: Occupational Health and Safety 2018 Management approach disclosures	403-1	Organisational health and safety management system	Health and safety, 49-50
	403-5	Worker training on occupational health and safety	Reducing reliance on chemicals, 44-45 Health and safety, 49-50
	403-6	Promotion of worker health	In the face of the global pandemic, 05 Health and safety, 49-50 Safeguarding community health, 50-51 Food security, 51
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Proactively engaging and mentoring suppliers on NDPE,60 Addressing 'No Exploitation' within the supply chain, 63
GRI 403: Occupational Health and Safety 2018	403-9	Work-related injuries	Health and safety, 49-50 Base data
Diversity and Equal Opportunity			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Equal opportunity and gender equality, 48
	103-2	The management approach and its components	Equal opportunity and gender equality, 48
	103-3	Evaluation of the management approach	Equal opportunity and gender equality, 48
GRI 405: Diversity and Equal Opportunity 2016	405-2	Ratio of basic salary and remuneration of women to men	Equal opportunity and gender equality, 48
Non-Discrimination			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45 Working at Musim Mas, 46-47 Equal opportunity and gender equality, 48
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Overview of our workforce, 45 Equal opportunity and gender equality, 48
	103-3	Evaluation of the management approach	Working at Musim Mas, 46-47 Equal opportunity and gender equality, 48
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	No incidents of discrimination reported
Freedom of Association and Collective Bargaining			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Working at Musim Mas, 46-47 Freedom to unionise and collectively bargain, 47
	103-2	The management approach and its components	Working at Musim Mas, 46-47 Freedom to unionise and collectively bargain, 47
	103-3	Evaluation of the management approach	Freedom to unionise and collectively bargain, 47
GRI 4017: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Working at Musim Mas, 46-47 Freedom to unionise and collectively bargain, 47

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GRI 400 SOCIAL			
Child Labour			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45 Supply chain transformation at scale, 55-56
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Overview of our workforce, 45 Providing children access to education, 52-53 Proactively engaging and mentoring suppliers on NDPE, 60 Addressing 'No Exploitation' within the supply chain, 63
	103-3	Evaluation of the management approach	Managing NDPE breaches, 64 Grievances
GRI 408: Child Labour 2016	408-1	Operations and suppliers at significant risk for incidents of child labour	Proactively engaging and mentoring suppliers on NDPE,60 Addressing 'No Exploitation' within the supply chain, 63
Forced or Compulsory Labour			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Overview of our workforce, 45 Supply chain transformation at scale, 55-56
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Overview of our workforce, 45 Proactively engaging and mentoring suppliers on NDPE,60 Addressing 'No Exploitation' within the supply chain, 63
	103-3	Evaluation of the management approach	Managing NDPE breaches, 64 Grievances
GRI 409: Force or Compulsory Labour 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Proactively engaging and mentoring suppliers on NDPE, 60 Addressing 'No Exploitation' within the supply chain, 63
Rights of Indigenous Peoples			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Safeguarding community rights and livelihoods, 50-53 Upholding land and community rights, 50
	103-2	The management approach and its components	Safeguarding the welfare of our people, 45 Safeguarding community rights and livelihoods, 50-53
	103-3	Evaluation of the management approach	Managing NDPE breaches, 64 Grievances
GRI 411: Right of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	Safeguarding community rights and livelihoods, 50-53 Managing NDPE breaches, 64 Grievances

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GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Safeguarding community rights and livelihoods, 50-53
	103-2	The management approach and its components	Safeguarding community rights and livelihoods, 50-53 Smallholder engagement, 66 Landscape collaborations, 73
	103-3	Evaluation of the management approach	Safeguarding community rights and livelihoods, 50-53 Smallholder engagement, 66 Landscape collaborations, 73
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programmes	Safeguarding community rights and livelihoods, 50-53 Smallholder engagement, 66 Landscape collaborations, 73
	413-2	Operations with significant actual and potential negative impacts on local communities	Smallholder engagement, 66
Supplier Social Assessment			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Supply chain transformation at scale, 55-56 Our suppliers, 56-65
	103-2	The management approach and its components	Our suppliers, 56-65 Addressing 'No Exploitation' within the supply chain, 63 Roadmap to Responsible Supply Base (2020 and Beyond)
	103-3	Evaluation of the management approach	Our suppliers, 56-65 Managing NDPE breaches, 64
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	Proactively engaging and mentoring suppliers on NDPE, 60
	414-2	Negative social impacts in the supply chain and actions taken	Managing NDPE breaches, 64 Grievances
Smallholder Engagement			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Smallholder engagement, 66
	103-2	The management approach and its components	Smallholder engagement, 66
	103-3	Evaluation of the management approach	Smallholder engagement, 66
Government Engagement			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	Stakeholder collaboration, 26 Smallholder engagement, 66 Landscape collaborations, 73
	103-2	The management approach and its components	In the face of the global pandemic, 05 Notable partnerships in 2019, 26 Smallholder engagement, 66 Landscape collaborations, 73
	103-3	Evaluation of the management approach	Smallholder engagement, 66 Landscape collaborations, 73

Glossary

Annual Communications of Progress (ACOP) Mandatory reports submitted by Ordinary and Affiliate RSPO members to gauge their progress towards 100% RSPO certified sustainable palm oil.

Biodiversity The diversity (number and variety of species) of plant and animal life within a region.

Biological Oxygen Demand (BOD) The amount of oxygen used when organic matter undergoes decomposition by micro-organisms. Testing for BOD is done to assess the amount of organic matter in water.

Carbon dioxide equivalents (CO_2e) Carbon dioxide equivalents provide a universal standard of measurement against which the impacts of releasing (or avoiding the release of) different greenhouse gases can be evaluated.

Chemical Oxygen Demand (COD) The measurement of the amount of oxygen required to oxidise soluble and particulate organic matter in water. COD testing involves using a strong chemical oxidising agent to chemically oxidise the organic material in a sample of wastewater under controlled conditions.

Decent living wage (DLW) The remuneration received for a standard workweek by a worker in a particular place; sufficient to afford a decent standard of living for the worker and his/her family. Elements of a decent standard of living include food, water, housing, education, healthcare, transport, clothing and other essential needs, including provision for unexpected events.

Effluents Water, such as mill process water, discharged from one source into a separate body of water.

Extension Services Programme (ESP) A Musim Mas programme developed to address the challenges of independent smallholders who supply indirectly to Musim Mas through our third-party suppliers.

Extraction rate The amount of oil extracted from oil palm fruit at a mill. Crude palm oil (CPO) is extracted from the flesh; palm kernel oil (PKO) from the nut.

Fresh fruit bunch (FFB) Bunch harvested from the oil palm tree. The weight of the fruit bunch ranges from 10 kg to 40 kg, depending on the size and age of the tree.

Free, Prior and Informed Consent (FPIC) The principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or use.

Global Reporting Initiative (GRI) A multi-stakeholder standard for sustainability reporting, providing guidance on determining report content and indicators.

Glyphosate-based herbicides (GBH) Used to manage weed growth across a variety of agricultural applications.

Good Manufacturing Practices Plus Feed Safety Assurance (GMP+ FSA) Standards developed to harmonise requirements and to ensure quality and safety across the entire feed chain. GMP+ FSA certified companies must demonstrate that they meet all requirements and conditions for the assurance of feed safety.

Greenhouse gas (GHG) emissions Gases in the atmosphere that absorb and emit radiation within the thermal infrared range. The primary greenhouse gases in the Earth's atmosphere are water vapour, carbon dioxide, methane, nitrous oxide, and ozone. Scope 1 GHG emissions are emissions released into the atmosphere as a direct result of an activity, or series of activities, at a facility level. Scope 2 GHG emissions are those released into the atmosphere from the indirect consumption of an energy commodity.

High Carbon Stock Approach (HCSA) A global methodology used in agricultural land development planning that is currently applied in fragmented tropical landscapes on mineral soils in the humid tropics. The methodology distinguishes HCS forest areas for protection from degraded lands with low carbon and biodiversity values that may be considered for development.

High Conservation Value (HCV) Areas with HCVs are natural habitats which are of outstanding significance or critical importance due to their high biological, ecological, social or cultural values. These areas need to be appropriately managed in order to maintain or enhance those identified values. There are six possible HCVs that can be identified, covering environmental and social aspects of a natural forest.

Identity Preserved An RSPO supply-chain model wherein sustainable palm oil from a single identifiable certified source is kept separate from ordinary palm oil across every link in the supply chain.

Independent smallholder Small growers that cultivate up to 50 hectares, are self-financed, managed, and equipped, but are not bound to any one mill.

Indonesia Sustainable Palm Oil (ISPO) The mandatory national sustainable palm oil standard in Indonesia.

Integrated Pest Management (IPM) The careful consideration of all available pest-control techniques and subsequent integration of appropriate measures that discourage the development of pest populations. IPM aims at keeping pesticides and other interventions to levels that are economically justified and reduce or minimise risks to human health and the environment. It also emphasises the growth of healthy crops with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.

International Finance Corporation (IFC) An international financial institution that offers investment, advisory, and asset-management services to encourage private-sector development in developing countries.

International Labour Organization (ILO) A tripartite international body and UN agency comprising labour, management and government representatives. It disseminates labour information and sets minimum international labour standards called "conventions", offered to member nations for adoption.

International Sustainability and Carbon Certificate (ISCC) A global biomass and bioenergy certification scheme.

Italian National Certification System for Biofuels and Bioliquids (IT SNC) The Italian national certification system setting out the country's goals and main strategic lines under the EC Renewable Energy Directive. It guarantees the reliability of information demonstrating compliance with biofuel and bioliquid sustainability criteria, and the independent verification of the information about the production chain of said products provided by economic operators.

IUCN Red List Based in Switzerland, the International Union for Conservation of Nature and Natural Resources (also known as The World Conservation Union) is an organisation involved in the preservation of natural resources. IUCN publishes the Red Data Book, which lists the endangered species of every nation.

***Kredit Koperasi Primer Anggota* (KKPA)** A smallholder primary cooperative credit scheme, voluntarily initiated by Musim Mas in 1996. It provides smallholders with practical support to acquire the skills and technology needed to undertake palm oil cultivation.

Leguminous cover crops (LCC) Plants that are typically high in nitrogen and planted to cover the soil rather than to be harvested. Leguminous cover crops play an important role in weed suppression, nutrition, growth and yield of oil palm, soil erosion control and soil moisture conservation.

Musim Mas-IFC Smallholder Programme A programme developed in partnership with the International Finance Corporation to support independent smallholders supplying to Musim Mas mills in meeting the same farming standards as those adopted by large palm oil organisations.

No Deforestation, No Peat, No Exploitation (NDPE) policies or commitments Adopted by the private sector (downstream companies, traders, mills and growers) commonly in relation to oil palm production. Committed companies adopt and support practices to cut the link between deforestation and developing land, to not develop on peatlands, and to not exploit workers, communities and smallholders.

New Planting Procedure (NPP) A set of assessments and verification activities to be conducted by RSPO grower members and certification bodies prior to a new oil palm development to help guide responsible planting and ensure that social and environmental requirements have been met. The NPP report goes through a 30-day public consultation. Planting and associated development can only begin once the NPP is complete and RSPO approval is granted.

New York Declaration on Forests (NYDF) A voluntary and non-binding international declaration to take action to halt global deforestation. The NYDF has roots in other processes, and its aims overlap with the Sustainable Development Goals and the Paris Agreement adopted in 2015.

Non-governmental organisation (NGO) In the context of this report, grassroots and lobbying organisations focused on environmental or social issues.

Nucleus estates Refers to a company's own concessions under the plasma plantation model introduced in Indonesia in the 1980s. Smallholders in the 'plasma' receive support from the 'nucleus' in the form of technical and marketing assistance to improve the productivity of the neighbouring farmers or smallholders.

PalmGHG The RSPO PalmGHG tool that calculates the emissions generated and sequestrated from activities and processes engaged during agricultural and mill stages. Refer to detailed scope and boundaries here.

Palm Oil Innovation Group (POIG) A multi-stakeholder initiative that strives to achieve the adoption of responsible palm oil production practices by key players in the supply chain by developing and sharing a credible and verifiable benchmark that builds upon the RSPO, and by creating and promoting innovations.

Palm oil mill effluent (POME) A by-product of processed FFB. Peat An accumulation of partially decayed vegetation matter.

Peat forms in wetlands or peatlands, variously called bogs, moors, muskegs, pocosins, mires, and peat swamp forests.

Program for Pollution Control, Evaluation, and Rating (PROPER) Indonesia's national public environmental reporting initiative. It uses a colour-coded rating scheme to grade factories' performance in pollution control against regulatory standards.

Risk-calibrated traceability A Musim Mas approach to mapping smallholders' villages against a landscape map and prioritising risk areas for traceability.

Roadmap In this report, there are two contexts when referring to roadmaps. The **Roadmap to Responsible Supply Base (2020 and Beyond)** is the Musim Mas communication piece on targets and plans to bring suppliers into compliance with commitments. Meanwhile, we also compile supplier **roadmaps** with timebound plans and clear implementation milestones to achieve compliance with our NDPE commitments.

Roundtable on Sustainable Palm Oil (RSPO) A multi-stakeholder organisation based in Kuala Lumpur, Malaysia, that has developed a certification scheme for sustainable palm oil. All RSPO members must comply with the RSPO Principles and Criteria (P&C), a set of stringent standards for the production of sustainable palm oil.

Scheme smallholders Smallholders operating under a programme initiated by the Indonesian Government to encourage the development of smallholders' plantations, where plantation companies (nucleus estates) assist and support the surrounding community plantations.

Segregated The segregated supply-chain model assures that RSPO-certified palm oil and its derivatives delivered to the end-user come only from RSPO-certified sources. It permits the mixing of RSPO-certified palm oil from a variety of sources.

Self-Assessment Tool A Musim Mas-developed tool for suppliers to self-declare operational information against Musim Mas sustainability indicators.

Stakeholder Any group or individual who is affected by – or can affect – a company's operations.

Sustainable Supply Chain Certification (SCCS) An RSPO standard with auditable requirements designed for use by organisations in the palm oil supply chain to demonstrate the implementation of systems for the control of RSPO-certified oil palm products.

Sustainability A term expressing a long-term balance between social, economic and environmental objectives. Often linked to sustainable development, which is defined as "development that meets the needs of current generations without compromising the needs of future generations".

Toxicity Measures the degree to which a substance is harmful to living organisms. Toxicity in agricultural chemicals is measured using the LD50 methodology, i.e. the toxicity units corresponding to a lethal dose for 50% of a population of rats.

Village Development Programme (VDP) A Musim Mas programme developed for scheme smallholders and tailored to villages where plantations are community-managed rather than individually owned.



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