



# CREATING A SUSTAINABLE SUPPLY CHAIN

Sustainability Report 2017



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## INTRODUCTION

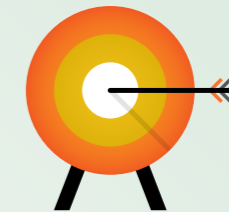


As one of the largest players in the palm oil industry, we believe that the best strategy to ensure our continued success is to be the leading sustainable and responsible company.



### 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 of all relevant legal requirements.

## CHAIRMAN WELCOME

### DEAR STAKEHOLDERS,

I am pleased to introduce the first Musim Mas Sustainability Report, which I hope readers will find a comprehensive, detailed and transparent overview of our business and ongoing sustainability efforts.

This is our first Sustainability Report, but many readers will be aware that it represents just one more step in a long and eventful journey. Our structured path towards sustainability began in 2004, when we became the first Indonesian palm oil company to join the newly established Roundtable on Sustainable Palm Oil. We were the first Indonesian grower certified against the RSPO P&C standard, certifying our first estates and plasma smallholders in 2009 and 2010 respectively, and completing certification for all our mills with plantations in 2012.

Musim Mas has continued to step up in response to critical industry issues. To date, we have 13 methane capture facilities, and this makes us one of the few companies where methane capture facilities are standard at all mills. We have also been quick to adopt innovative approaches. Having observed the emergence of new methodologies to stop deforestation through the High Carbon Stock Approach, and new guidance on labour standards, we enshrined our clear commitments to the RSPO and to advancing sustainability within our industry in our Sustainability Policy, which was published in 2014.

From these first initiatives, we have contributed to continued improvement by participating on the RSPO Executive Board, Working Groups and taskforces to forge common solutions with our stakeholders. We went further in 2016 and joined the Palm Oil Innovation Group – a group of likeminded companies and NGOs that seeks to demonstrate that, in addition to the RSPO, it is possible to raise standards still further. With POIG, we have improved our internal processes on labour conditions and peat management, and are currently finalising our verification against the POIG Charter. We expect to be able to supply POIG verified palm oil products in 2019.

I believe that taking the lead is good for our business, and we are now in a stronger position to engage new markets that demand impeccable sustainability credentials. However, sustainability leadership is not always an easy mantle to uphold. In Indonesia, there is a genuine potential for conflict between environmental protection and social development agendas. I want to ensure that our continued work to protect forests and valuable ecosystems does not come at the cost of lost opportunities for marginalised communities and smallholders.

I also believe that progress is possible for all players, if all players work with a common purpose. Over the last decade, I have observed political developments that have opened the field for sustainability in our sector. In May 2011, the Indonesian government implemented a moratorium on new licenses in primary natural forests and peatlands. Further, the Peatland Restoration Agency was established in 2016 to stop peatland conversion and restore degraded areas. We have leveraged these opportunities, and the political momentum, to drive sustainable practices among our suppliers. The Indonesian private sector has also collectively risen to challenge. Tremendous strides have been taken towards raising sustainability standards through collaborative landscape projects across the archipelago. With such a clear and collective purpose, I am confident that we can strike a good balance between healthy business, community prosperity and environmental protection.

This report does not attempt to sugar coat the fact that there are many challenges ahead, particularly in our ongoing engagements with smallholders and third-party suppliers. However, through constant focus on the benefits of sustainability, supported by robust processes and policies, I believe we can contribute to a more sustainable palm oil industry and a more equitable world.

We may not be the most visible or vocal palm oil company – we believe action speaks louder than words – but as a Group we do hope this report contributes to our quest for improvement and helps to deepen our dialogue with our local and global stakeholders. I look forward to continuing the journey together.

**Executive Chairman**

## TARGETS AND ACHIEVEMENTS

### OUR ACHIEVEMENTS

Year	Achievement
2004	• First company in Indonesia to join the Roundtable on Sustainable Palm Oil (RSPO)
2009	• First plantation in Indonesia to attain RSPO certification
2010	• First smallholder scheme in Indonesia to attain RSPO certification
2011	• Register our first methane capture plant with United Nations Framework Convention on Climate Change (UNFCCC) as Clean Development Mechanism project
2012	• First major group to achieve 100% RSPO P&C certification for all our mills with plantations • First to receive certification for the Indonesian Sustainable Palm Oil (ISPO) scheme
2013	• One of only two companies in Indonesia to obtain the United States Energy Policy Act Renewable Fuel Standard
2014	• Published a comprehensive Sustainability Policy, extended to third-party suppliers
2015	• Obtained membership approval for the Palm Oil Innovation Group (POIG) • Initiated Indonesia Palm Oil Development for Smallholders Project with International Finance Corporation (IFC) • Published First Sustainability Policy Progress Report
2016	• Undertook labour verification assessment with fair labour non-profit organisation, Verité • Identified ownership pattern in our supply base by undertaking traceability to plantation • Undergone POIG verification audit • Launched an integrated grievance mechanism
2017	• Successfully completed the first five-year cycle of RSPO P&C certification for eight mills • Conducted a living wage assessment • Ten mills contracted to supply the national grid with electricity generated by methane capture • Launched Extension Services Programme (ESP) for independent smallholders

### OUR TARGETS

Year	Targets	Status
2018	<ul style="list-style-type: none"> <li>• Publish all suppliers' GPS coordinates on corporate website</li> <li>• Release Sustainability Policy Implementation Plan</li> <li>• All crushing plants comply with GMP+ Feed Safety Assurance (FSA) certification<sup>1</sup></li> <li>• Achieve Italian National Sustainability Certification System for all existing mills</li> <li>• Achieve 13,932 registered independent smallholders under Indonesian Palm Oil Development for Smallholders, representing a total of 34,505 hectares</li> </ul>	<ul style="list-style-type: none"> <li>• GPS coordinates published in May 2018</li> <li>• Sustainability Policy Implementation Plan released in June 2018</li> <li>• Completed</li> <li>• Completed</li> <li>• Achieved in September 2018</li> </ul>
2019	<ul style="list-style-type: none"> <li>• All mills equipped with methane capture facilities</li> <li>• Achieve POIG verification</li> </ul>	<ul style="list-style-type: none"> <li>• As at December 2017, 13 out of a total of 16 mills are equipped with methane capture facilities</li> <li>• Musim Mas is working to achieve POIG verification by February 2019</li> </ul>
2020	<ul style="list-style-type: none"> <li>• Support minimum 2,000 smallholders in achieving sustainable palm oil certification under Indonesian Palm Oil Development for Smallholders</li> <li>• 20,000 trained independent smallholders</li> <li>• Maintain 100% RSPO certification of all owned plantations and mills</li> <li>• Four sustainable procurement landscapes<sup>3</sup> that are recognised by multi-stakeholder platforms</li> <li>• Verified NDPE compliance for 15 primary supplier groups</li> </ul>	<ul style="list-style-type: none"> <li>• Two new mills achieved RSPO certification in 2018, bringing the total to 12 out of 13 mills certified<sup>2</sup></li> </ul>

1 The GMP+ standards have been developed to harmonise requirements for feed in order to ensure quality and safety throughout the entire feed chain. GMP+ FSA certification is the largest module within the GMP+ certification scheme.  
2 Musim Mas owns and operates 16 mills in total. However, only 13 mills have plantations and are eligible to obtain RSPO Principles and Criteria certification.  
3 The four landscapes are: Aceh Tamiang (Aceh), Musi Banyuasin (South Sumatra), Siak and Pelalawan (Riau), Sambas (West Kalimantan).

## REPORT PURPOSE AND SCOPE



This inaugural sustainability report from Musim Mas aims to provide a detailed overview of the Group's environmental and social performance against our 2014 Sustainability Policy commitments, as well as our commitments towards leading sustainability standards and multi-stakeholder initiatives. This includes our progress towards verification against the Palm Oil Innovation Group (POIG) Charter. It also gives us an opportunity to bridge potential gaps in transparency and public reporting that have been brought to our attention by key stakeholders.

This report covers the calendar years 2016 and 2017. Benchmark data from 2015 is included where relevant and

available, and we have incorporated information about our progress in 2018 where this has a significant bearing on the topics described. The data presented covers all upstream operations controlled by Musim Mas as at 31 December 2017, unless otherwise stated. In addition to the impacts within our own organisational boundaries, the report also details some material aspects related our third-party suppliers, including smallholders.

Moving forward, Musim Mas plans to publish a full sustainability report on a biennial basis. For more information about the scope, materiality and context of this report please see page 81.

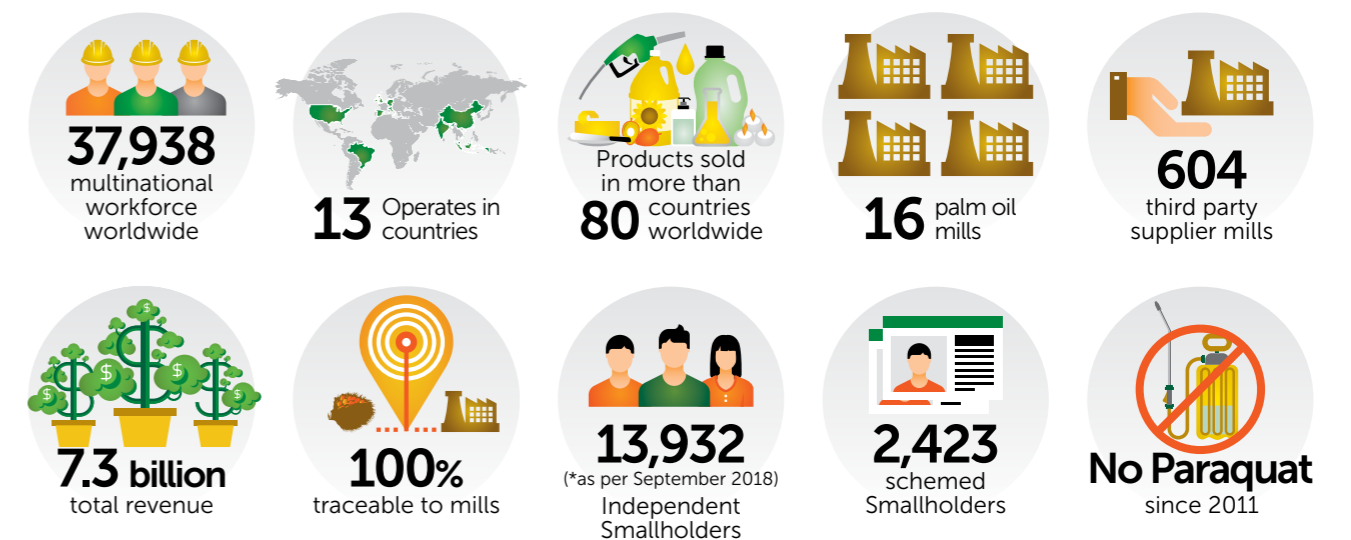
## ABOUT MUSIM MAS

Headquartered in Singapore, Musim Mas Group ("Musim Mas") is a private limited company with a presence in 13 countries. We operate across every link in the palm oil supply chain, managing 194,204 hectares of plantations in Indonesia – including 7,170 hectares of infrastructure – as well as milling, refining and manufacturing sites across Asia-Pacific and Europe. An extensive fleet of tankers and barges supports our global operations, enhancing both our global reach and our logistical capabilities.

The Group's global marketing activities are undertaken by a separate entity, Inter-Continental Oils and Fats (ICOF), which is a member of the Musim Mas Group.

Also based in Singapore, ICOF oversees the marketing and distribution of palm oils, lauric oils and derivative products to more than 80 countries.

Our company traces its history back to 1932 and the establishment of the Nam Cheong Soap Factory in Medan, Indonesia. From these humble beginnings, the company has grown from strength to strength, opening the first palm oil refinery in Indonesia in 1970, its first plantations in 1988, and its first palm oil mill in 1991. Today, with a multinational workforce of about 37,938 people, Musim Mas is one of the largest players in the global palm oil sector.



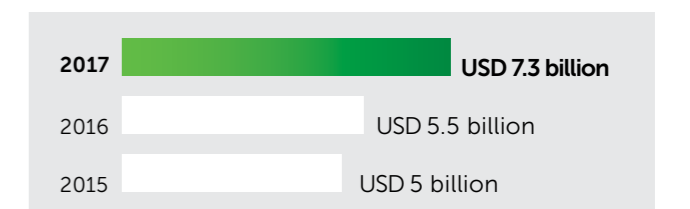
### Group employees by country



### FINANCIAL POSITION

In 2017, our revenue was USD 7.3 billion, a significant increase compared to the previous two financial years, namely 33% from FY2016. This growth in revenue is due to the expanded traded volume and scope of products for our operations globally.

### 3-year revenue and profit before tax



## ABOUT MUSIM MAS

### CORPORATE GOVERNANCE

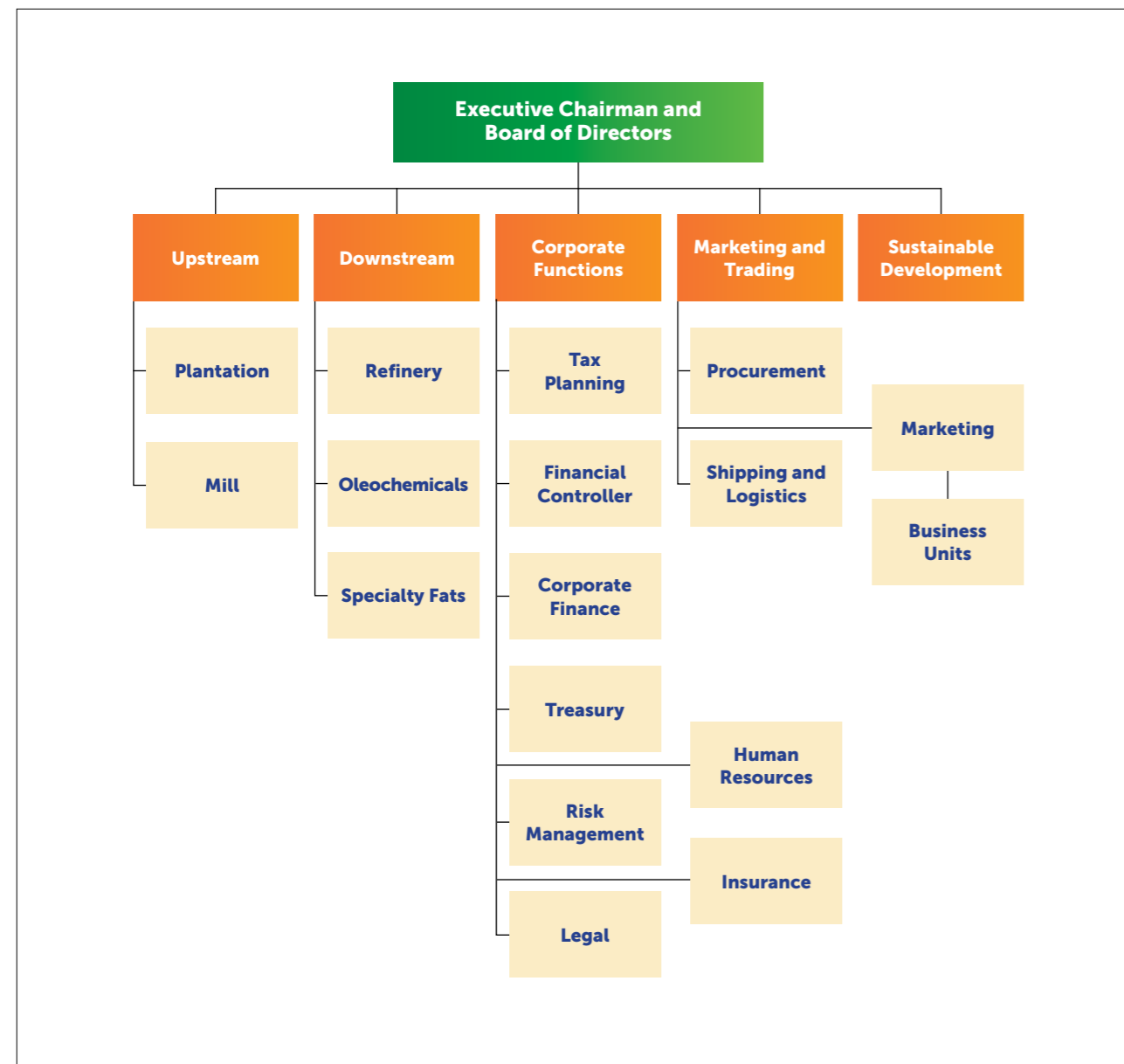
The Musim Mas Board of Directors ("Board") is composed of five members, led by an Executive Chairman. The primary functions of the Board are to pursue the continual growth of shareholder value, and to manage the Group in the best interests of shareholders and stakeholders.

The Board is committed to sustainability, and considers our commitments to environmental stewardship, human rights and community partnerships as central to our corporate integrity. When developing business strategies and operations, the Board ensures that material environmental,

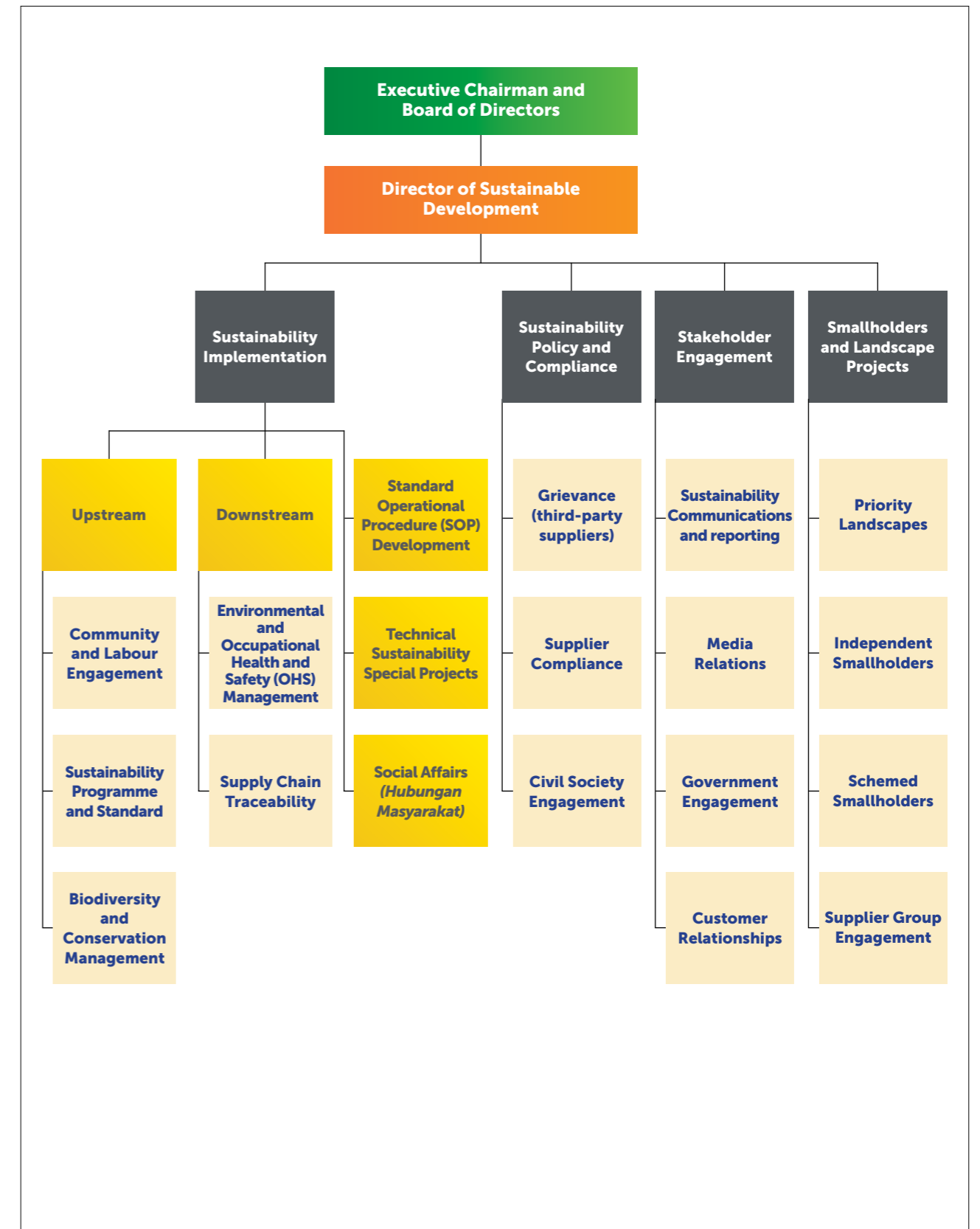
social and governance factors identified for the Group are taken into consideration.

Sustainability management is integrated in the Group's functioning and management structure and is overseen by the Board. Senior management meetings led by our Executive Chairman discuss ongoing sustainability matters: policy standards and compliance, sustainability management, labour, health and safety, traceability, and stakeholder engagement. The Director of Sustainable Development also provides monthly reports on these critical components directly to the Board.

### Organisational Structure



### Sustainability and Governance Structure



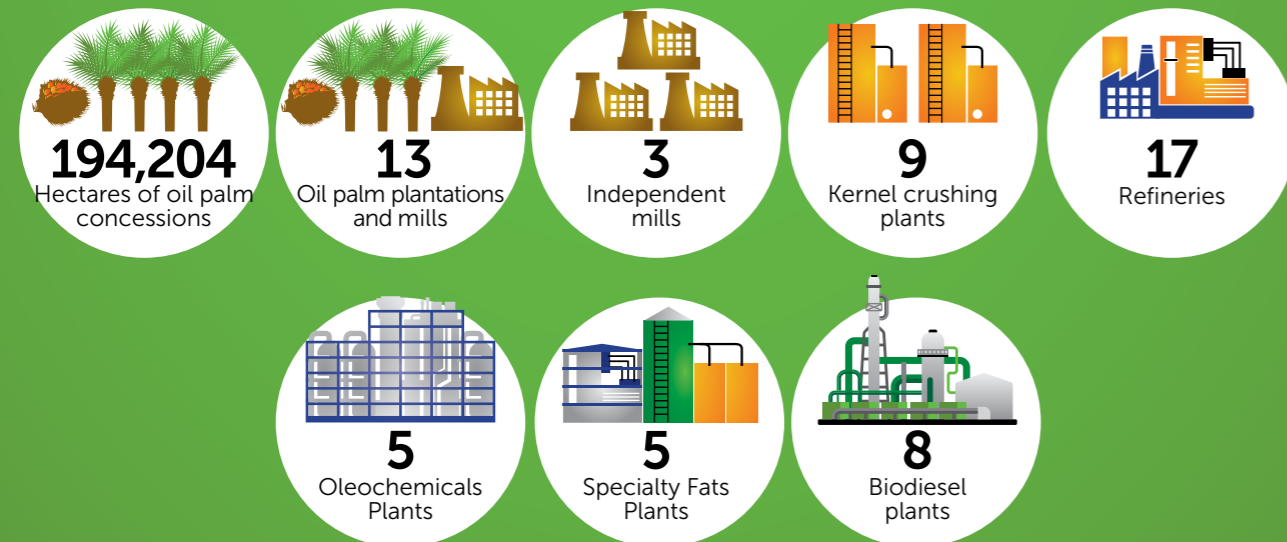
## ABOUT MUSIM MAS

### GLOBAL AND OPERATIONAL PRESENCE

We have a presence in strategic locations worldwide to serve the needs of our customers.

The global marketing activities of our Group are undertaken by Inter-Continental Oils & Fats (ICOF) Pte Ltd, headquartered in Singapore.

Our main operational base is in Indonesia and Malaysia.



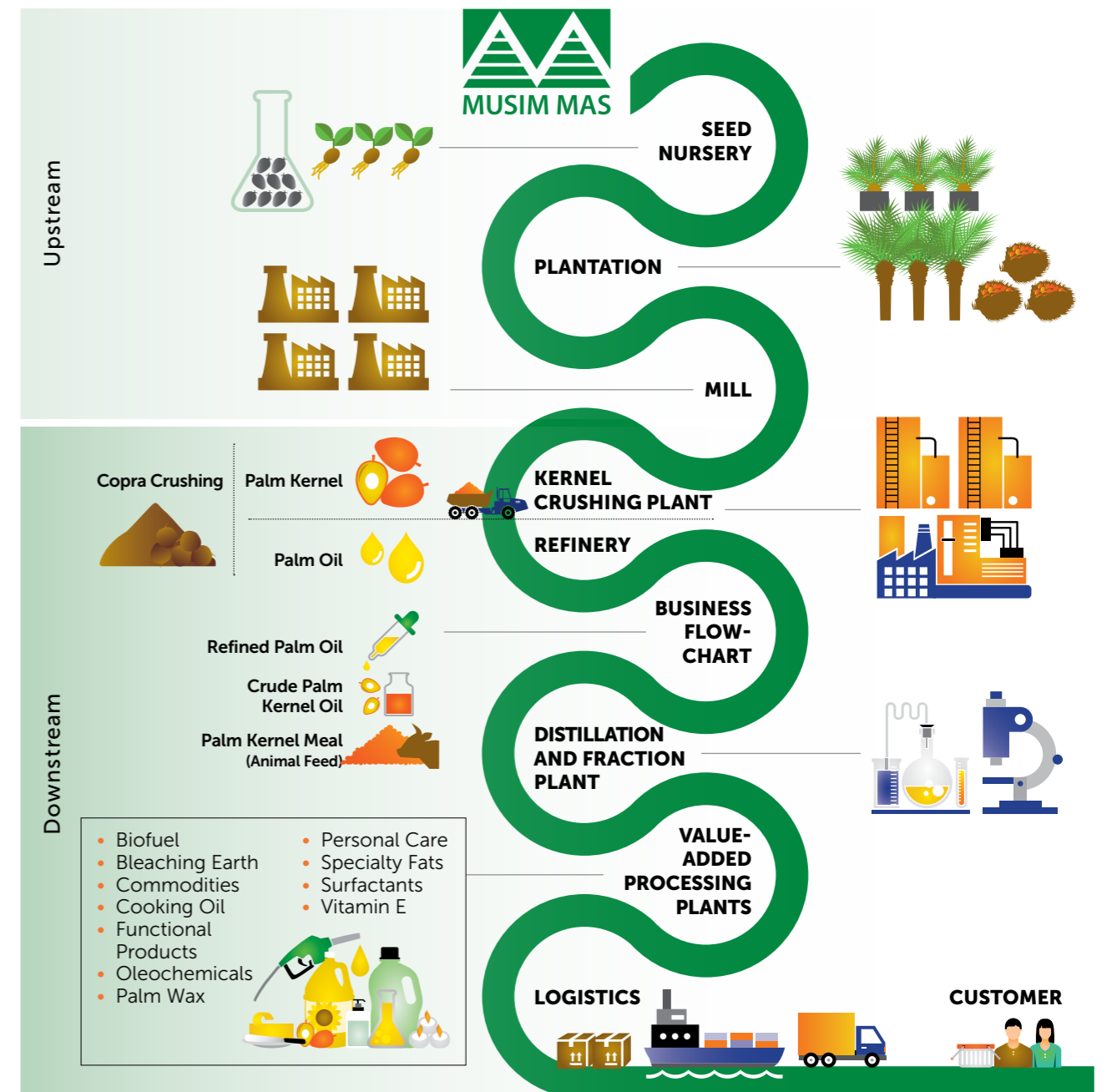
### DRIVING CHANGE THROUGH FULL VERTICAL INTEGRATION

Our vertically integrated business model supports us as we work to produce all our products in an economically viable, socially responsible and environmentally sustainable manner, in full compliance with all legal requirements.

manufacturing operations and the production of value-added palm products, all the way to the marketing and shipping of our products to global destinations. This business model enables us to manage a fully segregated supply chain of sustainable palm oil that is certified under the Roundtable on Sustainable Palm Oil (RSPO) standard, and to enhance accountability and traceability at every step.

Being vertically integrated means that we have a role at each point in the palm oil supply chain: from upstream oil palm plantations and downstream refining and

Learn more about our approach to traceability on page 29.



ABOUT MUSIM MAS

OUR OPERATIONS

Musim Mas plantations, mill and refinery operations

A list of our plantations can be found at our website, [www.musimmas.com/about-us/operational-presence](http://www.musimmas.com/about-us/operational-presence).

MUSIM MAS MANAGES

Total concessions  
**194,204** hectares

**84%** (made up of mature plantings)

**2.41** million tonnes of fresh fruit bunches (FFB) in 2017

INDONESIAN PROVINCES' CONCESSIONS

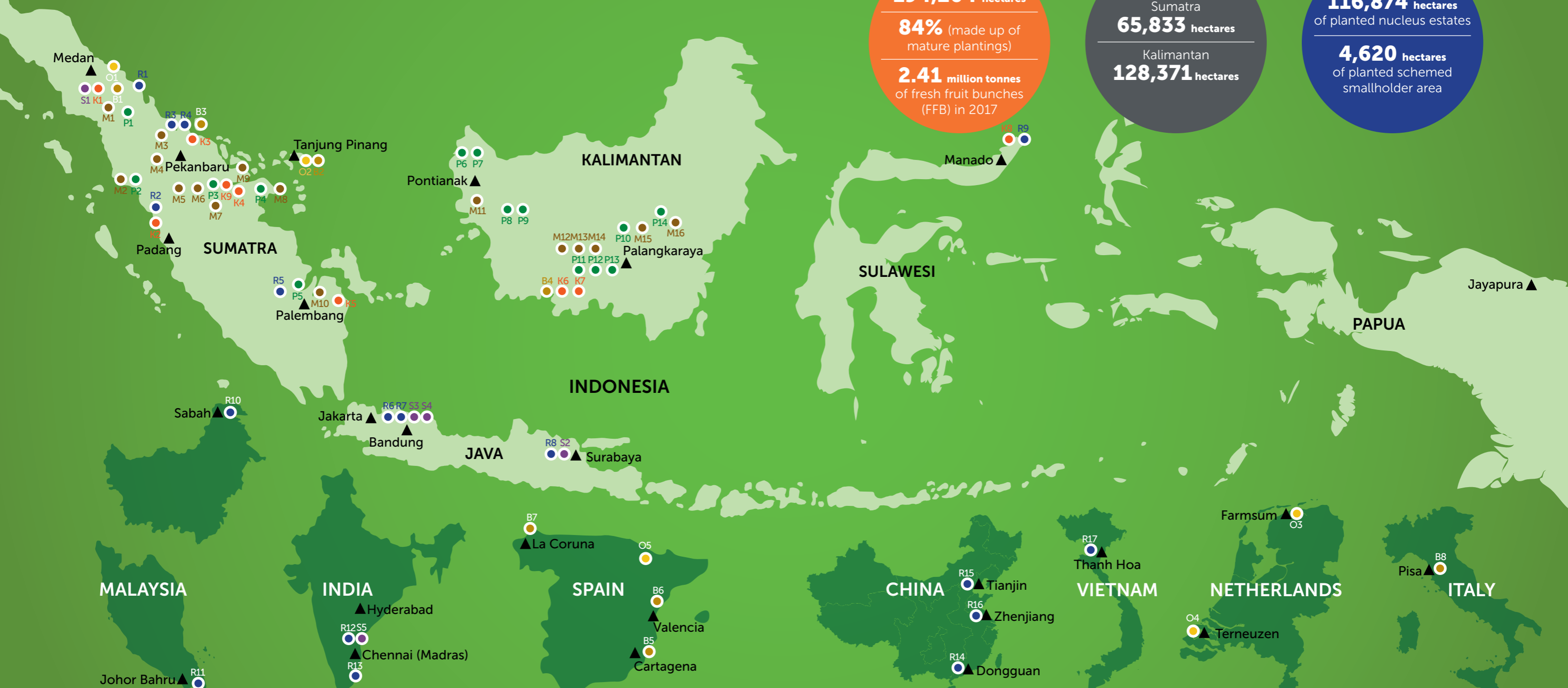
Sumatra  
**65,833** hectares

Kalimantan  
**128,371** hectares

OUR PLANTED AREAS

**116,874** hectares of planted nucleus estates

**4,620** hectares of planted schemed smallholder area



Legend

- Plantation
- Mill
- Kernel Crushing Plant
- Refinery (global)
- Oleochemicals Plant
- Biodiesel Plant
- Specialty Fats Plant

## ABOUT MUSIM MAS

### Plantations and mills

Musim Mas owns and manages plantations in the Indonesian provinces of Sumatra (65,833 hectares) and Kalimantan (128,371 hectares). We also have two concession in Papua which have undergone RSPO's New Planting Procedure (NPP) in 2013, although there are currently no plan to develop the land within these areas. We are exploring the possibility of working with other parties for conservation efforts. A list of our plantations can be found at our website, [www.musimmas.com/about-us/operational-presence](http://www.musimmas.com/about-us/operational-presence).

Since 2015, relatively few new plantings have taken place, namely 3,755 hectares in 2016 and 1,516 hectares in 2017, largely in Kalimantan. All of our new plantings adhere to NPP, which includes High Conservation Value (HCV) assessments and a Free, Prior and Informed Consent (FPIC) process, as well as High Carbon Stock Approach (HCSA) assessments to identify plantable areas and areas for conservation.

Our plantation operations comprise 116,874 hectares of planted nucleus estates and 4,620 hectares of planted schemed smallholder area. About 84% of this total planted area is made up of mature plantings. Together, these operations produced a total of 2.41 million tonnes of fresh fruit bunches (FFB) in 2017.

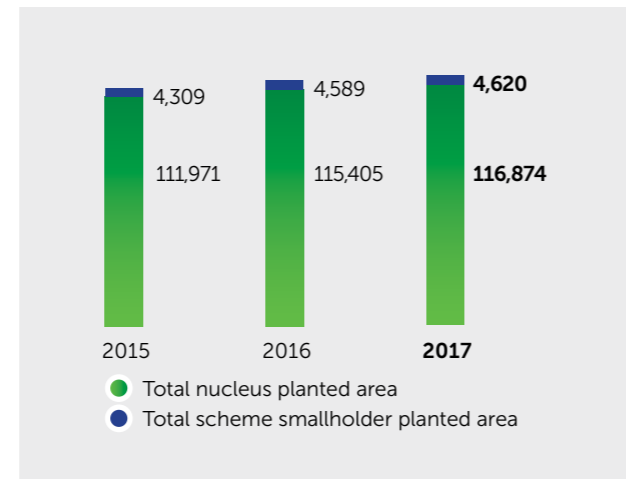
In addition to the FFB produced on our own plantations, we source around 3% of our FFB volume from schemed smallholders. All FFB sourced from schemed smallholders and independent smallholders is processed into crude palm oil (CPO) and palm kernel (PK) at our mills, alongside our own harvested FFB. Of our 16 mills, three mills are independent of plantations and only process FFB from independent smallholders. In 2017, 967,260 tonnes of FFB sourced from independent smallholders was processed by our mills, contributing 29% of our production base.

Of the FFB we harvest, we constantly work to enhance our productivity through sustainable management practices. Our own yield is inclusive of both our mature FFB and third year immature plantings ready for harvest. All around, FFB yield dropped in 2016 due to the drought caused by El Niño from the previous year which affected harvests across Southeast Asia, but we are pleased to see recovery of 11% for our yield and 6% for schemed smallholders in 2017.

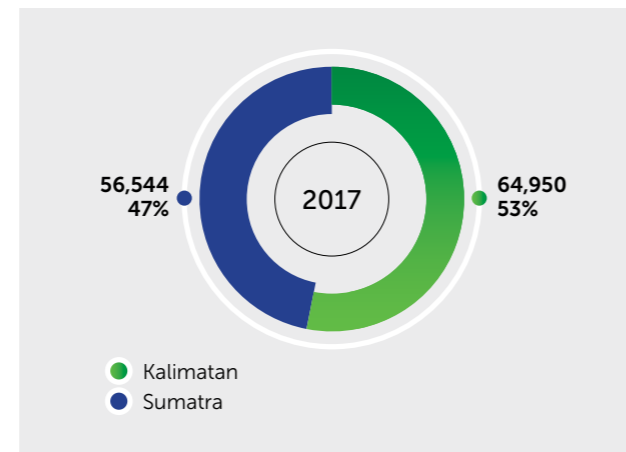
### Palm oil refineries and plants

Musim Mas is one of the largest palm oil refining and oleochemicals companies in the world. The scale of our operations ensures a reliable supply of raw materials, as

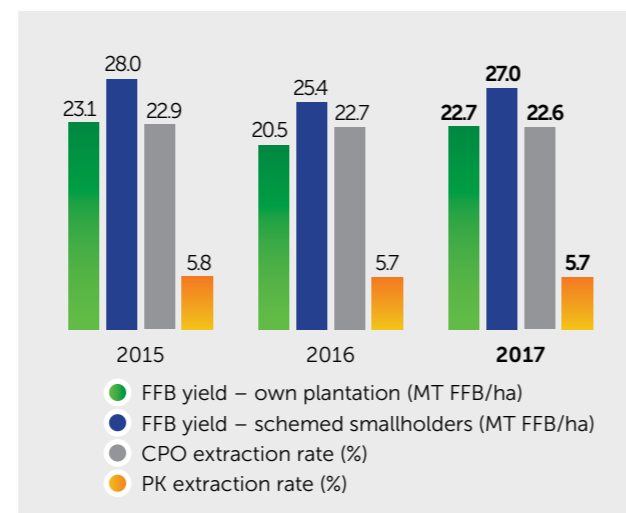
### Total planted area (ha)



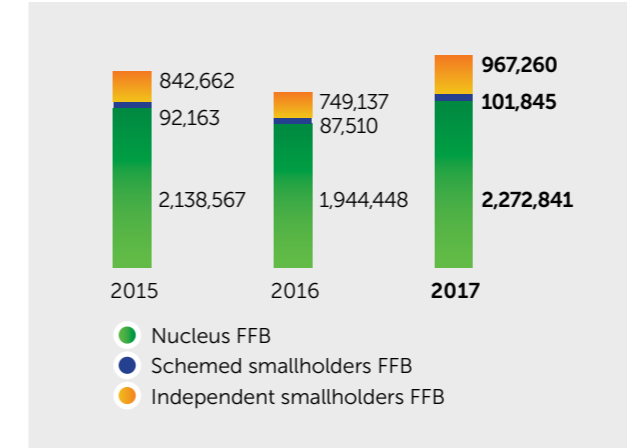
### Total planted area by region (ha,%)



### FFB yield and extraction rates



### FFB processed (MT)



well as an optimised logistical capability to deliver on all supply chain needs. Our palm oil refineries in Indonesia have a combined annual capacity of 8 million tonnes, while our kernel crushing plants – which process palm kernels into palm kernel oil (PKO) and palm kernel meal – have a combined annual crushing capacity of 2.5 million tonnes. We also operate a copra (coconut) crushing factory that processes dried copra into crude coconut oil and copra meal expeller, as well as biodiesel, oleochemical and specialty fats plants.

### Our marketplace

Our downstream operations process refined palm and palm kernel products into derivative products. These include specialty fats, soap noodles, oleochemicals, biofuels and functional products for industrial applications in food and non-food sectors worldwide. Every product is formulated and tested using stringent standards to achieve the ideal blend of performance and value to meet customers' needs. Due to our vertically integrated business model, we can also deliver these products through a fully segregated supply chain of RSPO certified palm oil.

### Products

#### Personal care and household products:

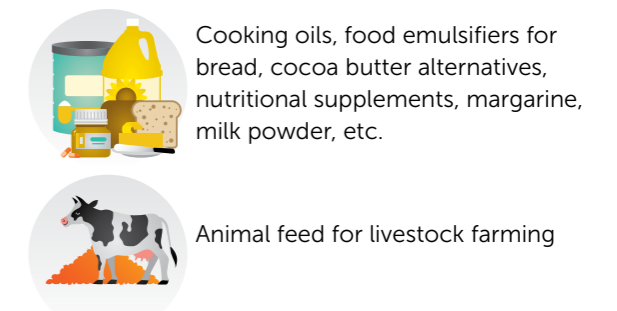
- Ingredients for shampoos, shower foams, bar soaps and cosmetics
- Ingredients for floor cleaners, detergents, etc.

#### Energy:



Certified biodiesel

#### Food:



Cooking oils, food emulsifiers for bread, cocoa butter alternatives, nutritional supplements, margarine, milk powder, etc.

Animal feed for livestock farming

#### Industrial:



Pharmaceutical ingredients, including lubricants and emulsifiers for capsules, surfactants for tablets, carriers for cough medicines, carriers for active ingredients in drips, etc.

Carriers for agricultural pesticides and herbicides

Lubricants and drilling fluids for metal working

Cross-linking agent for rubber compounds

Lubricants and antioxidants for plastics

Bleaching earth for palm oil refining





## CREATING SUSTAINABLE VALUE



## OUR APPROACH TO SUSTAINABILITY

We believe that the best strategy to ensure continued success is to conduct our business in a socially responsible, economically viable and environmentally sustainable manner throughout our operations and supply chains.

At the heart of our sustainability approach is Musim Mas' Sustainability Policy ("Policy"), which outlines our sustainability commitments under the three key themes:

- Bringing benefits to the community
- Promoting positive environmental impacts
- Full compliance with local and international laws

Published in December 2014, our Policy sets out a framework for the specific commitments we have made to no deforestation, no development on peat, no burning, respecting the rights of local and indigenous communities, and protecting the rights of workers. The Policy covers both Musim Mas' global operations and our third-party suppliers.

### OUR STRATEGY FOR IMPLEMENTING OUR SUSTAINABILITY POLICY

We work closely with our technical consultancy partners – Aidenvironment, Daemeter, Proforest and Rainforest Alliance – to advance and monitor the progress we make in implementing our Policy. Since the Policy's launch, we have gained broad experience in what it takes to implement our sustainability commitments on the ground. To summarise and build on this experience, we developed and released our [Sustainability Policy Implementation Plan](#) in June 2018. This plan formalises our existing approach to achieving positive impacts, as well as attaining our vision and goals for 2020.

Our implementation plan combines the following strategic approaches: our approach towards our directly owned and managed operations, our approach towards our third-party suppliers, our approach to smallholders,

and our approach to broader landscape-level and sector-wide interventions.

### Musim Mas Sustainability Policy commitments

Musim Mas declares that as a grower, miller, refiner, processor and supply chain manager, we will ensure that all of our own and our suppliers' operations:

#### Bring benefits to the community by:

- Respecting human rights including the rights of indigenous and local communities, families and other land tenure holders to give or withhold Free, Prior and Informed Consent (FPIC) for development and conservation of land and natural resources.
- Respecting the rights of all contract, temporary and migrant workers of all genders.
- Respecting and ensuring the inclusion of smallholders in the supply chain.

#### Promote positive environmental impacts:

- No deforestation of High Conservation Value (HCV) area and High Carbon Stock (HCS) forest.
- No development of peatland regardless of depth.
- Minimising the carbon footprint of our operations.

#### Fully comply with local, national and international laws

- Maintaining 100% RSPO certification of all our own plantations and mills.
- Encouraging and assisting our suppliers to achieve RSPO certification

Our full Sustainability Policy is available on the Musim Mas website at: [musimmas.com/sustainability/sustainability-policy](http://musimmas.com/sustainability/sustainability-policy)



Bring benefits to the community



No deforestation of high Conservation Value (HCV) areas and High Carbon Stock (HCS) forest



No development of peatland regardless of depth



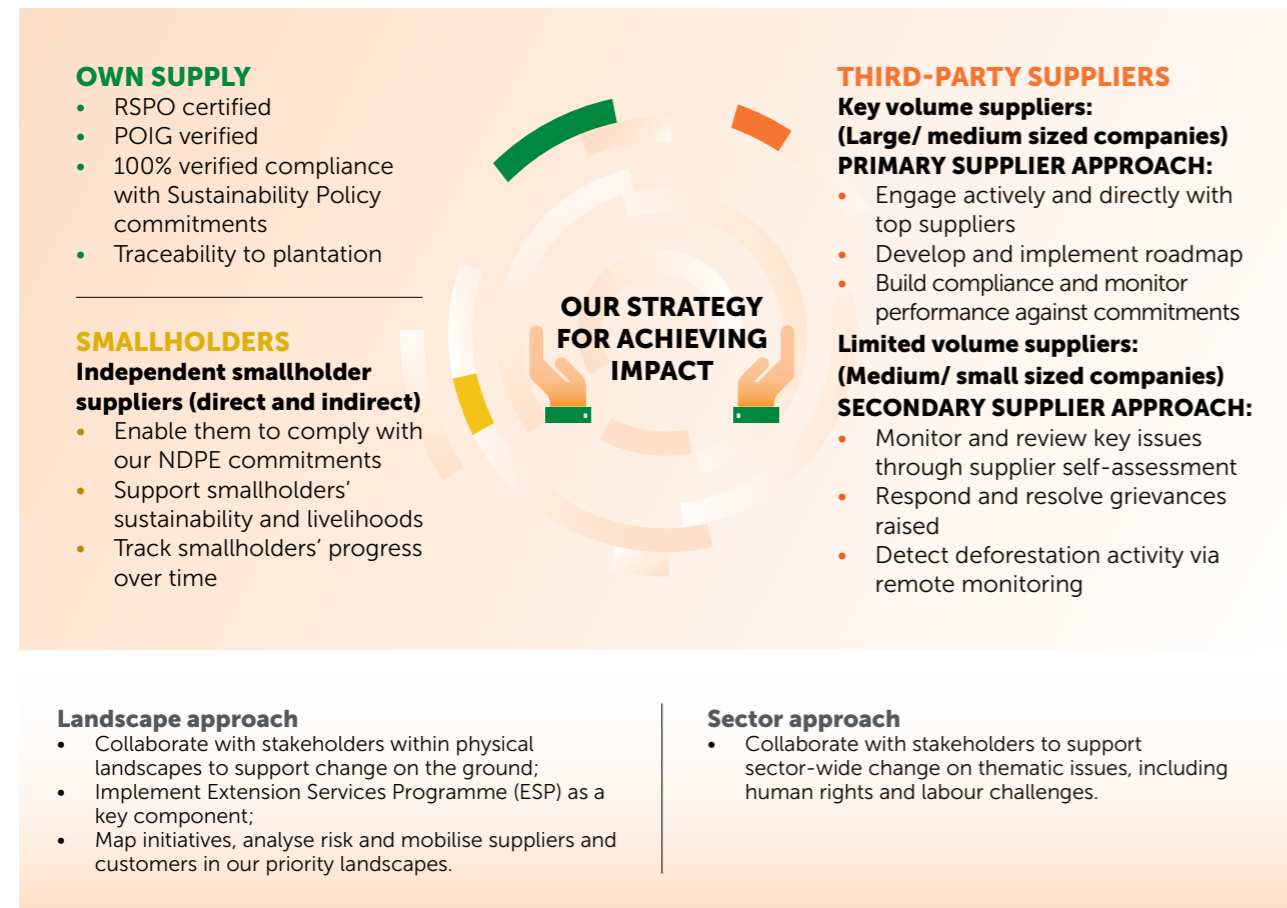
Fully comply with local, national and international laws



Establish traceable supply chain

## OUR APPROACH TO SUSTAINABILITY

### Policy Implementation Approach



**Own supply:** Compliance with leading certification schemes and benchmarks relevant to our industry is a key component of our sustainability strategy, and we strive to align our Policy practices and sustainability efforts with the most progressive principles and standards. This component is especially critical in our approach towards our directly owned and managed operations. Our implementation plan also requires full traceability to plantations for our own supply.

**Third-party suppliers:** As 90% of the palm oil we trade and process is supplied by third parties, we invest significant resources in improving traceability and supporting these players in adhering to our Policy requirements. Our approach towards third-party suppliers is to focus on positive engagement, delivering tailored solutions and direct technical assistance to build capacity, enhance performance and create momentum for change.

**Smallholders:** We run comprehensive programmes that empower smallholders to adopt the efficient farming standards used by large palm oil organisations.

**Landscape and Sector approaches:** We recognise that businesses, governments, suppliers and civil society actors have to work together to achieve real and lasting transformation. This is why we actively participate in a range of multi-stakeholder platforms and develop working partnerships with key stakeholders on landscape and sector-wide levels, to broaden our efforts towards a truly sustainable palm oil supply chain.

The following sections primarily expand on our approach for our internal operations. More information on our approach to policy implementation for third-party suppliers can be found on page 31.



All of our mills have achieved compliance with IT SNC as at April 2018.

### Roundtable on Sustainable Palm Oil certification

In 2012, Musim Mas became the first major group in Indonesia to achieve 100% certification against the RSPO Principles & Criteria (P&C) for all plantations and palm oil mills. In line with our Policy's commitments, we strive to maintain this status and certify all new mills within the first three years of operation.<sup>2</sup>

As at December 2017, 10 out of 13 Musim Mas mills are RSPO certified<sup>3</sup>, representing 139,184 hectares of certified plantation and schemed smallholder area. Two of the remaining three mills were commissioned in 2017, and have since achieved RSPO certification in the first quarter of 2018. The third mill (Sarana Esa Cita) was commissioned in 2016 and will be certified in 2020, pending the approval of its operations' permits (*HGU – Hak Guna Usaha*). We also completed the first five-year cycle of RSPO certification for eight mills during the reporting period. In addition, two mills are audited for their third five-year cycle of RSPO certification in September 2018.

### SUSTAINABILITY CERTIFICATION AND VERIFICATION

Musim Mas strives to conform to the most stringent sustainability standards. We have been active members of the Roundtable on Sustainable Palm Oil (RSPO) since its inception in 2004, and the RSPO standard is embedded at the core of our strategy for sustainable oil palm cultivation.

We have been working towards achieving 100% certification against the Indonesian Sustainable Palm Oil (ISPO) standard, mandatory for all oil palm companies in Indonesia since 2011, and the International Sustainability and Carbon Certification (ISCC) standard, an international sustainability certification for biofuels.

There has been much progress in the palm oil industry since our Policy was launched in 2014. Of particular note has been the advancement of the Palm Oil Innovation Group (POIG), a voluntary initiative developed jointly by private sector and non-governmental organisations to create and promote innovation in the sector. In keeping with the latest industry best practices, we have updated our Sustainability Policy to align with the [POIG Charter](#). We have also highlighted the POIG Charter criteria and, where possible, our progress towards compliance throughout this report.

Musim Mas also participates in the Programme for Environmental Performance Rating (PROPER),<sup>1</sup> an environmental information disclosure initiative overseen by the Indonesian Ministry of Environment. In addition, we are committed to adhering to the Italian National Certification System for Biofuels and Bioliquids (IT SNC).

All smallholders affiliated with Musim Mas are targeted to be RSPO certified under our smallholder cooperative programme, *Kredit Koperasi Primer Anggota (KKPA)*. The first group under KKPA attained RSPO certification in 2010 and became the first smallholder scheme in Indonesia to meet the criteria. Combined, our own plantations and our schemed smallholders (including the Village Development Programme) have an annual certified sustainable palm oil (CSPO) production capacity of 628,566 tonnes and 157,095 tonnes of certified sustainable palm kernel (CSPK). This represents about 6% of all RSPO certified palm oil in the market.

Thirty-five sites have achieved certification against the RSPO Supply Chain Certification (SCC) standard. The RSPO SCC scheme was developed to assure the end user of the integrity of RSPO certified palm oil. Under this scheme, Musim Mas is able to supply palm oil products under the Segregated, Mass Balance and Book & Claim supply chain models.

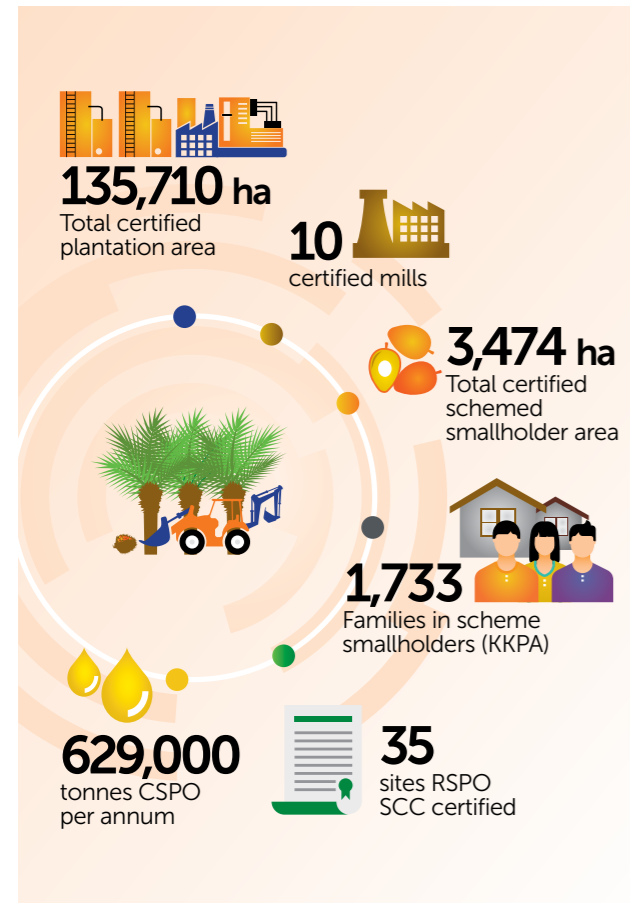
1 Under PROPER, the environmental performance of companies is mapped into a five-colour grading scale – Gold, Green, Blue, Red, and Black (in descending order). PROPER covers aspects such as air pollution control, water pollution control, hazardous waste management, Environmental Impact Assessments, community development, conservation management, energy efficiency, and marine pollution control – all of which are mandatory by law.

2 As one of our mills is still in the process of finalising its operations permits (*HGU – Hak Guna Usaha*), 100% RSPO certification for all mills with plantations is currently not possible.

3 Musim Mas owns and operates 16 mills in total. However, only 13 mills have plantations and are eligible to obtain RSPO P&C certification.

## OUR APPROACH TO SUSTAINABILITY

### Roundtable on Sustainable Palm Oil certification



#### POIG Charter 3.4 - RSPO certification and company operations

Producers shall meet a minimum of 50% of their plantations being RSPO certified upon commitment to the Charter, and a commitment to achieve 100% by within two years. This shall cover all palm oil operations, subsidiaries, acquisitions of existing plantation and fresh fruit bunch purchases from third parties, with possible alternatives to full RSPO certification for small independent producers.

#### Indonesian Sustainable Palm Oil

The ISPO system is a regulatory initiative adopted by the Ministry of Agriculture on behalf of the Government of Indonesia. The aims of the initiative are to improve the competitiveness of Indonesian palm oil in the global market, to contribute to national objectives to reduce

greenhouse gas (GHG) emissions, and to draw attention to environmental issues.

Musim Mas was one of the first companies to undergo the ISPO certification process. Our subsidiaries PT Musim Mas - Pangkalan Lesung (Riau), and PT Musim Mas - Batang Kulim (Riau), were the first two mills in Indonesia to meet the standard and were awarded the ISPO certificate in 2012. Since then, two more Musim Mas mills have attained ISPO certification: PT Agrowiratama in 2014, and PT Berkat Sawit Sejati in 2015.

In December 2017, all but two mills have undergone audits for ISPO certification and all plantations under the Musim Mas Group have undergone *Penilaian Kelas Kebun*, a pre-requisite for ISPO certification audits. The remaining two mills will be audited in 2018 and 2019.

#### International Sustainability and Carbon Certification

ISCC is an international certification programme for sustainable biomass and bioenergy production. It was established in 2010 to address socioeconomic sustainability of biofuels under the European Renewable Energy Directive (EU RED) 2009. The certification requirements include criteria on GHG emissions savings, sustainable use of land, protection of natural biospheres and social sustainability. ISCC certification is applicable to European markets as it complies with the EU RED and the German Sustainability Ordinances (BioNachV).

As of December 2017, all Musim Mas upstream operations have been audited against the ISCC standard. As of January 2018, all mills have completed ISCC certification.

#### Palm Oil Innovation Group and Verification

Musim Mas joined POIG in 2015, formalising our commitment to the Charter, and making us the first major Asian palm oil company to become a POIG member. The POIG Charter and its [indicators](#) build on the RSPO P&C 2013 to prevent deforestation, to prevent expansion on peatlands of any depth, to uphold human and labour rights, and to limit climate change. POIG members that cultivate oil palm must be independently verified as compliant with the POIG Charter and its indicators on an annual basis.

We began our journey towards POIG verification by engaging Verité to conduct a labour assessment in our plantations as a pre-requisite of the POIG verification audit. Subsequently, Rainforest Alliance carried out our first audit. The assessments were conducted between December 2016 and February 2017 at four mills selected as a sample to represent ten mills in different

geographical areas in Indonesia, each with multiple supply bases.

Following this initial verification audit, we developed an [action plan](#) to address the non-conformances and partial conformances identified. We underwent our second POIG verification audit in 2018, which entailed assessments conducted at four mills and the verification of our action plan to address non-conformances from the findings of our first POIG audit. The results concluded that we have made progress towards compliance in accordance with our action plan, and several non-conformances were verified as closed. We are currently working to close all remaining non-conformances, some of which have been highly dependent upon the progress of third-party assessments and have required an extended timeline.

In accordance with the [POIG verification audit requirements](#), Musim Mas must achieve POIG verification within 24 months of the approval of our action plan. We therefore aim to complete the POIG verification process by February 2019. If successful, Musim Mas will become the first company in Asia to be verified against the POIG Charter and the first in the region to supply POIG verified oil.<sup>4</sup>

The latest results of our POIG verification assessments, and further information on the status of any non-conformances and our POIG verification journey can be accessed on the POIG website at: [poig.org/the-poig-charter/poig-verification-assessments-reports/](http://poig.org/the-poig-charter/poig-verification-assessments-reports/)

As a POIG member, Musim Mas not only commits to implementing the Charter, but also to testing new innovations and advocating for these improvements to become the norm in palm oil production. Learn more about how we contribute to new solutions for labour rights issues on page 51.

#### POIG Charter 3.5 - Responsible supply chains

Producers shall independently verify and report on compliance with this Charter within 12 months of commitment to the Charter, across their operations, subsidiaries and acquisitions of existing plantation including FFB from third-party suppliers.

#### Building on the RSPO P&C: POIG Charter and verification indicators

The POIG Charter and verification indicators focus on three thematic areas: environmental responsibility, partnerships with communities (including workers' rights) and corporate and product integrity. Taken together, these core POIG documents support and build on the RSPO P&C 2013, providing a verifiable framework for signatories to demonstrate innovation in the implementation of existing RSPO standards, as well as in additional critical areas.



<sup>4</sup> POIG verified oil is defined as RSPO certified Segregated oil produced by a POIG verified member.

## OUR APPROACH TO SUSTAINABILITY

### POIG Charter and verification indicators: building on the RSPO standards

#### RSPO PRINCIPLES AND CRITERIA 2013



#### Corporate and Product Integrity

- Transparency and Corruption
- Traceability
- Report on Social, Labour and Environmental Performance
- RSPO Certification and Company Operations
- Responsible Supply Chain



POIG CHARTER

#### Environmental Responsibility

- Breaking the link between Palm Oil Expansion and Deforestation
- Peatland
- Greenhouse gas (GHG) Accountability
- Pesticides use minimisation
- Chemical fertiliser
- GMOs prohibition
- Water accountability
- Protect and conserve wildlife

#### Partnership with Communities

- Free, Prior, Informed Consent (FPIC)
- Food Security
- Effective Conflict Resolution
- Social Conditions
- Workers Rights
- Support Oil Palm Smallholders

More information on POIG, the POIG Charter, and its verification indicators can be accessed at: [www.poig.org](http://www.poig.org)



### RAINFORREST ALLIANCE COMMENTARY ON POIG VERIFICATION

By Lita Natasastra, Assurance Manager Asia Pacific, RA-Cert Division at Rainforest Alliance

Rainforest Alliance has conducted two POIG verification audits for Musim Mas. The first took place between the end of 2016 and early 2017, the second in early 2018. A report on the 2018 audit is still in process. In parallel with the second audit, we have verified the implementation of an action plan developed by Musim Mas in response to non-conformities identified in the first audit.

As an expert in this area, Rainforest Alliance provides commentary on the efforts of Musim Mas toward compliance with the POIG Charter and POIG verification. In 2017 and 2018, we also audited the company's third-party palm oil suppliers for compliance with the Musim Mas Sustainability Policy. No significant difficulties have been encountered while working with Musim Mas regarding preparation for audits, field visits, or finalisation of audit results. The company is easy to communicate with and adequately responds to requests or questions related to the work in progress.

Musim Mas's extensive experience with sustainable oil palm certification has made the POIG verification process easier. As well as being RSPO certified, all of the mills we visited for POIG verification were also ISCC and ISPO certified.

One of the Group's greatest strengths is that its operations, including mills and plantations, are designed to be environmentally sustainable in compliance with the above-mentioned certification schemes. The company also has a solid sustainability team with sufficient knowledge and skill to fulfil its role, which has ensured thorough documentation of the implementation of its social and environmental management system. Staff members have been readily available to answer our questions throughout the verification process, and all information provided has been consistent and reliable. Staff members are also quick learners and easily become accustomed to new certification standards and requirements.

Despite significant progress made on key requirements, it remains a challenge for Musim Mas to reach full

compliance with POIG. Issues such as HCS, GHG emissions, food security, participatory land use planning, water equity and full traceability to FFB sources may not be new to the company, but either they may not have been covered by the certification schemes used by Musim Mas or they may have been governed by different requirements. To comply with POIG, Musim Mas will need to complement, adjust, and in some cases change existing systems.

Securing government support for and establishing the economic benefits of certification are common challenges for POIG and other certification schemes. Most POIG requirements—especially those related to conservation—are either not yet (or not adequately) regulated by the Indonesian government. There is, for example, no regulation that accommodates the HCS forest concept when defining conservation areas. By implication, areas allocated for HCS conservation could potentially be categorised as areas neglected by the company and then be excluded from any future extension of a concession permit.

Concerns have also been raised that cost of certification could exceed any tangible economic benefit companies could expect by achieving compliance. While studies show that effective, embedded environmental and social practices can enhance business performance and protect against significant loss in value, it remains true that such good practices require consistent effort and not all companies are able to raise the bar.

Moreover, many companies that do fulfil certification requirements hesitate to change established systems, and they therefore rarely take the initiative to go beyond compliance. Initiatives to decrease GHGs offer a good example—most companies identify and calculate their emissions, but only a few set targets for reductions and adopt new technologies to reach them. Musim Mas has, however, taken this extra step.

The willingness of Musim Mas to join POIG, and the strong commitment to compliance this entails, demonstrate that the company is ready to go beyond what others have accomplished. Improvements were already evident during our first series of mill visits. Our verification process concluded that the company has identified the causes of non-compliances, has planned and taken necessary corrective actions to address root causes of non-compliance, and was able to close all non-compliances within a specified timeline.

Further, Musim Mas has established several practices that we consider particularly innovative. All its mills are

## OUR APPROACH TO SUSTAINABILITY

equipped with methane-capture facilities and methane-powered electricity generators. These supply sufficient electricity for the entire plantation operation and feed excess electricity into the national power grid, which is not common in Indonesia. In addition, all mills are equipped with solid decanter units, which enables them to produce dried decanter mass that can be used as organic fertiliser, reducing pollutants. In response to the issue of water equity, Musim Mas is monitoring its water consumption following the water footprint methodology.

Prior to 2007, where there is a legal requirement for oil palm development to facilitate establishing plasma smallholder schemes, Musim Mas implemented village oil palm development smallholding programmes for the benefit of local communities. These oil palm plantations were developed on community land owned by the village or under communal land rights that provide steady income to support village development.

Independent smallholders play an important role in Indonesian palm oil production, and they directly contribute to both positive and negative impacts on the environment. For this reason, we believe in the value of implementing such programmes in areas where independent smallholders operate, even if the company's mills in these areas do not have independent smallholders

in their supply chains. Such programmes can be considered as the Group's contribution to the palm oil industry beyond its business scope.

Musim Mas officially collaborates with the International Finance Corporation (IFC) to support independent smallholders and develop traceability systems that reach all the way to FFB sources. We observed the implementation of this programme at one of the Group's mills that currently includes independent smallholders in its supply chain.

We also look forward to observing the participatory land-use planning activities that will be implemented by the end of 2018 in all villages affected by Musim Mas operations.

### About Rainforest Alliance

*The Rainforest Alliance founded the SmartWood programme in 1989 to certify responsible forestry practices. Today the programme has grown to provide a variety of auditing services in forestry and agriculture. Rainforest Alliance certification and auditing services are managed and implemented within its RA-Cert Division. The team members included for the POIG verification process in Musim Mas have experience using the Sustainable Agriculture Network (SAN) Standard and POIG for oil palm plantations since 2014.*



## FOCUS ON PRODUCTIVITY AND YIELD ENHANCEMENT

Palm oil producers face a continuing challenge: to feed a growing global demand for edible oils without dramatically increasing the planted areas. At Musim Mas we have taken this challenge head on. Within our strategy for long-term economic viability, we have focused a significant amount of attention and efforts on enhancing FFB quality, implementing best practices, increasing FFB yields per hectare and improving oil extraction rates (OER).

One of the first steps has been to ensure the implementation of good agricultural practices in our own plantations, as well as provide technical support and training for our schemed and independent smallholders. Our strong focus on compliance with leading sustainability certifications in turn supports these efforts.

### Key activities

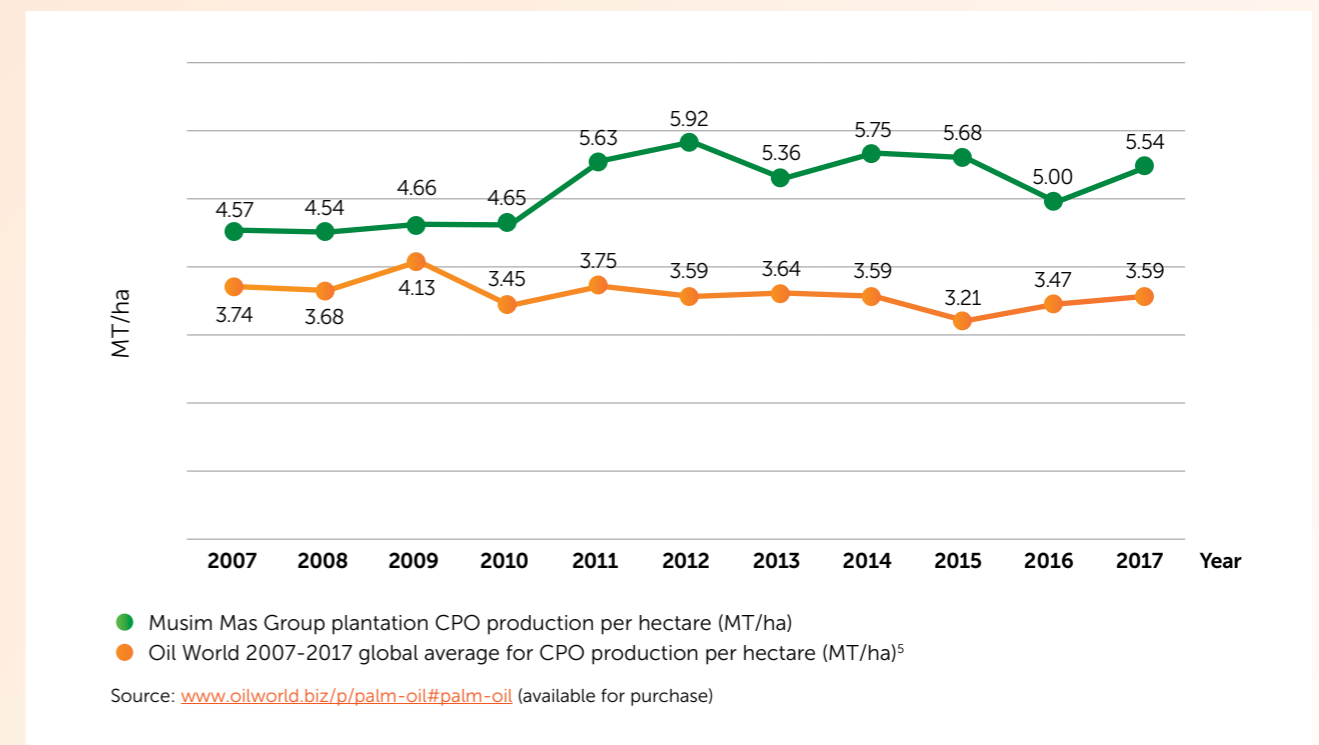
- **Research & Development (R&D):** Developing recommendations for scientifically based good agricultural practices related to fertiliser use minimisation, soil and water conservation, soil fertility and soil organic matter preservation, ground cover management and integrated pest and disease management with an emphasis on biological control.

- **Estates:** Ensuring the timely and efficient application of all inputs, reducing losses in the fields and implementing efficient crop recovery methods.
- **Mills:** Minimising losses during processing activities and investing in new technology and advanced equipment.

As part of our plans for improvement, we are also working to further intensify our land use by increasing our oil yield per hectare. Our plant breeding station, also known as the Genetic Research Centre, will aim to provide the most advanced and elite planting materials, individually tailored to be suitable for different environments to ensure we can generate optimal yields across all our Group plantations. We are currently testing materials and conducting trials across more than 500 hectares of our plantation area.

Our efforts to improve productivity have already shown results—and we remain confident they will continue to do so in the future. Our CPO production per hectare increased by 21% between 2010 and 2011 following intensive improvement programmes carried out at our estates and mills. In addition, between 2011 and 2017, our average CPO production per hectare has remained around 44% higher than the industry average.

## Musim Mas Group annual CPO production per hectare compared with global average of CPO production



<sup>5</sup> <https://www.oilworld.biz/p/palm-oil#palm-oil>

## OUR APPROACH TO SUSTAINABILITY

### KEY STAKEHOLDER ENGAGEMENTS AND PARTNERSHIPS

We aspire to be a catalyst for positive change in our industry, pushing the sustainable palm oil agenda forward by developing innovative solutions and by sharing best practices with our peers. But the efforts of one company alone are not sufficient. To achieve real transformation on

the ground, we must look beyond our own supply chains and work together with all stakeholders across the palm oil sector to tackle issues that impact both our industry and the global landscape at large.

Our main stakeholder collaborations and partnerships as of 2017 are outlined below.

Stakeholder initiative/ partnership	Description topics covered	Role of Musim Mas
<b>Multi-stakeholder platforms &amp; Initiatives</b>		
Consortium of Resource Experts (CORE)	Environmental risk assessments on a landscape-level, Implementation of intervention programmes for smallholders and suppliers, Overall implementation of Sustainability Policy	Working with CORE to meet Musim Mas' commitments on sourcing sustainable palm oil
Decent Rural Living Initiative by Forum for the Future (FFF)	Improving the protection of human and labour rights in agriculture by delivering practical and realistic recommendations to help rural workers secure their long-term ability to thrive	One of five companies participating in the initiative
Fire Free Alliance (FFA)	A voluntary, multi-stakeholder platform that contributes to the development of solutions to land and forest fires in Indonesia	<ul style="list-style-type: none"> <li>Founding member of FFA since 2016</li> </ul>
High Carbon Stock (HCS) Approach Steering Group	Methodology supporting no deforestation	<ul style="list-style-type: none"> <li>Member of the HCS Approach Steering Group since 2015, and member of its Executive Committee (HCSA decision-making body)</li> <li>Member of several Working Groups: Social Requirements, High Forest Cover Landscapes, Protection</li> </ul>
Indonesia Sustainable Palm Oil (ISPO)	Indonesian Government regulation and certification for sustainable palm oil production	<ul style="list-style-type: none"> <li>Co-lead for ISPO's Greenhouse Gas (GHG) Working Group</li> </ul>
Indonesian Palm Oil Development for Smallholders	Assisting independent smallholders in the surrounding of our operations in North Sumatra and Riau	Sole Indonesia-based partner with International Finance Corporation (IFC), a member of the World Bank
POIG	Multi-stakeholder initiative focused on responsible palm oil production verification and innovation	<ul style="list-style-type: none"> <li>Member of POIG since 2015</li> <li>Member of the POIG Organising Committee (POIG decision-making body)</li> <li>Chair of the Traders &amp; Processors Working Group, having led the development of the POIG Traders &amp; Processors Charter</li> <li>Member of various other Working Groups: Verification, Retailers &amp; Manufacturers, Communications</li> </ul>

Stakeholder initiative/ partnership	Description topics covered	Role of Musim Mas
<b>Multi-stakeholder platforms &amp; Initiatives</b>		
PONGO Alliance	Management and protection of orangutan habitats and that of other wildlife within oil palm landscapes	Pioneer member of the PONGO Alliance since it was launched in 2017
RSPO	Sustainable palm oil production certification and multi-stakeholder initiative	<ul style="list-style-type: none"> <li>Member of the RSPO since 2004</li> <li>Substantive member of the P&amp;C Review Task Force</li> <li>Alternate member for Indonesia Growers in RSPO Board of Governors</li> <li>Substantive member of various Working Groups: Smallholders, Biodiversity and High Conservation Values, Human Rights, Emissions Reduction (Co-Chair)</li> </ul>
Tropical Forest Alliance (TFA) 2020	Responsible growth without depleting natural capital	Member of the TFA 2020 since 2017
Aceh-APT – TFT (Leuser Ecosystem)	Multi-stakeholder working group under Areal Prioritas Transformasi (APTs) in Aceh Tamiang and Aceh Singkil	Member of Aceh-APT Working Group since 2017
Landscapes Working Group (IDH)	Multi-stakeholder working group focused on priority landscapes in Indonesia	Member of the Working Group
Tesso Nilo Taskforce	Multi-stakeholder programme involving government officials, the private sector and NGOs (including WWF), which aims to find solutions to addressing deforestation in Tesso Nilo National Park	Member of the Taskforce since 2016

### Academic/research partnerships

- Musim Mas Professorship Fund with the National University of Singapore
- Monitoring winged species in HCV areas with Princeton University
- Master programme HCV management with Oxford University
- Social impact and management in oil palm with Helsinki University, Universitas Riau (UNRI) and Institut Pertanian Bogor
- Collaboration with UNICEF for research on children's rights and development
- Doctoral Training Partnership Programme with Crops for the Future Research Centre and University of Nottingham Malaysia Campus
- Doctorate project on aqua biodiversity with Princeton University

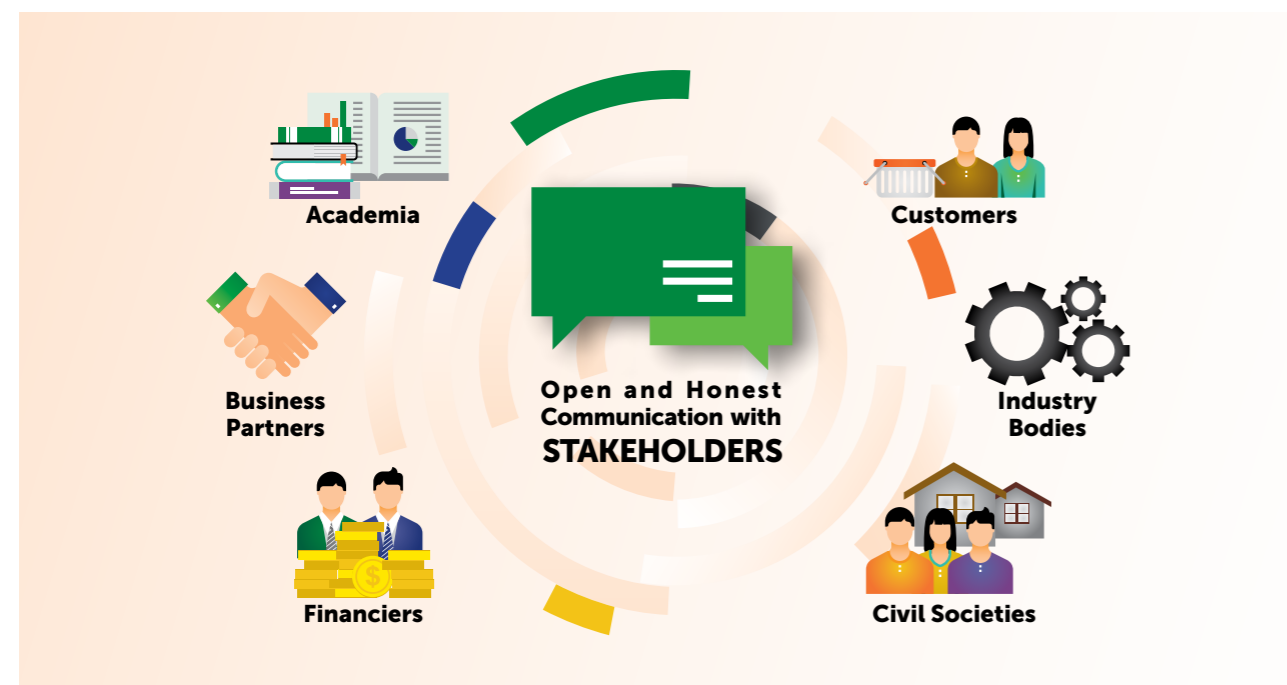
## OUR APPROACH TO SUSTAINABILITY

### Keeping our stakeholders informed

Ensuring stakeholders stay up to date on our activities is a priority at Musim Mas. To do this we use a range of communication platforms and materials:

- **Sustainability Journals (since 2011), annual Sustainability Policy Progress Reports (since 2015):** highlighting our achievements and milestones in relation to the implementation of our Policy commitments.
- **Sustainability reports:** starting in 2018, Musim Mas will publish a biennial sustainability report to keep our stakeholders informed on material environmental and social issues relevant to our sustainability governance.
- **Musim Mas website:** we provide comprehensive information on our activities to broader audiences through a dedicated sustainability [section](#) on our corporate website.
- **Annual Communication of Progress (ACOP):** we submit an ACOP to RSPO detailing our progress against the standard and the P&C.
- **Grievance system:** all external grievance cases lodged through our online [Grievance Mechanism](#) are made publicly available on the Musim Mas website. Stakeholders are kept abreast of complaints related to Musim Mas or our suppliers that have been submitted to the RSPO Complaints Panel through the [Status of Complaints](#) section on the RSPO website.

Musim Mas also maintains regular direct engagement with its key stakeholders:



### Environmental, social and governance ratings & sustainability rankings

As a large palm oil company, we are subjected to significant public scrutiny on the environmental and social impacts of our business. Public assessments provide us with a valuable opportunity to identify areas where we have done well, and areas where we need to improve.

The Zoological Society of London's Sustainable Palm Oil Transparency Initiative (SPOTT) regularly assesses our transparency and accountability, and we achieved a score of 67.8% in 2017. Although this places Musim Mas in the upper percentile range (>66%), our plan to have a sustainability report will significantly improve our score in 2018 and 2019.

Our performance has also been benchmarked and/or rated by the following assessment platforms:

- Forest Heroes – [Green Tiger Rankings](#)
- CDP (formerly Carbon Disclosure Project) – [Climate Change and Forestry Programs](#)
- Global Canopy Programme – [Forest 500](#)
- EcoVadis – [Supplier Sustainability Ratings](#)
- Indonesia's Ministry of Environment rating award – [Programme for Environmental Performance Rating \(PROPER\)](#)



### SUSTAINABILITY GOVERNANCE AND ETHICS

Our Sustainability Policy and POIG membership commit us to conduct business in a fair and ethical manner, and to prohibit all forms of corruption and bribery. We do not permit our employees or those working on behalf of Musim Mas to accept or give out any facilitation fees, gifts or entertainment of any valuable monetary value to any party for business profit, or permit other transactions that may create a conflict of interest. Nor do we make any charitable donations in order to get business offers or to gain benefits from decision makers. Our specific commitments and requirements are set out in our Code of Business Conduct and internal Anti-corruption Policy. Our Anti-corruption Policy is socialised to all Musim Mas employees in Bahasa Indonesia together with our other company policies.<sup>6</sup>

Launched in 2016, our Grievance Mechanism enables stakeholders – including our employees, local communities and NGOs – to report concerns about our own operations and our supply chain so that we can assess and resolve issues efficiently. We offer access to independent expert advice for the affected parties and maintain a list of experts

at all our operations, including independent legal and technical experts and local government and community representatives.

Our grievance process obliges us to respect and protect the anonymity of the complainants to prevent any potential conflict or reprisal. Stakeholders may provide information anonymously using a form on our website, by letter or by SMS. The availability of these complaints channels is also communicated on signs at our plantations and mills.

This integrated system<sup>7</sup> ensures a robust and fair approach towards receiving and addressing complaints, including those linked with our third-party suppliers. It incorporates a 'controlled purchase' mechanism that enables us to set up incentives for our third-party suppliers, based on their progress in resolving specific grievances. See page 32 to learn more about our step-wise approach in activating the mechanism.

#### POIG Charter 3.1 - Transparency and corruption

Producer companies shall publicise a commitment to prohibit any form of corruption including during the concession acquisition process and within their operations, and support efforts to establish and comply with anti-corruption legislation where this exists. In the absence of anti-corruption law, the producer company shall implement other anti-corruption measures proportionate to scale and intensity of management activities and the risk of corruption.

#### POIG Charter 2.3 - Effective conflict resolution

A balanced, accountable, mutually agreed and documented conflict resolution system is established that is accessible to smallholders, indigenous peoples, rural communities and other affected parties in order to deal with complaints and grievances and resolve conflicts to the mutual satisfaction of the parties. The system will include the option of access to independent legal and technical advice, the ability for complainants to choose individuals or groups to support them and/or act as observers, as well as the option of a third-party mediator.

<sup>6</sup> Our Anti-corruption Policy can be made available to our external stakeholders upon request.

<sup>7</sup> The integrated procedure introduced in 2016 builds on an existing grievance mechanism that was already in place at our sites of operation.

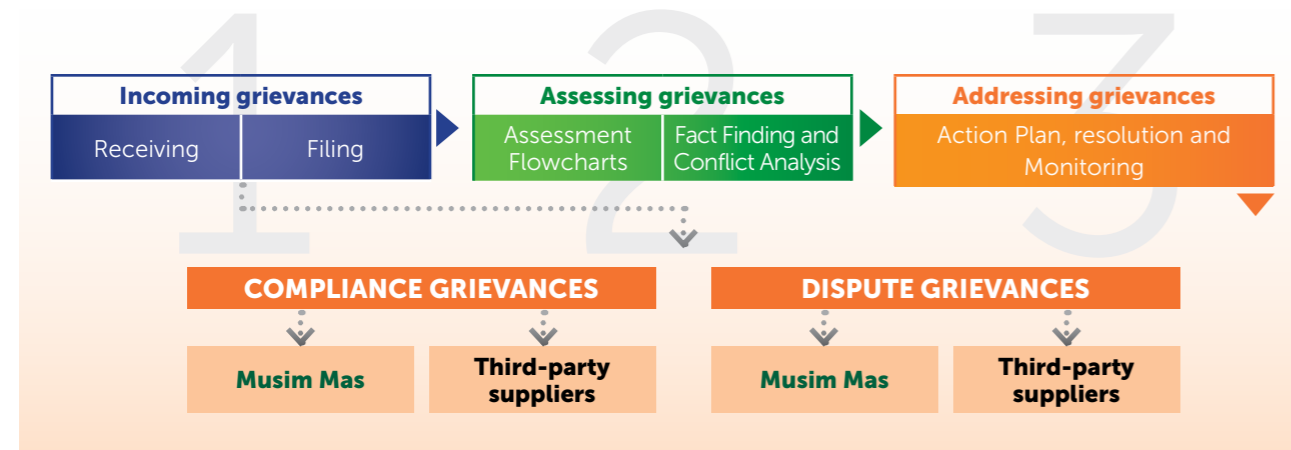
## OUR APPROACH TO SUSTAINABILITY

### Grievances

We divide grievances into two main categories: compliance grievances and dispute grievances. Compliance grievances may involve breaches of our Sustainability Policy, the RSPO Standards and/or the POIG Charter. Dispute grievances may involve conflicts between two or more parties. Under each of these categories, grievances are further divided into complaints against Musim Mas and complaints against our third-party suppliers. The category under which each grievance is filed determines the approach we take towards assessing it.

### Musim Mas Group

Grievance Mechanism – Step-wise approach for handling grievances



Details on the assessment approach we employ for each category are available at: [www.musimmas.com/sustainability/grievance](http://www.musimmas.com/sustainability/grievance). Further information on how we address internal grievances can be found on page 57.

### Grievances in 2017

As at December 2017, a total of 23 grievance cases have been submitted by external stakeholders through our Grievance Mechanism. The majority of the cases are related to deforestation and social conflict. Out of the 23 cases received, 22 are complaints related to our third-party suppliers, while one case was directly related to Musim Mas. The case directly related to Musim Mas was filed in 2017 and closed in 2018.

We are working closely with our suppliers to remain updated on the progress of the open cases related to third-party suppliers, and to provide support in finding tailored solutions and developing action plans for resolving the grievances. Certain Policy breaches or continued non-action, can lead to a suspension in business relations. As at December 2017, Musim Mas has ceased business relations with seven third-party suppliers due to unresolved grievance cases.

Nature of grievance cases	Total grievance cases received (as at 31 December 2017)
Deforestation	8
Social conflict	5
Human rights	1
Deforestation/Social conflict	5
Deforestation/Human rights	3
Deforestation/Social Conflict/Human Rights	1
<b>Total</b>	<b>23</b>

Note to data: grievance data excludes internal grievances and complaints.

A full list of grievances submitted by external parties, as well as the details for each case, is available at: [www.musimmas.com/sustainability/grievance/grievance-list](http://www.musimmas.com/sustainability/grievance/grievance-list)

### ENSURING A TRACEABLE SUPPLY CHAIN

In line with our sustainability strategy, Musim Mas is working towards a fully traceable and transparent supply chain. Traceability serves as a technique to list and map out our entire supply chain, as well as any associated environmental and social risks. We employ two approaches in mapping the supply base of our processing facilities; traceability to mill and traceability to plantation.

### Traceability to mill and plantation

Traceability to mill refers to the traceability level of products processed by the refinery, right down to mill or CPO/PK level. The data is derived from the amount of traceable product divided by the total amount of products received by the refinery. For a mill to be considered traceable, we require the parent company name, mill name and address, and the volume of its products procured for our facility.

Traceability to plantation refers to the traceability level of products right down to plantation. For a plantation to

be considered traceable, we require the company name, plantation name, the coordinates of the plantation, the capacity of the associated mill, and the size of the concession.

### Traceability as at December 2017

As at December 2017, we can trace 100% of our supply base of CPO to mill level, and 53% of our supply base of CPO to plantation level. We have 604 individual third-party supply mills that belong to 248 parent companies, including our suppliers from Malaysia and Indonesia. Indonesia accounts for 98% of our supply base, while Malaysia accounts for the remaining 2%.

We provide annual updates on the progress of our traceability work in our Sustainability Policy Progress Reports, which are made available on the Musim Mas website. More details on our progress as of December 2017 can be found in our [2017 Progress Report](#).

### Musim Mas palm oil supply base

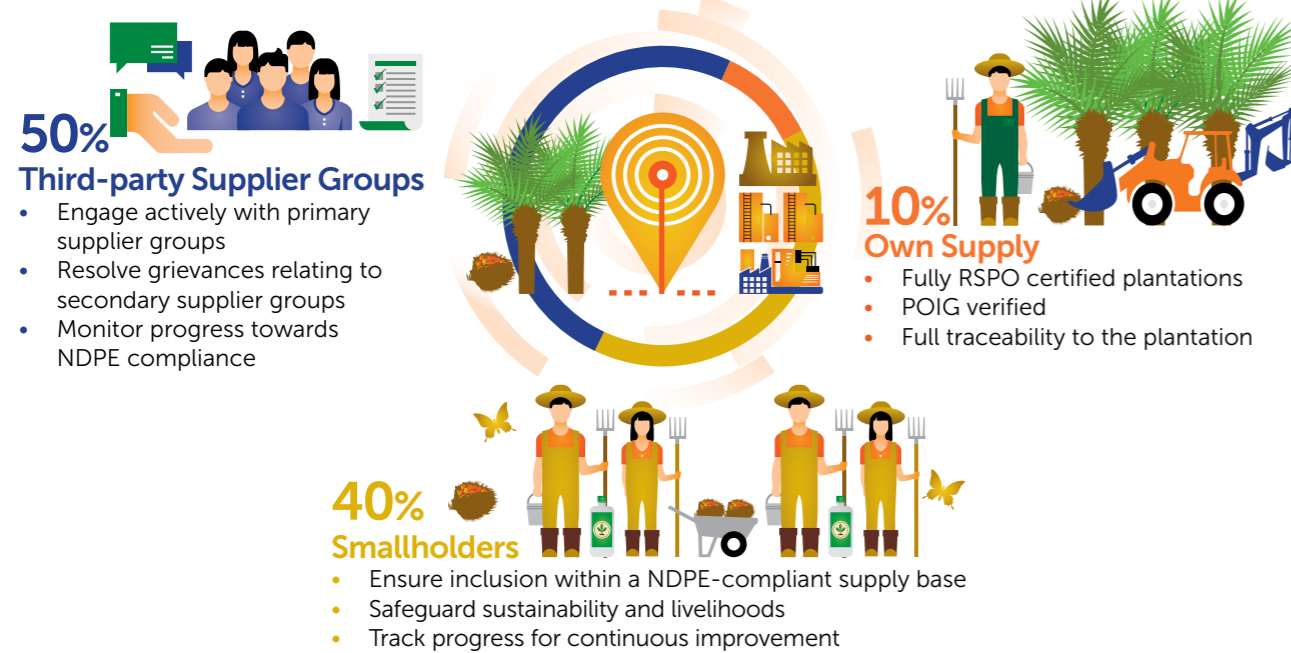


We have also published the [list of our CPO and PK suppliers](#), as well as our third-party suppliers' GPS coordinates on the Musim Mas website. Our supply chain map can be accessed at: [www.musimmas.com/sustainability/traceable-supply-chain/supply-chain-map](http://www.musimmas.com/sustainability/traceable-supply-chain/supply-chain-map)



## OUR APPROACH TO SUSTAINABILITY

### Ownership profile of supply base



#### POIG Charter 3.2 – Traceability

Within 12 months of commitment to the Charter, all supply is fully traceable from company plantation and other suppliers' fields to their mills. Each party shall take responsibility for traceability in the components of the supply chain under their control and transparency with their supply chain partners.

#### Using traceability data to prioritise engagement with suppliers

At Musim Mas, the traceability to plantation approach is used as a tool to identify ownership profile, since our definition of a third-party supplier is a supplier group of palm oil companies with related ownership.

Recognition of ownership is a more pragmatic and efficient way to engage with supplier groups' mills and support them to improve management practices. Our transformation efforts are most effective when they work 'top-down'. If we can convince the top management of the supplier group to embark on a sustainability journey, we can cascade changes through the chain of command to the group's network of plantations and mills throughout Indonesia.

#### Addressing key challenges for traceability to plantation

One of the key challenges with the traceability to plantation approach is being able to trace back the

ownership of the land in the case of smallholders, and especially independent smallholders.

Where a mill's supply chain has its own plantations, third-party plantations, farmer cooperatives, or a trans-migrant farmer programme initiated by the government, traceability to plantation is possible as the entire registration process in the Regional Plantation Office (Dinas Perkebunan) or National Land Agency (Dinas Pertanahan) is clear. In the case of independent smallholders, identification must be carried out by Musim Mas independently, as most are not registered with the government department. A large percentage of smallholder crops is produced by independent smallholders which adds to the complexity.

Musim Mas has taken an approach whereby third-party suppliers are trained and assisted to conduct mapping and traceability activities. This is a long-term commitment as part of Musim Mas's commitment to sustainable development, as well as livelihood enhancement for independent smallholders, who make up a significant portion of the industry.

Musim Mas understands the complex nature of traceability in the palm oil industry, and that we cannot solve all of the challenges associated alone. We are collaborating with external stakeholders, other plantation companies, government agencies, donor organisations, NGOs, and consultants to maximise positive impacts within the landscapes where oil palm is grown.

### SUSTAINABILITY POLICY IMPLEMENTATION FOR THIRD-PARTY SUPPLIERS

In order to drive real change, we believe it is crucial to actively engage with our suppliers and provide them with the appropriate support to implement our Policy. We have developed two levels of engagement: our primary supplier and secondary supplier.

Although the engagement plan for each supplier will vary, the key steps and process that Musim Mas follows are:

- Development of a supplier profile
- Evaluation of the supplier profile and level of compliance with our Sustainability Policy
- An action plan (for suppliers with no grievance)
- Controlled Purchase plan (for suppliers with grievances)
- Ongoing monitoring and evaluation
- Evaluation of resuming trading relationship

#### Primary supplier approach

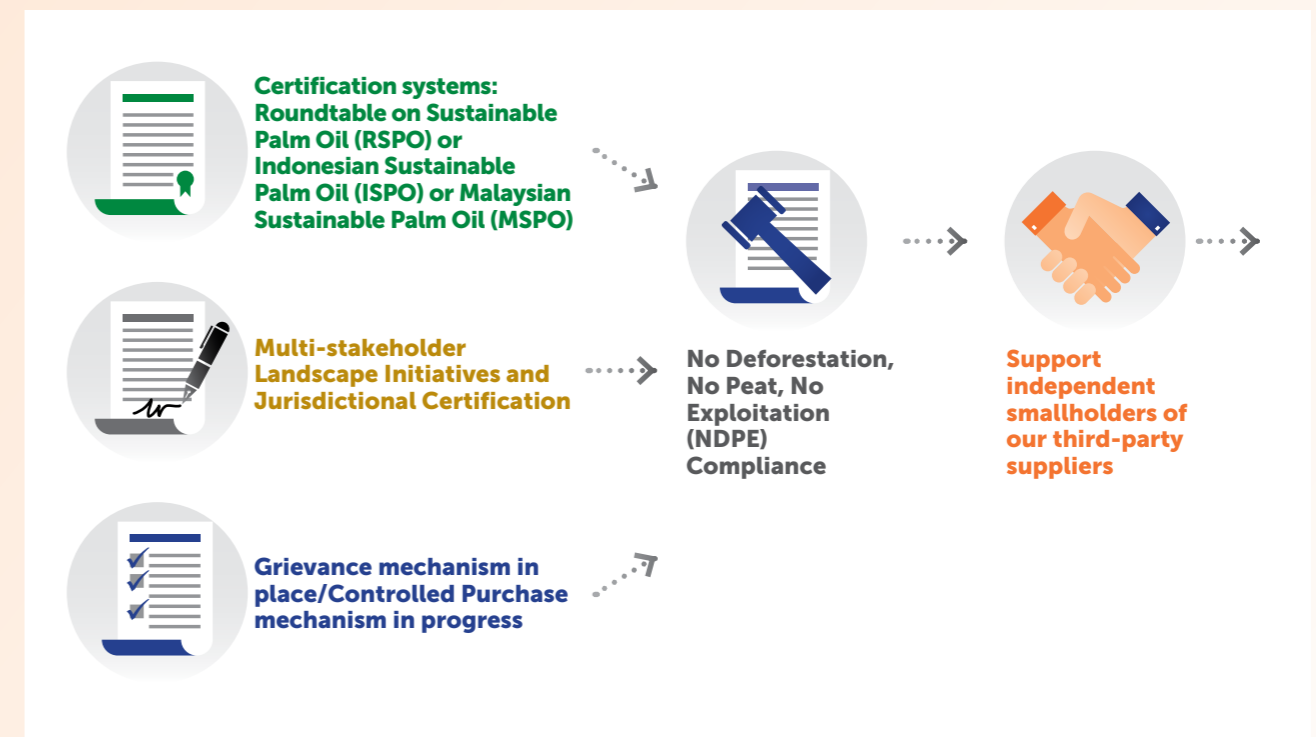
Under our primary supplier approach, we select target key volume suppliers – usually medium and large plantations – based on total procurement volume and strategic commercial partnerships. A roadmap with implementation milestones serves as the basis for our engagement, and this provides the framework for a time-bound plan for demonstrating and monitoring compliance

with our policy provisions by 2020. As each supplier is generally at a different stage on their sustainability journey, the entry point, action plan and associated timelines vary. While we encourage our suppliers to achieve RSPO certification, and assist them wherever possible, we also understand that this level of certification may not always be feasible for them in the short-term.

We have also established additional tools to aggregate information and measure the progress of our suppliers towards Policy compliance:

- Group-level supplier profiles:** detailing company operations and potential sustainability risks to identify roadmap entry points.
- Independent third-party site verifications:** driving understanding and Policy compliance among third-party FFB and oil suppliers (conducted on a sampling basis).
- Supplier self-assessment tool:** facilitating the identification of potential risks at mill level.
- Remote monitoring of supplier concessions:** monitoring evidence of deforestation activity.
- Due diligence on prospective suppliers:** conducted prior to onboarding.

### Roadmap for supplier Policy compliance



## OUR APPROACH TO SUSTAINABILITY

We engaged with all 14 of our main suppliers on a group level in 2017, and prioritised mills within particular landscapes for these groups. We conducted mill verifications on at least one mill for every 10 supplier parent company groups. Moving forward, we will make capacity building tools and training available to suppliers to support their progress along the roadmap.

### Secondary supplier approach

Our secondary supplier approach aims to address any evidence of non-compliance with Policy commitments. This approach includes:

- **Risk assessments:** evaluating geospatial landscapes for potential risk to Policy compliance. To date, assessments have been conducted in Riau, South Sumatra, Central Kalimantan, which have also been identified as our priority landscapes.
- **Awareness training:** increasing suppliers' knowledge about sustainability related risks and best practices. As of December 2017, supplier workshops have been conducted for more than 100 companies.
- **Remote monitoring:** monitoring suppliers' concessions via satellite imagery for evidence of deforestation activity.

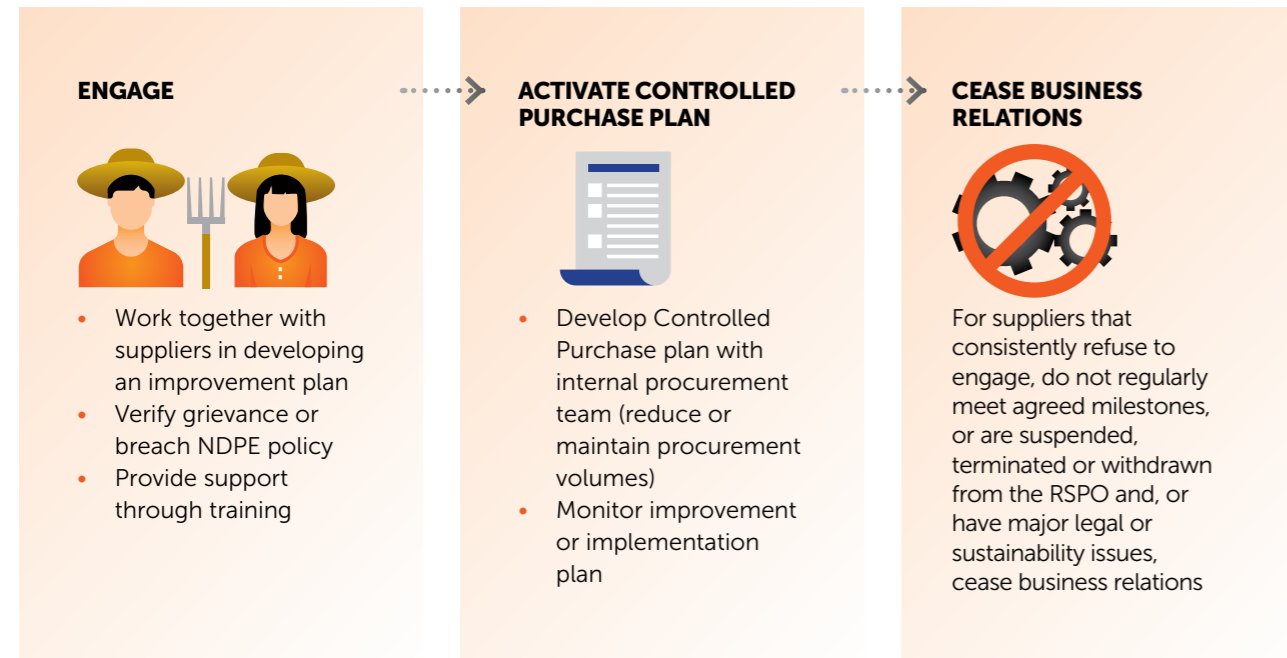
We work closely with our consultant, Aidenvironment, who provides a bi-monthly update on deforestation cases, and we conduct follow-up engagement with specific suppliers based on the results of these reports.

- **Grievance management:** resolving supplier grievances through our Grievance Mechanism.
- **Media monitoring:** identifying sustainability concerns raised in relation to our suppliers.

### Managing Policy breaches

We do not knowingly source from suppliers who refuse to comply with, or are found in breach of, our Sustainability Policy commitments. However, we do invest resources in working towards finding solutions with any suppliers that may have demonstrated non-compliance to our No Deforestation, No Peat, No Exploitation (NDPE) Policy. We believe that continued engagement in such cases is important for sector transformation. We take a stepwise approach towards managing incidents uncovered during our engagement and verification processes, as well as those brought directly to our attention through our Grievance Mechanism.

### Managing Policy breaches process



We engage with third-party suppliers that have grievances in an effort to address their sustainability concerns. This may lead to an action plan developed together with the supplier, which we use to monitor their progress based on defined timelines and goals. If the supplier fails to implement the plan, we inform them of our intention to 'stop purchase'. We then enact the 'stop purchase' if the supplier continues to take no action.

Further engagement occurs only if the supplier makes contact and can prove that agreed actions are being taken. Musim Mas will then support the supplier in line with the previously agreed action plan and milestones. Once the milestones are achieved, the Controlled Purchase mechanism is withdrawn and normal trading relations resume.

The following criteria guides the Group's decision to engage in a 'stop purchase' with suppliers:

- **Critical legal violation:** immediate suspension in cases of severe human rights abuse, use of child labour, or imminent endangerment of human life.
- **Repeated refusal to engage:** supplier shows no intent to engage within a six-month period
- **Repeated failure:** supplier consistently does not follow recommendations/implementation of remedial action over a six-month period
- **Withdrawal/termination of RSPO membership**

### Landscape initiatives and sector approaches

Musim Mas collaborates with other stakeholders within priority physical landscapes to support change on the ground. These landscape initiatives involve the mobilisation of projects and programmes with suppliers and other key stakeholders, including governments.

Our Extension Services Programme (ESP) also plays an important role in priority landscapes. Recognising that deforestation activities may be driven by basic needs, the ESP provides smallholders with alternative means to improve their livelihoods, thereby minimising sustainability risks.

In 2017, we made progress with stakeholder groups in several priority areas. Initiatives included a multi-stakeholder taskforce addressing deforestation in Riau, and jurisdictional programme in Aceh. In each case, we have engaged multi-stakeholder platforms and technical consultants to support our work in these landscapes.

More information on the latest progress of these landscape initiatives is available on page 38.

### Priority landscapes



Engage the multi-stakeholder platforms in the priority regencies.



Commit to the platforms with the local governments (bupatis) via signing of MOUs.



Enlist the help of technical consultants support these platforms.

Our sector approaches involve supporting sector-wide transformation together with other actors along the palm oil supply chain. We collaborate with stakeholders on issues including human rights and labour challenges, and we also support existing sustainability initiatives. A full list of these initiatives and platforms is provided on page 24.





## ENRICHING THE ENVIRONMENT



## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

As a major player in the palm oil sector, we have a significant role to play in promoting sustainable forest management in our industry and contributing to the protection of critical ecosystems and biodiversity in and around the landscapes where we operate. We are deeply committed to environmental stewardship, and we continuously strive to minimise and mitigate the impacts of our operations. We also seek to enhance the state of the natural environment, where possible, and identify areas where we can make a difference.

### Our Principles

- Adherence to the Best Practices Guidelines laid down by the RSPO and POIG.
- No development on primary forest or areas identified as High Conservation Value (HCV).
- No development of High Carbon Stock (HCS) forests as defined by the HCS Approach.
- No development on peatland, regardless of depth.
- No planting on steep terrain and/or marginal and fragile soils.
- No use of fire during new development or replanting, and substituting mechanical, more environmentally sustainable methods.
- No establishment of new plantings in places where it can be demonstrated that there are legal or customary/user rights, without having obtained Free, Prior and Informed Consent (FPIC)
- Identifying all GHG emissions sources and working to progressively reduce emissions in existing operations.
- Continually exploring ways to enhance the state of the natural environment in which we operate, by monitoring and continuously reviewing our activities.

### OUR COMMITMENTS TO CONSERVATION AND NO DEFORESTATION

Our sustainability strategy is aligned with our commitment to the New York Declaration on Forests and provides the basis for implementing our 2020 No Deforestation targets. Under our Sustainability Policy, we have made specific commitments to no deforestation of high conservation value (HCV) areas and high carbon stock (HCS) forests. Within our wider commitment to conservation, we are also specifically dedicated to biodiversity conservation and the protection of rare, threatened and endangered (RTE) species.

Since November 2005, Musim Mas does not develop primary forests or any areas that contain one or more HCVs. HCV identification, conservation and monitoring have

been implemented across all our existing operations. We also conduct HCS and Social and Environmental Impact Assessments (SEIAs) prior to any new land development.

Our effort to monitor deforestation in the concessions of our third-party suppliers is being supported by Aidenvironment, our consultant, through their proprietary database and information platform. We also work with our key suppliers and other critical stakeholders, through collaborative initiatives and platforms, to support the wider implementation of our commitments and other conservation activities.

### Responsible land use planning

Musim Mas always ensures that land development is carried out responsibly. We follow the RSPO's New Planting Procedure (NPP), which is applicable to all new plantings since 1 January 2010. The NPP is implemented through a set of comprehensive and participatory technical assessments, including:

- Social Environmental Impact Assessments (SEIA)
- HCV assessments
- Land Use Change Analyses (LUCA)
- Soil suitability and topographic surveys
- GHG assessments
- Stakeholder engagement, including Free, Prior and Informed Consent (FPIC)

In 2015, we successfully completed the NPP process for new planting proposals submitted for five of our existing plantations in Riau and Central Kalimantan: PT Musim Mas, Sukajadi Sawit Mekar, PT Maju Aneka Sawit, PT Globalindo Alam Perkasa and PT Unggul Lestari.

Musim Mas conducts HCV and HCS assessments prior to all new land development following the requirements and definitions set out by the [HCS Approach \(HSCA\)](#) and the HCV Resource Network [Assessor Licensing Scheme \(ALS\)](#). We only engage HCV ALS accredited assessors for HCV assessments, and have engaged external assessors approved as [HCS Approach Registered Practitioner Organisations](#) to lead our HCS evaluations.

We have also adapted our HCS assessments to follow the guidelines of the [HCS Approach Toolkit Version 2.0](#) launched in May 2017. Under the latest version, guidance has been included for integrated HCV-HCS Approach assessments, and we are required to submit all joint assessments to the ALS for quality review. We will refer to this version and these joint guidelines for all new development plans in the future.

All of our operations have undergone HCV assessments. Those conducted after January 2015 are available on the HCV Resource Network website at: [www.hcvnetwork.org/als/public-summaries](http://www.hcvnetwork.org/als/public-summaries)

## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

### Status of HCS assessments in 2017-2018

As of December 2017, we have identified approximately 1,800 hectares of HCS area in three of our concessions. The HCS assessments conducted for these three concessions were submitted to the HCSA for peer review, but had not completed the process at the time of reporting. The area identified may therefore be subject to change following completion of the Quality Review Process.

At the time of this report's publication, Musim Mas has conducted ten HCS assessments, eight of which have been submitted to the HCSA for quality review process. Four of these assessments have completed the process and are publicly available.

Company	Status of HCS Assessment
PT. Lestari Abadi Perkasa (LAP)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Mentari Pratama (MP)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Globalindo Alam Perkasa (GAP)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Unggul Lestari (UL)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Sukajadi Sawit Mekar (SSM)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Maju Aneka Sawit (MAS)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Multipersada Gatramegah (MPG)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Musim Mas (MM)	HCSA quality review process completed and <a href="#">report</a> is publicly available
PT. Sarana Esa Cita (SEC)	HCSA report being finalised by consultant
PT. Mulia Indah (MI)	HCSA report being finalised by consultant

The status of all assessments submitted for quality review process and summary reports for all completed HCS assessments are available at: <http://highcarbonstock.org/registered-hcsa-assessments/>

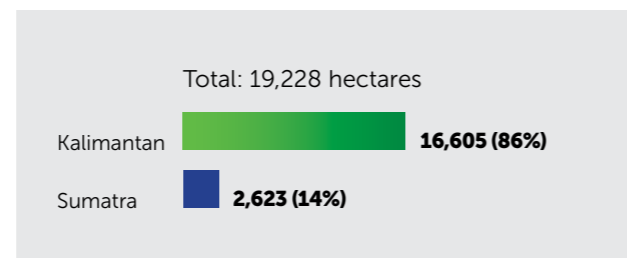
### POIG Charter 1.1 - Breaking the link between oil palm expansion and deforestation: forest protection – conserving and restoring High Conservation Value (HCV) and High Carbon Stock (HCS) areas

The link between oil palm expansion and deforestation will be broken through undertaking a High Carbon Stock approach in addition to a HCV assessment, and a process of obtaining Free, Prior and Informed Consent to use land. The approach combines biodiversity and carbon conservation, as well as social considerations (including community needs).

### Conservation areas and landscape initiatives

Through our integrated conservation approach, including HCV assessments, we have identified a total of 19,228 hectares of conservation area within our oil palm plantation operations. This area, which spans Kalimantan and Sumatra, has been set aside and is managed by Musim Mas.

### Conservation area in 2017



*Note to data: Conservation area covers HCV area and riparian zones. HCS area is excluded from conservation area for this report, as the HCS assessments had not completed the quality review process at the time of reporting. Therefore, the identified areas under these assessments may be subject to change.*

Musim Mas conducts regular and comprehensive biodiversity surveys in and around our concession areas. These surveys customarily include desktop reviews of the availability of flora and fauna, the collection of samples during field visits, and interviews with local communities to assist us in maintaining inventories of plant and animal species and their critical habitats.

Our HCV management plans for existing plantations are reviewed and updated annually. These include action plans for the protection and survival of rare, threatened and endangered (RTE) species and species protected by

law, and for the prevention of hunting within and outside our concession areas. The hunting of RTE species, and species protected by law, is prohibited in all of our concessions, and we do not operate within nationally designated protected areas.

An inventory of the fauna identified in Musim Mas' areas of operation that fall under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species can be found on page 70.

Musim Mas has set a specific target to eliminate hunting within all of our concessions. Workers and their families are also prohibited from keeping wildlife in captivity. In line with this target, and to help prevent such practices from taking place within the wider landscape, we engage with the communities surrounding our operations to socialise these issues and raise awareness about the importance of conservation.

Additional measures have been taken to prevent illegal development within forest and conservation areas. We conduct ground patrols and monitor encroachment by analysing Landsat images of mapped areas.

We have taken further steps to facilitate the restoration of some of our set-aside areas, with the aim of returning these areas as close to their natural state as possible. In 2009, for example, we started working with the Indonesian Forestry Agency to restore some of our riparian zones, by removing palms and replacing them with jungle trees. We have also achieved positive results by setting aside five rows of palms along riparian zones, without maintenance (fertiliser or spraying), to let the natural vegetation regrow. These palm are left in situ in the riparian buffer zone during replanting.



### POIG Charter 1.8 - Protect and conserve wildlife

Following comprehensive biodiversity surveys to identify HCV 1-3, in addition to ensuring the protection and survival of all rare, threatened or endangered species within their concession land, concession holders also make a positive contribution to their survival in the wild in areas beyond the concession.

### Landscape initiatives

Critical to our Sustainability Policy implementation strategy is our transformation objective, taking on a landscape-level approach to implementation and focusing our efforts in places where impact can be achieved. The regencies where we choose to focus our efforts are selected based on various factors, including operational presence and leverage, as well as landscape characteristics such as the existence of high-value ecology and biodiversity. Identifying priority landscapes forms part of our approach to engaging with our third-party suppliers, but is also key to our strategy for forming and participating in collaborative initiatives with other key stakeholders.

The following table presents an overview of the landscape initiatives we have undertaken as at December 2017, focusing primarily on conservation and environmental initiatives. A more comprehensive update on our regency-focused efforts can be found in our [2017 Sustainability Policy Progress Report](#).

PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

Critical Landscapes	What is at stake here?	Landscape Initiative(s)
<b>Riau</b>		
Tesso Nilo National Park Giam Siak Kecil peatlands	<ul style="list-style-type: none"> <li>Riau is one of our top supplier provinces. We estimate that our supplier mills make up 70–80% of the total mills in the province, forming 20% of our total CPO procurement.</li> <li>Riau is the largest provincial contributor to the national production of palm oil and is the fifth largest contributor towards Indonesia’s gross domestic product (GDP).</li> <li>Historically, deforestation in the landscape has been severe. It has been estimated that illegal oil palm plantations have taken over at least 40% of the Tesso Nilo National Park.</li> <li>Another important protected area is the Giam Siak Kecil peatlands, of which a significant portion is dominated by the pulp and paper sector.</li> <li>Riau is prone to forest fires during the annual dry season. In July 2017, the province declared a state of emergency due to the high risk of fires spreading elsewhere.</li> </ul>	<p><b>Tesso Nilo National Park</b> Musim Mas is a member of the Tesso Nilo Taskforce. We are also working with WWF Indonesia and Yayasan Taman Nasional Tesso Nilo to mitigate human-elephant conflict around Tesso Nilo national park.</p> <p><b>Siak and Pelalawan regencies</b> We are looking to be part of a multi-stakeholder collaboration to work on a joint vision of green growth for the two regencies. We will provide more information in the later part of 2018.</p> <p><b>Fire prevention/mitigation</b> As a member of the Fire Free Alliance (FFA), we are looking into a fire-free landscape initiative in the province for our pilot fire prevention programme.</p> <p><b>Working with key suppliers</b> We are monitoring and following up on improvement plans that we have developed based on our mill verifications for the key suppliers in the region.</p>
<b>West Kalimantan</b>		
Sambas	<ul style="list-style-type: none"> <li>West Kalimantan contributes 5% of our supply base and is one of the six provinces that contribute 80% of our supply base.</li> <li>We are able to trace up to 88% to plantation within the province, representing the highest percentage among the six provinces.</li> </ul>	We are working with Aidenvironment to explore the Sambas conservation project potentially in the areas of agroforestry.

Critical Landscapes	What is at stake here?	Landscape Initiative(s)
<b>Aceh</b>		
Leuser Ecosystem	<ul style="list-style-type: none"> <li>Aceh Province contributes to 5% of our total supply base.</li> <li>87% of the Leuser Ecosystem, one of the world’s most biologically diverse and threatened tropical forest landscapes, lies in the Aceh province,</li> <li>Aceh is not a major producer of palm oil and has lower deforestation rates relative to other provinces, but it is being threatened by the expansion of agriculture including oil palm.</li> </ul>	<p><b>Holistic supplier engagement strategy</b> We employ a holistic engagement strategy with our key suppliers, with the scoping of issues as a first step. Mill assessments are analysed and aggregated into a summary of the issues found. This guides our efforts on joint landscape work. The results of the assessments lay the foundation for crafting our supplier outreach programmes.</p> <p>An avenue we have identified for establishing a landscape approach is to support a collaborative supply shed with multiple companies and local government. Led by TFT, our implementation partner, this would leverage on the need to secure a No Deforestation supply chain to obtain support for a broader protection of the Leuser Ecosystem. We are also looking into the possibility of conducting wildlife protection through the PONGO Alliance platform.</p>
<b>South Sumatra</b>		
Sembilang-Dangku landscape	<ul style="list-style-type: none"> <li>Musi Banyuasin (MUBA) district has one of the highest numbers of supplier mills in our supply base. MUBA is the province’s second largest district and its largest palm oil producer.</li> <li>Although deforestation in MUBA has been severe, there is still much remaining forest (160,000 hectares). This includes three protected areas covering 75,000 hectares that provide protection for important tiger habitats, including the Sembilang-Dangku landscape.</li> <li>MUBA offers a unique combination of supportive local government, numerous progressive companies, and multiple landscape initiatives that create a rare platform for change. The regency is the first to work towards RSPO Jurisdictional Certification.</li> </ul>	<p><b>Improving traceability and smallholder agronomic practices of third-party supply</b> We are implementing our Extension Services Programme (ESP) for the independent smallholders in the supply chain of one of our suppliers’ mills, PT Bastian Olah Sawit (PT BOS), to assist them in improving their productivity through the implementation of good agricultural practices. PT BOS belongs to one of the supplier groups prioritised for engagement.</p> <p>In addition, we are working with Rainforest Alliance to specifically address sustainability issues relating to independent oil palm farmers in the region, and to support the development of a jurisdictional approach for the entire regency.</p> <p>We are also working with Daemeter, the Cadasta Foundation, and IT consultant GeoTraceability, to develop and implement a fully functioning Oil Palm Supply Chain Traceability System at one site in MUBA. The System will be a chain-of-custody mobile application that enables individual fresh fruit bunches (FFBs) to be tracked through the supply chain. This pilot project will cover the supply chain of PT BOS.</p>

## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

### ZERO BURNING

Musim Mas operates a strict zero burning policy for all new development and replanting. We have also taken measures to ensure that we can quickly and effectively respond to any fire outbreaks within the landscapes where we operate.

We maintain teams of highly trained firefighters at each of our plantations. These teams assist the district and provincial governments in regions where we operate to fight any outbreaks that could otherwise result in more widespread burning, and consequently further damage, air pollution and haze. All operations are provided with firefighting equipment, and all factories have early warning and firefighting systems. We cooperate with the local governmental fire safety centres to carry out fire drills and conduct regular training for our workers to maintain high fire safety standards.

We also monitor fire incidences and affected areas outside of our areas of operation. Fire data is collated from various sources, including active fire data from various satellites (NOAA, VIIRS, MODIS) and the World Resources Institute's (WRI) [Global Forest Watch Fires \(GFW Fires\)](#) platform, an online forest monitoring and fire alert system. Our control crews undertake daily fire monitoring extending three kilometres beyond our concession boundaries. Crews act on the first sign of an outbreak and report to headquarters so that the RSPO can be informed in a timely manner.

Musim Mas piloted an early fire detection system in 2017 in collaboration with a leading telecommunications company. The system, located on top of a signalling tower, uses a camera with thermal sensory capabilities to provide 360-degree detection with a five-kilometre coverage. If a hotspot is detected, the system alerts the ground crew to take action. The fire detection system will be implemented across all Musim Mas operations if the pilot proves successful.

In 2017, four fire incidences were recorded, which has resulted in an estimated 4.74 hectares of burnt area. Between 2016 and 2017, we have seen a 71% decrease in the number of fires within our concessions. This is primarily due to an increased amount of rainfall in 2017.

### Number of fire incidences and area affected within Musim Mas concessions

Region	2016			2017		
	Number of hotspots	Number of fires	Affected area (ha)	Number of hotspots	Number of fires	Affected area (ha)
Sumatra	25	1	100	9	0	0
Kalimantan	65	13	7.75	26	4	4.74

### Fire Free Alliance

In March 2016, Musim Mas joined a group of leading forestry and agriculture companies, NGOs and other partners to found the Fire Free Alliance (FFA). FFA members include APRIL Group, Asian Agri, Sime Darby, Wilmar, and NGOs such as the Sustainable Trade Initiative (IDH) and People's Movement to stop Haze (PM.Haze). FFA activities support the Indonesian Government's commitment to a haze-free ASEAN region by 2020.

All FFA members have committed to sharing knowledge, data and, where possible, resources to roll out fire prevention initiatives based on APRIL Group's Fire Free Village Programme (FFVP). All company members have implemented the FFVP as a means to engage local communities in protecting forests from fire. A 2017 FFA report reviewed the progress made by individual company members in 2016, as well as their targets for 2017.

Learn more about the FFA at: [firefreealliance.org/](http://firefreealliance.org/)

### Community fire free programmes in 2016–2017

Our FFVP, known as *Masyarakat Bebas Api (MBA)*, is up and running in regions across Indonesia. Memoranda of Understanding (MoU) have been signed with 71 villages covering cover more than half a million hectares – double our own concession area. In 2016 alone, we have invested IDR 26 billion (about USD 2 million) in the MBA programme and other fire monitoring and suppression activities.

MBA is designed to overcome challenges when talking to local communities about the risk of using fire for land preparation. Training on agronomic best practices and alternative methods of land clearance form a key part of the programme. In 2017, we conducted a total of 138 trainings under the MBA programme. We also engage village heads and villagers in discussions about fire prevention, and provide them with fire-fighting and monitoring resources. These resources include fire extinguishers, portable water tanks, farm tractors, excavators and bulldozers. Early detection systems incorporating drones and CCTV are also made available in some cases. Regular letters of appeal are sent, and signage has been installed, to remind communities to not use fire.

Another key function of MBA is to incentivise communities to be vigilant in preventing fires. Each village that remains fire-free throughout the MoU period receives an award that can be used to build or repair community infrastructure.

### Combating fire with compost

Building on the MBA programme, we have partnered with the University of Riau (UNRI) on a two-year project to explore innovative solutions in community-focused fire prevention. This collaboration is already training local communities on alternative organic waste management methods. Dry organic litter left around farms or scrub areas is a major fire risk, which can be easily mitigated by composting organic waste. Compost mix provides the additional benefits of serving as a good substitute for chemical pesticides, and it is rich in macro- and micro-nutrients.

We are working with UNRI on a composting model that can be adapted by communities. Three villages near the Musim Mas concession in Pekanbaru (Riau) are participating in the project, and we will monitor its success based on indicators including the achievement of zero burning. We look forward to contributing to a growing pool of research and scientific literature, based on the collection and exchange of data and information from our partnership with UNRI.

Learn more about our collaboration with UNRI at: [www.musimmas.com/news/sustainability-journal/2017/combating-the-use-of-fire-through-composting](http://www.musimmas.com/news/sustainability-journal/2017/combating-the-use-of-fire-through-composting).

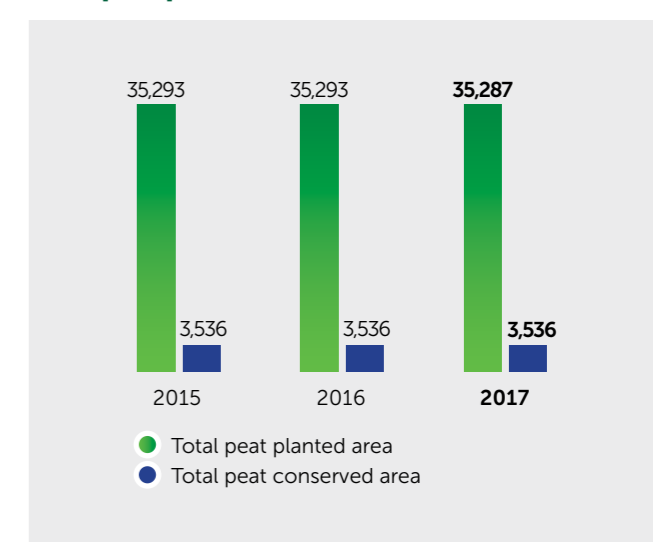
### PROTECTION OF PEATLAND

In accordance with our Sustainability Policy, Musim Mas does not conduct any new plantings on peatlands, regardless of depth. There have been no new plantings on peat areas since 1 January 2008 at any company under Musim Mas Group management.

For our existing plantations on peat, we are committed to apply best management practices in accordance with Indonesian regulations and as required by other sustainability requirements. We have developed a network of water control structures to regulate water levels, and we maintain water tables according to these best management practices and regulations. We conduct appropriate drainability assessments prior to replanting to determine the long-term viability of the drainage. The map of peat land and planted peat are provided on page 72.

Musim Mas is working with the Indonesian Environmental and Forestry Ministry, *Kementerian Lingkungan Hidup dan Kehutanan (KLHK)*, to evaluate our existing plantings on

### Total peat planted area and conserved (ha)



peat and identify critical areas for restoration. We have mapped the topography, hydro-topography, peat depth, water management systems, and water level monitoring plots across our peatland plantings, and have submitted these maps to KLHK.

These maps are currently under review, and our next step will be to undertake a joint field verification with KLHK to confirm the presence of peatland areas. Musim Mas will also engage an independent peat expert to review the critical areas identified and explore the options for a peatland restoration mechanism. The restoration mechanism will be developed based on KLHK's final decision and guidance. The critical peatland maps will be made publicly available once this process is completed.

### POIG Charter - 1.2 Peatland

- No peat clearance: All areas of undeveloped peatlands (peat of any depth) are protected and all drainage, fires or road building on peat soils is prohibited.
- Maintenance of peatlands: Water tables are managed in existing plantations on peat in order to minimise both the subsidence of the peat and the release of GHG emissions. Strategies are employed to progressively restore critical peatland ecosystems, with a preference for replanting on mineral soils, including via 'land swaps'.

## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

### MINIMISING OUR CARBON FOOTPRINT

#### GHG accountability

We are committed to operate in a manner that minimises our net GHG emissions towards a goal of low carbon emissions. We have implemented best management practices and have adopted a range of measures to significantly reduce our GHG emissions, such as building methane capture systems in our palm oil mills, improving our palm oil yields, following NDPE policy in oil palm expansion and carrying out appropriate water table management in peatland areas.

We map and monitor all GHG emissions sources in our own operations, including those related to land use change and non-land use activities. We calculate our GHG emissions using the latest RSPO PalmGHG calculator (version 3.0.1) in accordance with RSPO and POIG GHG requirements. We also use the GHG Protocol accounting standard to calculate our scope 1 and 2 GHG emissions for disclosure through the Carbon Disclosure Project (CDP).

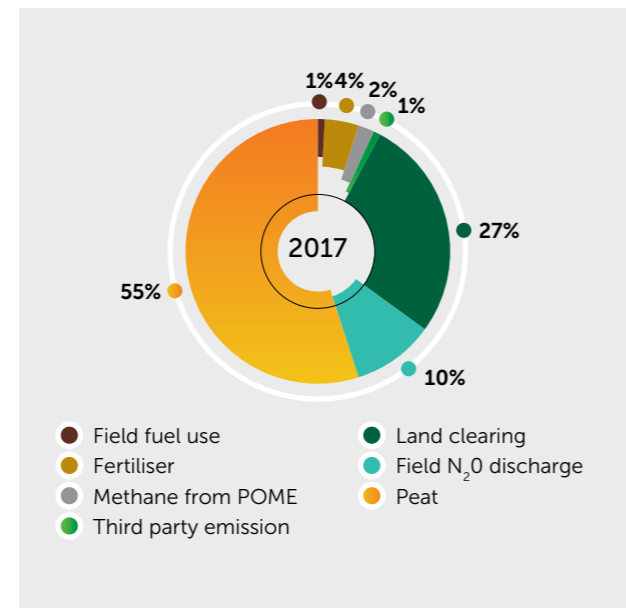
#### RSPO PalmGHG: GHG emissions as at December 2017

Emissions from peat are the single biggest contributor to our GHG footprint, followed by emissions from land conversion, Field N<sub>2</sub>O discharge, fertilisers and palm oil mill effluent (POME). These are partially offset by carbon sequestration in palm trees and emission credits from the export of electricity and palm kernel shells. More significantly, the installation of methane capture facilities at our palm oil mills reduces our GHG emissions by hundreds of thousand tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) every year. Recognising the significant contribution that peat has on our GHG emissions, we apply best management practices and are working to evaluate our existing plantings on peat to identify critical areas for restoration. Read more about our approach on page 41.

Our GHG emission intensity has seen a rapid decline over the years. Our overall GHG emission intensity, which was calculated and reported for our 2017 RSPO audit cycle, was 3.39 tCO<sub>2</sub>e per tonne of CPO produced—43% lower than our 2006 baseline. This decline is due to the various best management practices Musim Mas has undertaken since 2006, such as no new planting on peat since 1 January 2008, the installation of methane capture, optimising chemicals use through Integrated

Pest Management (IPM) and precision agriculture. Although a significant proportion of the potential reduction has already been realised, we will continue to try and lower our GHG emission intensity by improving our water management in peat areas and increasing our FFB yield and oil extraction rate. We targeted that in 2025, our GHG emission would have been reduced by 55% compared to 2006 baseline.

#### Emissions by source in 2017



Note to data: data is calculated and reported for our 2017 RSPO audit cycle, but covers 2016.

#### Group Emissions by year (MT CO<sub>2</sub>e/MT CPO)

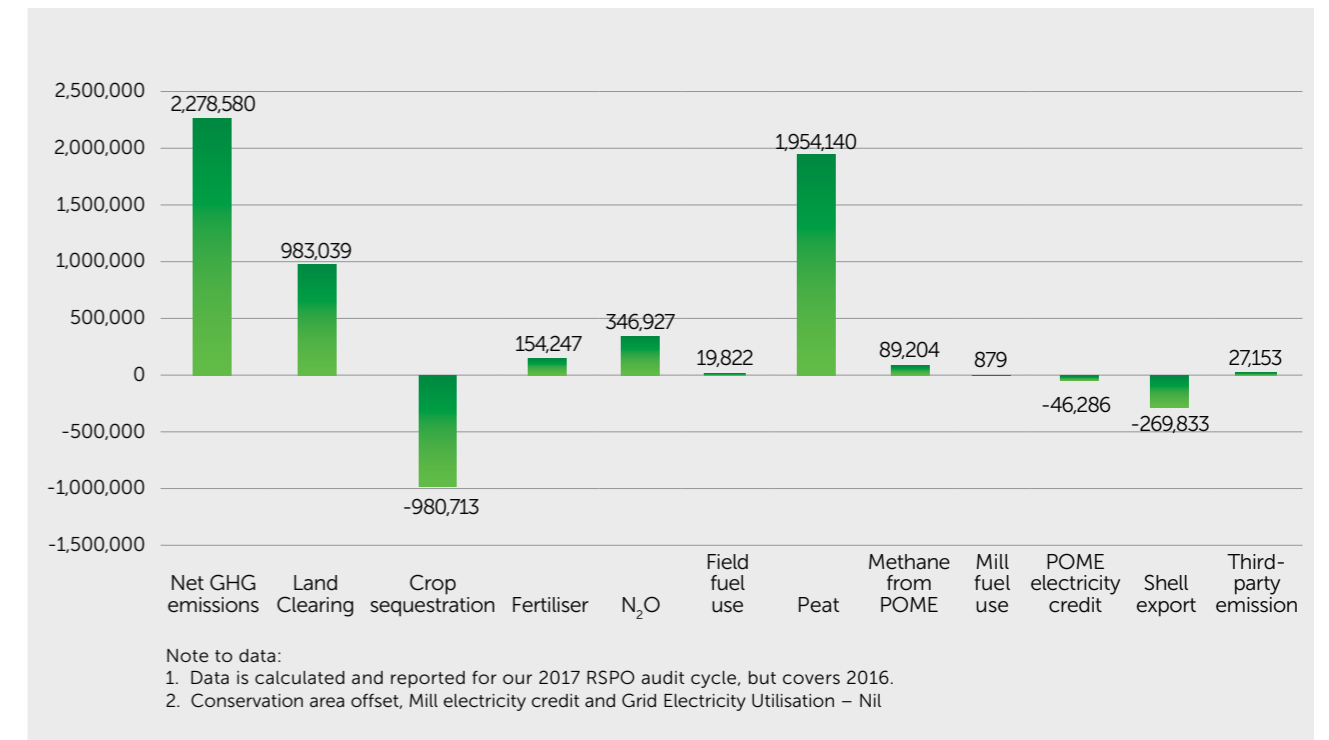
		2015	2016	2017
Total carbon emissions at mill	MT CO <sub>2</sub> e/MT CPO	3.15	3.33	3.39

Notes to data: Data reflects carbon emissions for our mills by group. Data for each year is calculated and reported for the RSPO auditing cycle in that year, but covers the year prior.

#### GHG Protocol and CDP disclosure

We have been participating in the CDP disclosure programme since 2015. CDP is a not-for-profit charity that runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. In 2017, we participated in the CDP Forestry and CDP Climate Change programmes, where we obtained a score of A- and C respectively.

#### Emissions sources and sinks 2017



#### Note to data:

1. Data is calculated and reported for our 2017 RSPO audit cycle, but covers 2016.
2. Conservation area offset, Mill electricity credit and Grid Electricity Utilisation – Nil

For 2018, we are participating in CDP Climate Change, CDP Forestry and CDP Water. The CDP Climate Change programme encourages companies to measure, calculate and disclose their Scope 1 and 2 GHG emissions. We have calculated our emissions using the GHG Protocol methodology. The scope of this calculation is all operational activities (upstream and downstream) where we exercise operational control.

As co-chair of the RSPO Emissions Reduction Working Group and co-lead of the Indonesian Sustainable Palm Oil (ISPO) GHG Working Group, we are sharing our experience on leading GHG reduction and monitoring practices with other companies and organisations. Together with the ISPO Commission, the GHG Working Group has formulated calculation guidelines for Palm Oil plantations in Indonesia.

#### Scope 1 & 2 emissions by region

	Indonesia	Asia (other than Indonesia)	Europe	America
Scope 1 (tCO <sub>2</sub> e)	1,354,696	53,841	57,826	0
Scope 2 (tCO <sub>2</sub> e)	209,527	22,009	16,425	40

#### Scope 1 & 2 emissions by business activity

	Oil palm plantations	Palm oil mill	Refineries & oleochemicals	Others
Scope 1 (tCO <sub>2</sub> e)	384,181	19,878	959,114	103,189
Scope 2 (tCO <sub>2</sub> e)	0	78	243,549	4,375

PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

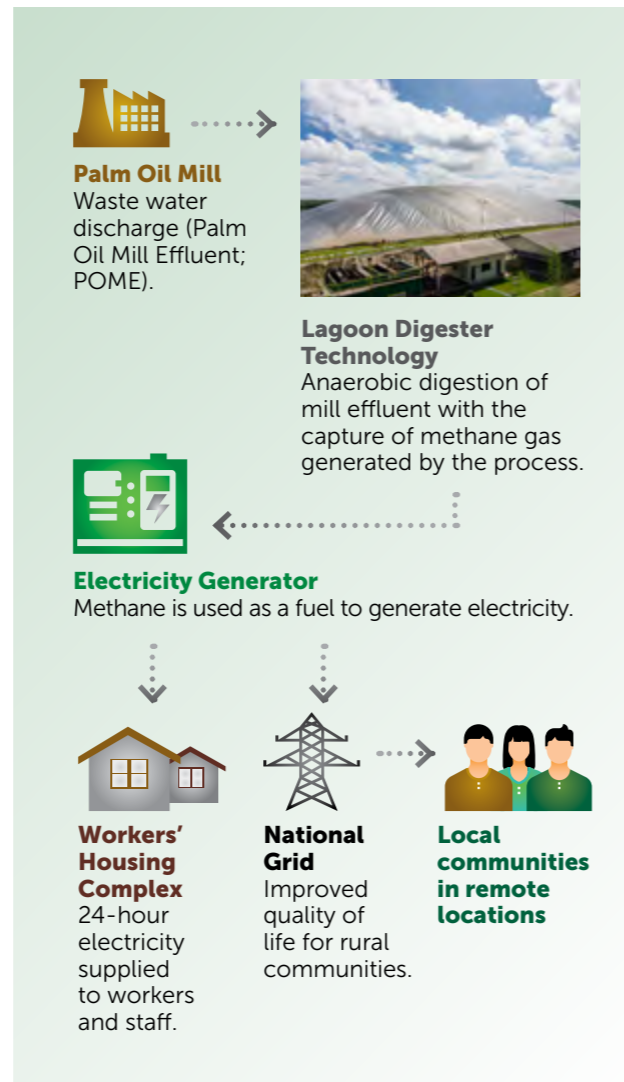
**POIG Charter 1.3 - Greenhouse Gas (GHG) accountability**

Companies shall publicly report on annual GHG emissions from all sources and on the progress towards reaching targeted reductions of non-land use GHG emissions (per tonne of CPO).

**Methane recovery**

The processing of FFB results in a liquid waste known as palm oil mill effluent (POME). POME is usually treated using a process of anaerobic digestion in deep open lagoons. This reduces effluent toxicity levels, but releases methane, a GHG with a global warming potential 34 times more potent than carbon dioxide.

Our methane capture system prevents methane gas being released into the atmosphere by tightly sealing lagoons with high-density polyethylene. This enables us to capture and harness methane from POME treatment to fuel the generation of electricity, which we use to power our mills, estates and workers' housing. We have also been exporting surplus generated electricity to the national grid since 2014. At present, ten Musim Mas mills are engaged in contracts with the national grid for electricity sales.

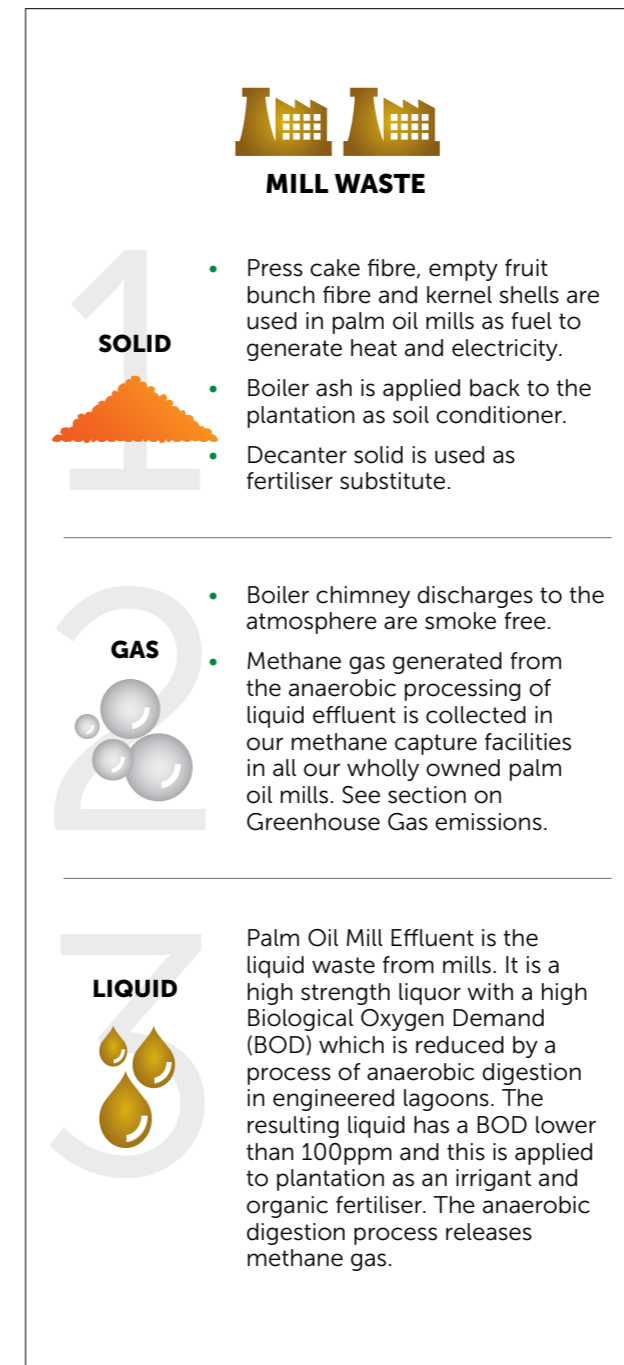


Musim Mas is first major group in the palm oil industry to commit to extending methane capture projects to all its mills. At the close of 2017, 13 of our mills are equipped with methane capture facilities. The total Group emissions savings attributable to methane capture amounts to approximately 485,000 tonnes annually – roughly the amount of carbon emitted by 103,000 cars in a year.

**Holistic waste management**

Our mills operate holistic waste management systems with the aim of achieving “zero discharge” and reducing our impact on the environment. The systems either minimise waste or harness it for use as inputs in other processes related to our operations. The specific waste management solution adopted at each mill depends on factors such as seasonal inputs, local site conditions, energy requirements, mill design and crop type variations.

We employ the following methods for each of the three categories of mill waste:



**WATER ACCOUNTABILITY AND FOOTPRINT**

It is estimated that agricultural activities account for approximately 86% of humanity’s water footprint. Within this context, agricultural systems are extremely dependent on the availability of water. A failure to recognise this vulnerability can lead to the mismanagement in water use, which in turn can have severe consequences.

Recognising the importance of safeguarding water, we strive to minimise the impact of our operations on water resources in and around our concessions. We have developed and implemented a comprehensive water management plan to maintain the quality and availability of surface and ground water for the future security of our business and the benefit of surrounding communities.

**Water use and consumption**

In 2017, we used 4.4 million cubic metres of water in our mill and plantation operations. Our mill operations used 3.3 million cubic meters while our plantation operations used 1.1 million cubic meters. Our mill water use intensity improved slightly in 2017 compared to 2016. This is due to the improvement in palm yield in 2017 compared to 2016, which was low as a result of El Niño induced drought in 2014/2015. This explains the increase in water use intensity in 2016.

**Water use per tonne of FFB processed – mills (m³/MT FFB)**





## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

In addition to water use monitoring, we have since 2016 monitored our water consumption<sup>8</sup> using the Water Footprint Network methodology. This methodology divides water consumption into three categories: blue, green and grey. "Blue water" refers to consumption of water from fresh surface or groundwater (water withdrawn from rivers, lakes and municipal water sources); "green water" refers to rainwater consumption; and "grey water" refers to the amount of water used to dilute pollutants.

Our assessment showed that we consumed almost 1.9 billion cubic metres of water in 2017, most of which was green water (consumed by oil palm trees) and grey water (required to dilute nutrient runoff to rivers). A water balance analysis has also been conducted to compare the amount of water received by our plantations in the form of rain and river inflow with our total water consumption. The results show a net positive water balance.

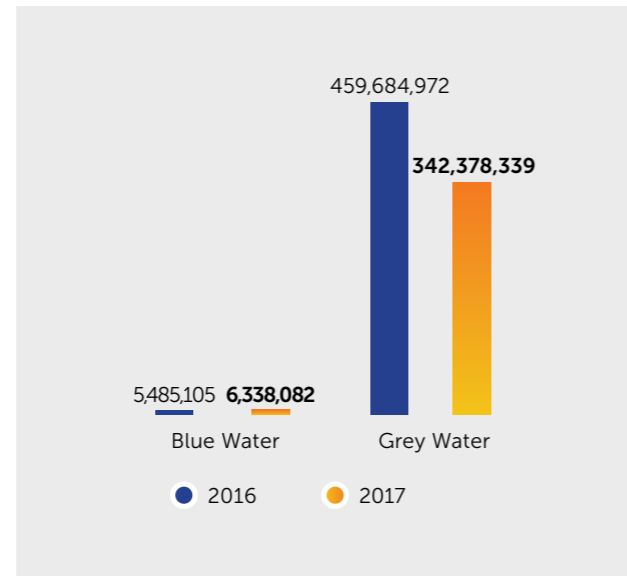
Nevertheless, we continue striving to optimise our water use and consumption where possible. Green water consumption is outside the scope of our control, as it is dependent on the local climate at the growing area, so our water reduction programmes primarily target blue and grey water consumption.

We continue conserving blue water through programmes aimed at reducing actual water use in mills, plantations and housing. For example, we recycle the water produced in our palm oil vacuum dryers to clean our sludge separators. We also collect the water used to wash the protective wear utilised by our pesticide applicators, and recycle it for pesticide mixing.

To reduce grey water, we have implemented IPM to minimise our use of pesticides and have rescheduled our fertiliser application to coincide with the dry season to reduce fertiliser runoff.

As our blue water consumption is low, and we aim to be more vigilant on our water and soil conservation practices that are related to green water. This target is 2.75% if fertiliser usage is 10% below the 2016 level, 5.5% if fertiliser usage is 20% below the 2016 level, and 8.25% if the fertiliser usage is 30% below the 2016 level.

### Blue and Grey water consumption 2016-2017 (m<sup>3</sup>)



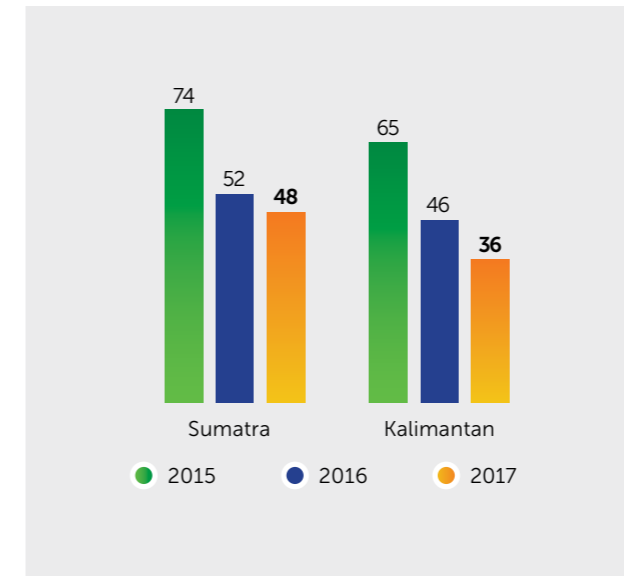
*Note to data: The decrease in grey water consumption between 2016 and 2017 is due to a reduction in fertiliser usage in the same timeframe, especially phosphorus fertiliser. In most of our plantations, the level of phosphorus monitored in waterways (e.g. rivers) is the determining factor for calculating grey water consumption.*

### Safeguarding water quality

Although the POME from our mills is treated beyond the required regulatory levels, with the exception of one mill in Sumatra, we do not discharge it to waterways. Instead, we apply the by-product as fertiliser in our plantations, and ensure that Biochemical Oxygen Demand (BOD) levels remain below 100 parts per million.<sup>9</sup> This mitigates any impact on groundwater and nearby water sources.

Since our first POIG verification audit, we have reviewed our water monitoring points in our operations, and have added additional points to better reflect inlet and outlet positioning. Musim Mas is also in the process of establishing guidance procedure to deal with cases of elevated phosphorous and nitrogen levels in watercourses.

### BOD levels land application by region – mills (mg/L)



### Riparian zone management

Riparian zones provide a buffer between natural waterways and land used for agricultural development. As such, they can help to prevent soil erosion and minimise surface runoff. Buffer zones also contribute to maintaining and enhancing biodiversity.

Following legal requirements relating to land development for oil palm cultivation, we maintain 50-metre riparian buffer zones for small rivers, and 100-metre buffers for wide rivers. In addition to these legal requirements and other voluntary codes, we have also strengthened our monitoring process by regularly evaluating water quality. In addition, as part of our focus on biodiversity, we conduct surveys on the presence of birds, butterflies, reptiles and small mammals in riparian zones.

### REDUCING CHEMICAL USE

We continue working to optimise and reduce our use of chemical fertilisers and pesticides and we substitute organic alternatives where possible. Musim Mas employs an IPM system that combines biological, cultural, physical and chemical tools to reduce our reliance on pesticides and herbicides, and the concomitant economic, health, and environmental risks. This includes, for example, encouraging the growth of barn owl populations on our estates to control the population of rats, a common pest on oil palm plantations.

We apply fertilisers following agronomic recommendations based on soil and leaf analyses. This approach minimises waste and ineffective fertiliser application. We also apply boiler ash from our mills in peatland areas to maintain pH levels and use dried decanter solid in place of potassium on sandy soil to increase moisture retention. Overall, the application of boiler ash and dried decanter solid helps us to improve the physical and chemical properties of marginal soils.

Musim Mas looks to international standards and best practices for guidance on the exclusion of certain chemicals that are considered to be hazardous for workers and harmful for the environment. Since 2011, we have banned the use of paraquat in all our plantations, including those operated by affiliated smallholders. Under the POIG Charter and its indicator requirements, grower members are also committed to not using any chemicals identified by the World Health Organization as Class 1A or 1B, or those listed on the Stockholm or Rotterdam Conventions, the FSC's 'Highly Hazardous' list, or the prohibited pesticide list published by the Rainforest Alliance's Sustainable Agriculture Network.

As part of our POIG verification process, we are working towards full compliance in excluding the listed chemicals from use in our plantations, and we continue exploring alternative solutions. Following recommendations put forward by POIG, Musim Mas will carry out an independent review to identify any cases where we have not yet been able to eliminate specific chemicals and set a timebound plan to phase out their use.

### POIG Charter 1.7 - Water accountability

The quality and quantity of water is maintained with responsible water management adopted including minimisation and disclosure of water use, pollution elimination, equity with other users, and consideration of catchment level impacts of irrigation.

<sup>8</sup> Water use describes the total amount of water withdrawn from its source for use, while water consumption is the portion of water use not returned to the original water source after being withdrawn.

<sup>9</sup> To provide a basis for comparison, Indonesian Government regulations require that BOD levels are below 5,000 parts per million for land application.

## PROMOTING POSITIVE ENVIRONMENTAL IMPACTS

### Ensuring adequate protection for our workers

Musim Mas has established two policies for workers that detail the requirements and procedures related to the utilisation of Personal Protective Equipment (PPE) during pesticide application. These policies prohibit women from engaging in pesticide application during pregnancy and while breastfeeding. All workers handling chemicals are provided with regular training on appropriate application and health and safety procedures, which is organised by estate management teams. We also provide free regular medical check-ups for workers handling chemicals.

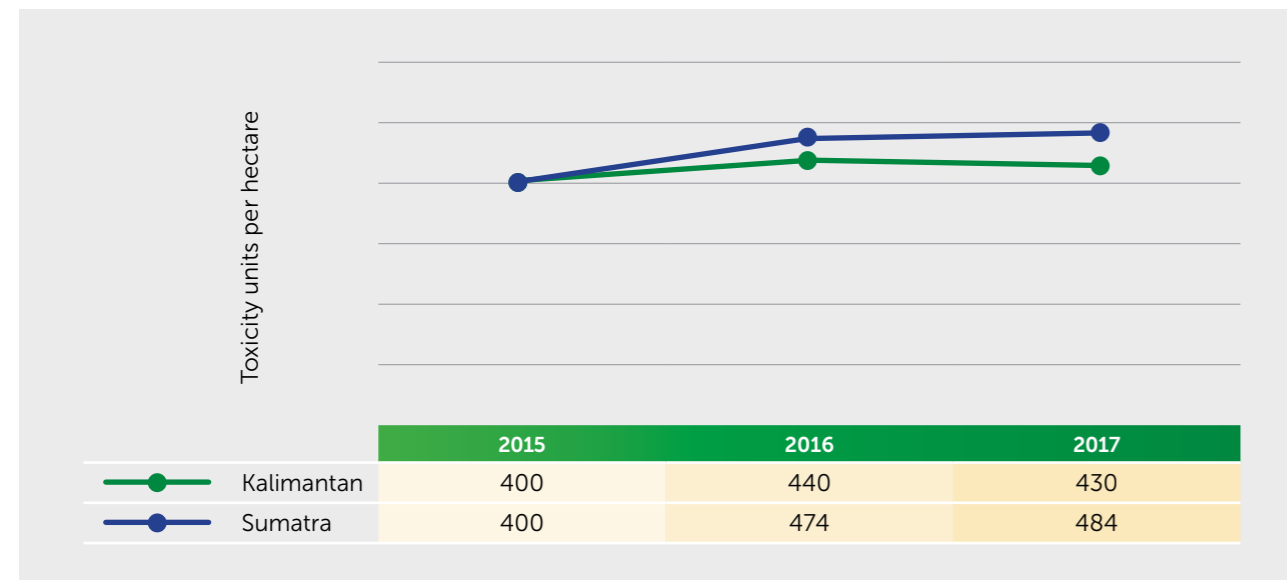
### Monitoring toxicity in 2017

We monitor toxicity levels of the pesticides in use as part of our efforts to ensure that the minimum dosages applied

meet the health and safety requirements for workers while still producing effective results. We also track the usage of pesticides applied in each of our operations on a daily, weekly, monthly and yearly basis.

The toxicity levels of the pesticides in use have remained relatively stable between 2015 and 2017, and we believe that our current range of 400–484 toxicity units per hectare is largely aligned with best practice within the palm oil industry. Following our 2018 pesticides review, and the implementation of the resulting timebound plan to phase out certain chemicals as per POIG requirements, we expect these levels to be significantly reduced.

### Toxicity per hectare by region (2015 - 2017)



### POIG Charter 1.4 - Pesticides use minimisation

Highly toxic, bio-accumulative and persistent pesticides shall not be used. These include chemicals on the FSC 'Highly Hazardous' list and SAN prohibited pesticide list. Producers shall by preference practice natural weed and pest control and IPM, and strive to avoid the use of toxic pesticides, only using them as an absolute last resort. There shall be full transparency of any pesticide use.

### POIG Charter 1.5 - Chemical fertiliser

To reduce climate and environmental impacts, producers shall strive to minimise chemical fertiliser use, and preferentially use 'precision agriculture', organic fertilisers, and where possible use waste as a source of phosphorus. Phosphorus and nitrogen levels in watercourses are monitored and disclosed.

### MAINTAINING SOIL HEALTH AND STRUCTURE

Unsustainable agricultural activities can cause long-term deterioration of soil health and soil structure. It is therefore vital that we follow good agricultural practices in order to sustain our future productivity and safeguard our environment.

We promote top soil fertility by maintaining organic matter at an appropriate level for specific soil types. To do this, we reuse cleared vegetation, including cut fronds from harvesting or pruning, to return nutrients to the soil. Waste biomass from our mills, including boiler ash and

dried decanter solids, are applied to enhance soil quality. We also protect soil health by planting legume cover crops following the clearance of old palms.

The growth of moss, soft grasses and ferns is encouraged under older palms. This type of ground cover limits the growth of weeds and helps to minimise the depletion of soil organic matter from exposure to sunlight and erosion. In hilly regions, where the angle of slopes falls within the limits defined by legal or voluntary codes, we plant oil palms in terraces in order to trap rainwater, reduce surface runoff and minimise soil erosion





## ENGAGING OUR COMMUNITY



## SOCIAL RESPONSIBILITY

Musim Mas respects, protects and upholds the human rights of our employees and surrounding communities. Our commitments are guided by international standards, including the International Labour Organization (ILO), the United Nations (UN) Universal Declaration of Human Rights, 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 United Nations Guiding Principles on Business and Human Rights.

As a member of POIG, we are committed to raising the bar on labour standards through the development and implementation of innovations that address common labour rights issues. We began reviewing our policies and practices in 2015 to align them with the

[Free and Fair Labor in Palm Oil Production Principles](#), and have since undertaken an independent labour audit in collaboration with Verité, which we have used as a basis for implementing changes and improvements. Musim Mas is also a member of the RSPO Human Rights Working Group and the High Carbon Stock Approach (HCSA) Social Requirements Working Group.

We are committed to building sustained, long-term partnerships that enable the value we create to be shared with the communities we operate alongside. We strive to maintain the wellbeing of our workers and local community members, and to ensure that they all have access to the benefits of a sustainable model of oil palm development.



## SOCIAL RESPONSIBILITY

### 2016 VERITÉ LABOUR ASSESSMENT

Labour and human rights issues in the palm oil supply chain remain an industry-wide challenge. At Musim Mas, we recognise the complexity of this challenge and have increased our focus on identifying and addressing labour issues throughout our operations.

In August 2016, Musim Mas underwent an independent labour compliance assessment in partnership with Verité, a global organisation focused on labour and human rights issues in companies and their supply chains. The assessment was initiated to identify risks of non-conformance to the POIG Charter, the RSPO Principles and Criteria (P&Cs), Verité's Best Practice Standards, as well as other international standards relating to worker protection and occupational health and safety. The audit covered three main areas: labour and human rights, compensation and hours, and health and safety.

The field assessments took place in three of our mills and eight of our estates in Central Kalimantan and Riau. Assessments involved in-depth independent interviews with management-level personnel and 123 non-management workers. A documentary review, site inspections, and interviews with unions and the associated smallholder cooperative were also conducted.

Verité's labour assessment [report](#) highlighted the following good labour practices employed by our Group:

- Strong "no child labour" policies.
- Protection of workers' rights on minimum wage and ensuring permanent worker status after three months of probation.
- Low precarious employment rate.
- Good maternity policies.

The report also provided recommendations for improvement in some of the key concern areas identified

for the palm oil industry. These include ensuring the Group addresses overtime hours, protects the legal rights of undocumented workers, strengthens policies to ensure that benefits are equally protected regardless of gender, and strengthening housing policies in line with international standards where Indonesian legal standards are unclear.

During the one-year period between the assessment and the report's publication, the Group worked to address these gaps and has achieved closure in the following cases:

- Strengthening overtime policies to ensure compliance with legal standards.
- Formalising temporary employment status through short-term contracts and insurances.
- Ensuring explicit recognition of women as heads of families, thus providing them with entitlement to housing.
- Exploring ways to better distribute free, clean water to all households.

Our approach to addressing Verité's main concerns and recommendations are covered in the following sections of this report. We continue working to address the remaining gaps, all of which require lengthier consideration and the development of implementation processes that can straddle business realities with labour rights considerations.

This assessment was the Group's first step towards compliance with the POIG Charter. We have volunteered to implement the assessment as a POIG labour innovation trial, as it demonstrates that more can be done to adequately assess performance and implement best practices for upholding the rights of all workers. More information can be found in POIG's [Palm Oil Innovations: Labour Rights](#) publication.

### Summary of findings from Verité labour assessment:

Good Labour Practices	Key recommendations	Corrective actions taken
Maintains basic personnel file of legal workers, though this can be improved by being more in-depth	Regularly review human resources/ personnel complement vis-à-vis operational demands, and make necessary adjustments to ensure overtime is respected in accordance with existing laws	Capping of normal period overtime hours at 14 hours a week and three hours a day; ensuring all overtime is voluntary and paid in accordance with legal standards; reviewing of rotation system to address work life balance; and limiting the number of off days workers may choose not to take
Does not employ child labour	Protect the legal rights of undocumented workers to ensure that everyone who contributes work is protected by labour laws	Formalising of temporary workers through short-term employment contracts and insurance; upon compliance with the employment terms, these workers are recruited as permanent workers
Workers guaranteed the legal minimum wage as their base wage, regardless of ability to meet quota	Ensure that workers' benefits are applied consistently regardless of gender; maximise the use of the Gender Committee so that company policies are relevant and not discriminatory to women	Providing unrestricted menstrual leave to female workers in accordance with applicable laws; recognising female workers as heads of families for housing entitlement as verified in the Family Card; Gender Committee engaged with third party for socialisation on gender issues
No indication that identity documents are retained	In the absence of clear Indonesian legal standards, company should benchmark against international human rights standards to water and the ILO recommendation on workers' housing	Studying water consumption patterns in the household to derive a new water distribution system to ensure equitable supply of free clean water to all households
Good maternity policies		
Probationary workers are upgraded to permanent status per law		

## SOCIAL RESPONSIBILITY

### PROTECTING WORKPLACE HUMAN RIGHTS

Our workforce of 37,938 employees forms the backbone of our business, and we strive to ensure that every employee is empowered to succeed in a safe, progressive working environment that offers equal or better standards compared to the wider palm oil industry. Every Musim Mas employee should expect to be treated with dignity and respect, to be adequately and fairly compensated for overtime, to have access to a fair and accountable grievance system, and to be remediated for any unlawful or unethical treatment.

We constantly monitor market developments to make sure that pay and working conditions at Musim Mas comply with legal or industry minimum standards in the countries where we operate, and that these are sufficient to provide a decent living wage. Maintaining transparent and reliable records of all working hours and wages is also mandatory. All workers receive copies of their contracts and it is our policy that all workers retain control over their identity documents. Workers are informed when their collective work agreement is made publicly available and when updates to this agreement occur. We are also working on creating pocketbooks to improve access to and understanding of our personnel policies.

Prior to commencing any new development, we adhere to the RSPO New Planting Procedure (NPP) and undertake a Social and Environmental Impact Assessment (SEIA) to review the social conditions of local and surrounding communities in relation to the new development. Management and monitoring plans are subsequently developed and implemented.

We further support the welfare of our workforce through heavy investment in infrastructural developments, including roads, housing, water supplies, medical facilities, schools and other amenities. Employees across all estates are also provided with an opportunity to share ideas and voice feedback on our operations during our annual Musim Mas Improvement Day.

#### No child, bonded or forced labour

Musim Mas strongly opposes the use of forced or trafficked labour, and we do not employ child labour in our operations. Our recruitment policy prohibits the employment of any individual under the age of 18 and all job applicants are verified against minimum age requirements.

While our approach to minimising child labour was commended in the Verité audit, we recognise that there is room for improvement in our documentation

system for personnel files and in our current recruitment procedures. We therefore reviewed our workers' biodata in 2017 and will continue to review and update our records to ensure our documentation is complete. We have also integrated age-verification measures into our recruitment procedure, including interviews for all applicants, to prevent any underage, forced or trafficked labour entering our workforce. These updated policies and procedures have been socialised regularly among our employees and through workers' unions.

Notwithstanding these actions at mill and estate levels, we do acknowledge the potential risk of children being present at the smallholder level, where it is not uncommon for small farmers to bring family members under the age of 18 to help them in the field. To address this issue, we are conducting regular socialisation programmes that cover the importance of education for child development, as well as children's rights in the plantation context. Musim Mas provides schools and childcare centres for children living in and around our plantations so that parents can go to work without having to worry about their children's safety and education.

#### POIG Charter 2.5 - Workers rights

Palm oil producers shall respect worker's rights including the International Labour Organization (ILO) requirements for 'decent work' and core conventions on child labour, forced or compulsory labour, freedom of association, and elimination of discrimination.

#### No harassment, abuse, or unlawful or unethical discrimination

Musim Mas does not tolerate sexual harassment in the workplace and maintains a policy of non-discrimination. Procedures are put in place to deal with workplace harassment and assault in a manner that guarantees the anonymity of the complainant, if it is requested, to avoid conflict between the engaged parties. Additionally, we have implemented an investigation and escalation procedure to ensure that related parties cannot intervene in the resolution of sexual assault or sexual harassment cases. This procedure is socialised periodically among workers and is posted in workers' housing areas.

The Musim Mas Gender Committee, an elected body comprising men and women, reviews policies pertaining to human rights and equality issues, with a focus on

vulnerable groups such as women and children. The committee is also responsible for establishing appropriate measures to address concerns such as menstruation leave, breastfeeding, sexual assault and domestic abuse. Under the guidance of Group management, the Committee facilitates the resolution of domestic abuse cases (without discrimination or bias relating to gender), promotes discussion of gender-related issues, disseminates knowledge, and undertakes socialisation of our human rights and equality policies among our workforce and communities.

As part of its work programme, the Gender Committee routinely visits workers' houses and schools to collect information about any sexual harassment or assault cases. An external provider has been engaged to train committee members in the appropriate handling of cases involving sexual harassment and sexual assault.

We believe it is imperative that our policies covering harassment, abuse, discrimination and other types of misconduct are enforced in a meaningful and consistent way. We have therefore started to standardise our disciplinary and termination systems, including the application of sanctions and warnings, to ensure they incorporate proper appeal procedures and clearly defined roles. We are also developing an integrated investigation process to guarantee the objectivity of any disciplinary decision resulting in sanctions.

#### POIG Charter 2.4 - Social conditions:

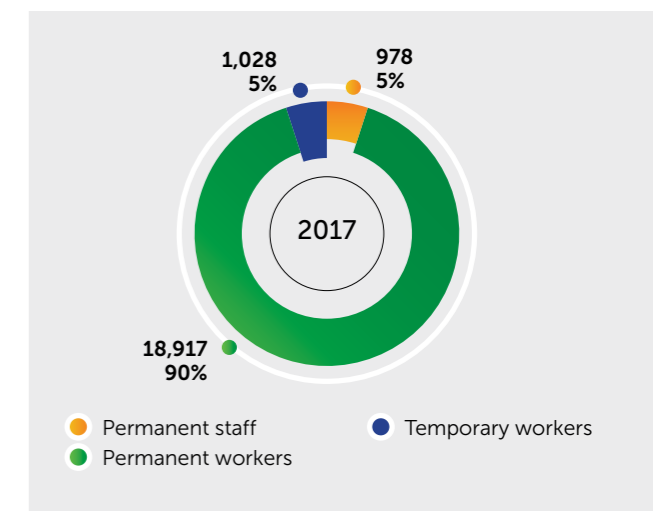
A comprehensive social programme with regular monitoring is in operation to ensure palm oil production does not result in human rights violations, trigger social conflicts, or produce 'land grabbing', and addresses key social equity issues including housing, healthcare, education and empowerment of women.

#### Equal opportunities

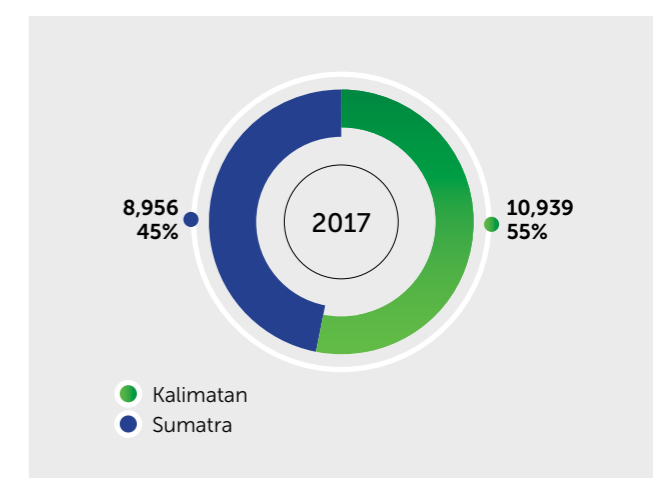
Musim Mas has policies in place to ensure that workers are employed and promoted based on their competency, capability and experience, and regardless of race, nationality, religion, age or union affiliation. We treat all employees equally and reward them fairly based on merit. We employ a total of 20,923 staff and workers across our plantations and mills, as well as 66 managers at middle and senior levels. Women account for 25% and 28% of our total staff and workers respectively.

We provide housing facilities to the heads of families as identified in their registered Family Cards. Family cards are official documents required by the government office to prove residency and family relationships. Historically, mill and estate workers were predominantly men due to the manual nature of oil palm cultivation and processing, and standard practice has always been to provide the housing facility under the husband's name. However, as more women have joined our workforce in recent years, we have changed our policy so it can be implemented regardless of gender. We now provide housing facilities to women who are registered as a heads of families.

#### Employees by category 2017



#### Permanent employees by region 2017



## SOCIAL RESPONSIBILITY

### Wages, benefits, working hours and conditions

Minimum wages in Indonesia differ from province to province because they are set by provincial authorities. We believe that we pay fair wages to all Musim Mas employees, and our salaries are adjusted in line with inflation and minimum wage requirements. We keep records of all salaries and money paid to employees. We also endeavour to ensure our workers are equipped for the workplace through health and safety training, certification training, policy socialisation and collective bargaining socialisation. Beyond this, we provide work-related training by investing in capacity building and technical skills development programmes.

### Musim Mas lowest monthly wage (IDR Rupiah)

	2015	2016	2017
Sumatra	1,615,000	1,800,750	1,949,285
Kalimantan	1,735,000	1,934,600	2,095,000

Note: Lowest monthly wages may differ regionally and within provinces: 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](#).

In addition to wages, Musim Mas provides workers with free facilities such as housing (including electricity and water), education and transport. Based on a survey of living standards and market prices conducted in conjunction with the workers union, the combination of our wages and the facilities provided has a much higher value – approximately 70% – than the minimum living wages set by local governments. We also ensure that parental leave and retirement provisions are adequately provided according to national law, and workers are insured for work-related risks and hazards including disability and invalidity due to occupational hazards.

In 2017, much focus was placed on tightening overtime practices to align with government regulations. At Musim Mas, we ensure that all time and payroll records accurately, reliably and transparently reflect all hours and days worked. We also socialise our workers on the hazard of overtime practices.

We cap overtime at 14 hours a week and three hours a day, with meals. All overtime is paid according to regulations. During extraordinary periods, for instance during peak crop season, certain work such as maintenance is scheduled for Sundays to ensure minimal operational

disruptions to the timely processing of fruit bunches. These extra hours are recorded as rest-day work and/or overtime and the workers are paid a premium accordingly. Workers who choose to work overtime do so voluntarily and are incentivised by the additional pay.

We recognise the concern raised in the Verité labour audit and hence we are reviewing our processes and looking into ways to address the workload during peak crop season.

We are in constant dialogue with union representatives and government bodies over working hours in the palm oil industry and are working towards creating a better policy catered to the type and variety of work available on our plantations. We are also exploring possibilities to carry out a motion study to best capture harvesting targets against hours worked.

Access to clean water can be limited in some parts of Indonesia. While we frequently check to ensure that there is an adequate supply of clean water to houses we provide for, many people still face water shortages due to unequal distribution and inefficient usage. We have therefore introduced a water rationing system to ensure a constant supply of free, clean water to all worker households. The system is based on a three-month water usage study conducted in two housing complexes over two different timeframes in 2017. Based on the data in this study, we have now committed to supply 120 litres of free clean water, per person, per day, to a maximum of five persons per house (higher than current Indonesian and WHO recommended standards). We also consistently socialise our workers and residents in surrounding housing areas to promote the efficient use of water and reduce waste.

### Temporary workers

We respect the rights of all contract, temporary and migrant workers, regardless of gender. As at December 2017, 5% of workers at Musim Mas are considered temporary or short-term contract workers.

Some workers may prefer temporary work to full-time employment. This can be due to childcare or other domestic responsibilities. To allow a certain degree of flexibility, and prevent any misuse of the dispensation to use helpers during peak periods (for instance, where spouses would unofficially accompany their husbands into the field to work), we have initiated a process to formalise the employment status of temporary workers by providing short-term employment contracts and insurance. These workers are then eligible to be recruited as permanent workers. This mechanism ensures that all workers' efforts are formally recognised, and that women are empowered through a direct source of income.

### Workers by contract type



### Freedom of unions and collective bargaining

We respect the rights of all workers regardless of employment status to join workers unions, where currently 86% of our workers belong to the several workers unions. Our collective labour agreement is in line with government regulations and has been registered with the local Manpower office. This agreement is valid for all employees, whether unionised or not. Members are free to meet during working hours to discuss any issues without the presence of management representatives.

The Group's management and the workers' union maintain a positive relationship and meet regularly to discuss matters of concern to members, such as overtime and compensation, working hour policies based on type and variety of work available, work-life balance and menstruation leave.

### Worker complaints and access to grievance mechanisms

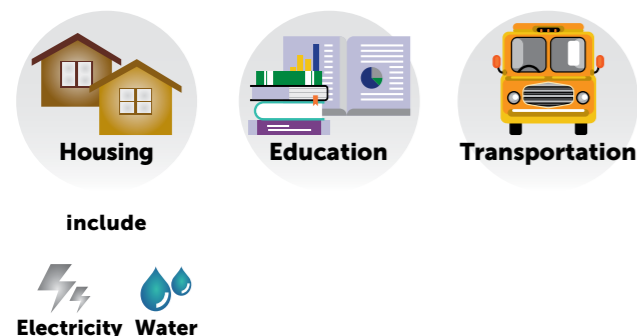
As part of our Sustainability Policy, we commit to ensuring that workers have access to a transparent and accountable grievance mechanism without fear of reprisal or dismissal.

Our internal, site-level grievance procedure has been socialised to our workers and we regularly post reminders about the system on public boards. Employees can raise complaints through suggestion boxes located around our operations, through grievance logbooks at administrative offices, over the phone to Public Affairs Department (*Hubungan Masyarakat*), or through the worker union. Complaints filed with supervisors are escalated to mill managers and all grievances are either processed within a week or are raised in regular management meetings for

### Minimum wage components



### Benefits by Musim Mas



## SOCIAL RESPONSIBILITY

discussion and resolution. The most common complaints we receive involve housing issues. Management regularly recaps on all complaints filed.

We continue exploring ways to improve access to the grievance process and thereby strengthen management's ability to address complaints in a timely and efficient manner. To ensure sufficient protection for complainants, we are considering alternatives to logbooks and direct reports to management, such as anonymous whistleblowing lines and more accessible suggestion boxes. Due to the distances between estate offices and head offices, we are looking to develop a centralised system where grievance cases can be consolidated and reviewed. We will provide workers with adequate and timely information regarding the use of these revised grievance mechanisms.

Musim Mas respects and ensures the anonymity of all complainants and their data is protected to avoid any conflict with any affected party. Internal complaints are handled within the organisation, while details of external complaints are made available in the public domain (see section on Grievances on page 28).

### Occupational health and safety

We are committed to providing a safe and healthy workplace for all our employees. Our occupational safety and health (OSH) policy complies with national laws and

regulations, as well as ILO guidelines. Group-level senior management oversees and reviews the performance of the OSH management system, including performance goals and continuous improvement programmes. These programmes set out clear objectives for improvements across our mills and estates.

A committee responsible for Safety, Health and Environmental Quality is set up at each of our locations to enforce the protocols and standards for safety. Among other tasks, the committees are responsible for identifying potential hazards, ensuring the availability and optimal condition of safety equipment. These committees meet quarterly to discuss safety issues and concerns, and meeting outcomes are reported to the Indonesian Ministry of Manpower. The chair of each committee is the highest-ranking person responsible for the safety of company personnel.

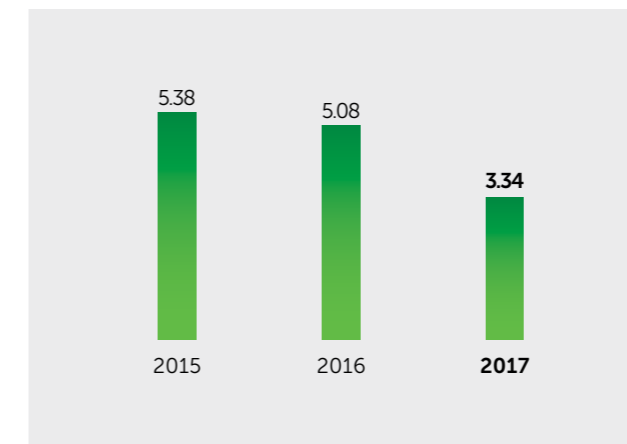
We aim to foster a workplace culture where safety is everybody's responsibility. We conduct regular training and safety drills, including basic safety training, first aid and emergency response procedures, fire-fighting drills and material data safety sheet socialisation for chemicals. We also inculcate the habit of donning adequate PPE, such as gloves, helmets, boots, masks and safety clothing. To further encourage a safety mindset, we have built safety criteria into our employees' personal performance evaluations.



There are 24 clinics and 1,900 first aid kits strategically located across our plantations to ensure ease of accessibility for workers that require first aid or other forms of medical attention. Workers who handle herbicides and pesticides are provided with monthly medical check-ups to ensure their continued wellbeing. We maintain records on illness, which are summarised in monthly reports, and dominant health issues are analysed so that action plans can be prepared to limit their occurrence or prevent their further spread. Information on health issues is socialised among all workers as a preventive measure.

In 2017, we conducted a thorough investigation into the root causes of common accidents in our operations. Results showed that the majority of injuries stem from activities near oil palm trees, where the risk of cuts by the fronds and thorns is high, while other sources of injuries are a result of working tool negligence and occasional motorcycle accidents.

### Lost time accident rate (Frequency rate) per 200,000 working hours



Note to data: Lost time accident rate (Frequency rate) measures the productivity loss due to accidents and is calculated as follows: number of accidents x 200,000 manhours divided by total manhours worked.

### Severity rate

	2015	2016	2017
Group	17.16	19.63	25.21

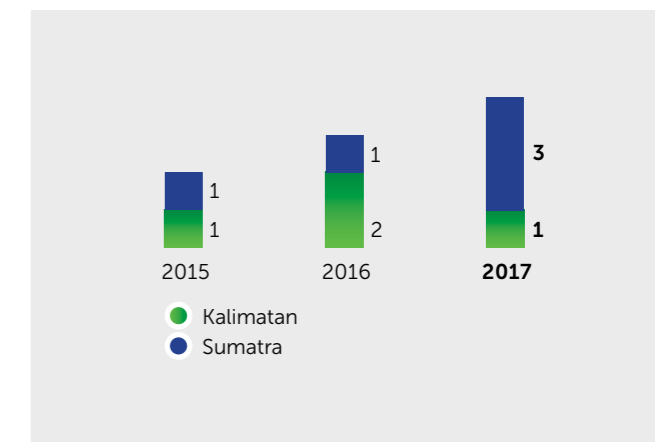
Note to data: Severity rate measures the extent of how critical accidents are and is calculated as follows: number of lost days due to accidents/number of accidents.

As a result of our concerted safety efforts, we are pleased to report that the total number of accidents reported in our operations has nearly halved: from 922 in 2015, to 590 in 2017. We are now placing more emphasis on reducing accident severity, as well as ensuring that all workers are adequately prepared and equipped for higher-risk activities.

It is with great sadness that we report the fatalities of nine employees between 2015 and 2017. Three of the fatalities were due to electrocution, two resulted from vehicle accidents, and two workers were fatally injured while performing tasks using mill machinery. Of the remaining fatalities, one was caused by lightning strike and one resulted from a fatal allergic reaction to a bee sting. Our investigations indicate that the fatalities occurred due to a lack of awareness regarding safety procedures and management, or working without proper authorisation.

Musim Mas takes these events extremely seriously. We investigate every fatal incident and take appropriate measures to eliminate such accidents from our workplaces. Procedures and risk assessment are reviewed and revised where necessary, to minimise these occupational risks and hazards. We also reinforce supervision and safety management with intensive trainings to promote greater awareness to throughout our operations.

### Fatalities



## SOCIAL RESPONSIBILITY

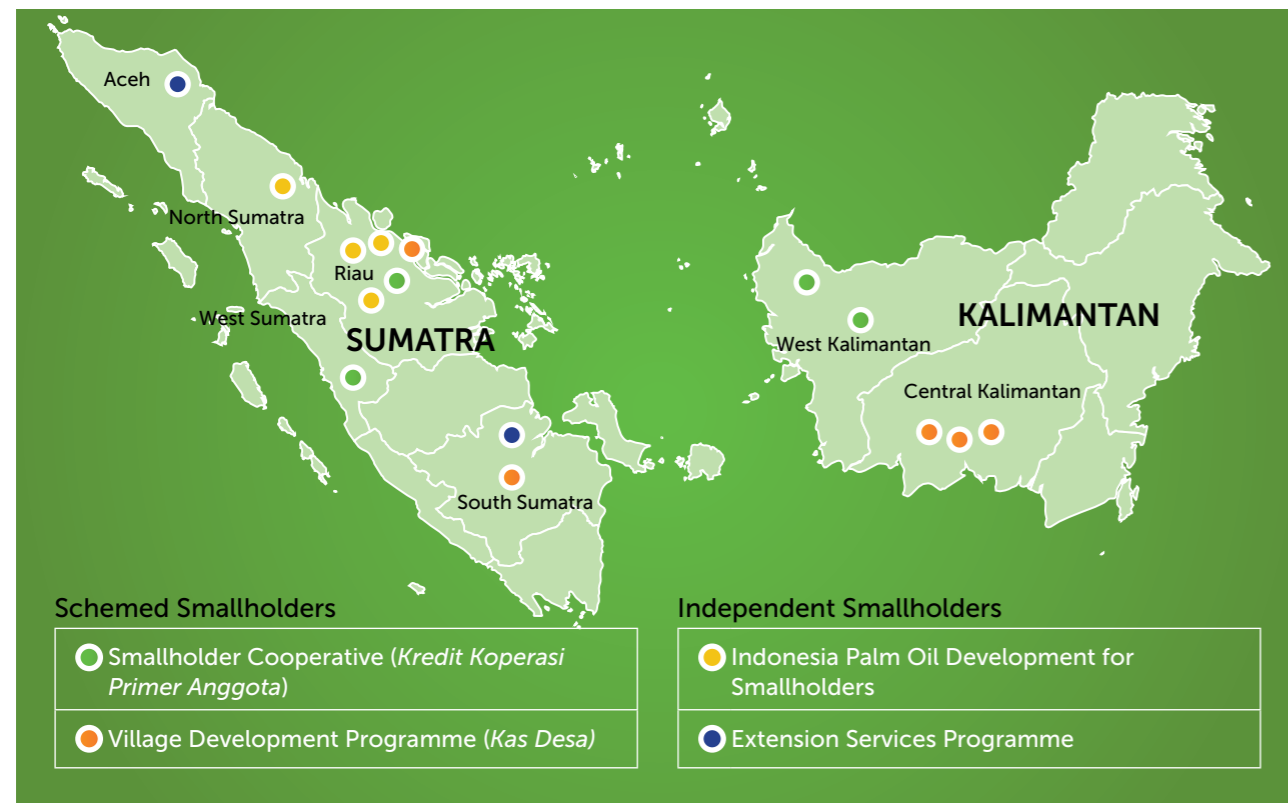
### SMALLHOLDER PROGRAMMES

Smallholder farmers account for around 40% of Indonesia's total palm oil production each year, and their contribution is highly likely to increase in the coming years. Smallholders therefore have a pivotal role to play in helping us to implement our Sustainability Policy and achieve our business goals.

Working with smallholders secures our social licence to operate, but their participation is also vital for our long-term business development in other ways. We rely on them to secure our future supply of fresh fruit bunches (FFB), to maintain good relations with our local communities, and to support our sustainability initiatives.

We in turn recognise our special responsibility to help small independent farmers adopt modern sustainable agricultural practices in order to improve their livelihoods and access the growing sustainable palm oil market.

We provide financial and technical assistance for local communities to develop their arable land into oil palm holdings through our schemed smallholder programmes. We also support independent smallholders that supply both our own and third-party mills through multiple projects and initiatives. While all FFB harvested by schemed smallholders is purchased by the Group, independent smallholders are not bound to any specific mill and are free to sell FFB to the highest bidder.



### Schemed smallholders

Schemed smallholders are structurally bound to a specific mill by contract or credit agreement. We provide them with planting materials such as seeds, fertilisers and pest control, and invest significant resources to assist their adoption of good agricultural practices. Schemed smallholders are generally guided and overseen by the management of the mill, estate or scheme to which they are linked.

We reach out to our schemed smallholders in two ways: through a smallholder cooperative, an individual-based approach tailored to families that own a plantation; and through a village programme, a community-based approach designed for villages that collectively manage plantations. Both programmes were 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.

In 1996, we initiated a primary cooperative credit scheme called *Kredit Koperasi Primer Anggota* (KKPA) for smallholder family units who own two hectares of land or less. KKPA was first introduced in West Pasaman Regency in the Indonesian province of West Sumatra to empower local communities to achieve the necessary technology and skills to undertake palm oil cultivation. The scheme provides smallholders with practical support, including bank loan guarantees, agricultural training, and the transfer of quality seeds and fertilisers.

The KKPA scheme, which was launched with 762 smallholders, now comprises of 2,423 smallholders cultivating a total planted area of 4,620 hectares (as at 31 December 2017).

The smallholders under the KKPA scheme achieved compliance with the RSPO certification requirements in 2010. The KKPA in West Sumatra is the first smallholder scheme in Indonesia to receive the Indonesian National Interpretation of the RSPO P&C certification. These smallholders must now strictly adhere to RSPO standards, undertaking one main audit every five years and four annual surveillance assessments.

The KKPA scheme continues to increase productivity, while the income of schemed smallholders has grown by 49% within the last two years: from IDR 86 billion in 2015, to IDR 128 billion in 2017. This economic growth has directly impacted community development. For instance, the cooperative has contributed to the construction of a mosque, a kindergarten and an indoor sports centre.

For information on our community-based engagement for schemed smallholders, please refer to section on the Village Development Programme on page 65.

### Independent smallholders

Given the smaller scale of their operations, which typically have a planted area of less than 50 hectares, independent smallholders tend to be disadvantaged by limited financial resources and limited access to technology and best operational procedures. This commonly results in low yields and unsustainable practices that make it difficult and costly for them to achieve RSPO certification. We therefore work closely with independent smallholders through partnership programmes and initiatives to help them bridge the gap between current practices and those required for certification. This landscape-level transformation supports the improvement of smallholders' livelihoods and has a positive effect on economic growth.

### Indonesian Palm Oil Development for Smallholders programme

We collaborate with the International Finance Corporation – a member of the World Bank Group – to assist independent smallholders in the surrounding of our operations in North Sumatra and Riau. Musim Mas is the only Indonesian palm oil company to work with IFC on the Indonesian Palm Oil Development for Smallholders programme, the largest of its type in Indonesia. Indonesian Palm Oil Development for Smallholders serves to support independent smallholders in meeting the same efficient farming standards as those adopted by large palm oil organisations. Through the programme we provide smallholders with agronomic training, financial support and access to global markets. We also educate them on legal requirements, such as terminating all use of paraquat. Because many of these practices have been developed outside Indonesia, and may therefore not be accepted by all farmers, we socialise the benefits of instigating such changes and invite guest smallholders who have successfully implemented the practices to share their stories.

Having started with just 539 smallholders at one of our subsidiaries in 2015, the Indonesian Palm Oil Development for Smallholders programme has now been extended to three independent mills in Riau. As at 31 December 2017, the programme benefits 9,652 smallholders in total. By 2020, we aim to have 20,000 smallholders registered under Indonesian Palm Oil Development for Smallholders, and to have built the capacity for 2,000 smallholders to achieve RSPO certification.

### Overview of KKPA schemed smallholders

Company	Name of scheme smallholders	Certified area	Number of families in KKPA
PT Agrowiratama	Koperasi Sawit Bersama I & Koperasi Sawit Bersama II	524	262
PT Agrowiratama	Koperasi Sawit Bosa Sungai Aua Manjunjung Bilang	500	250
PT Agrowiratama	Koperasi Sawit Datuk Bosa Sikilang	500	250
PT Musim Mas	KKPA Rawa Tengkuluk	802	401
PT Musim Mas	KKPA Merbau Sakti	1,066	570



## SOCIAL RESPONSIBILITY

### Extension Services Programme (ESP)

The Musim Mas ESP was conceived in 2017 to address the challenges faced by independent smallholders who supply our third party suppliers. The main objective of ESP is to build strong relationships through active partnerships. ESP was developed based on our own experiences with third-party suppliers, who have demonstrated that many of their supply base challenges are associated with the independent smallholders who supply their mills.

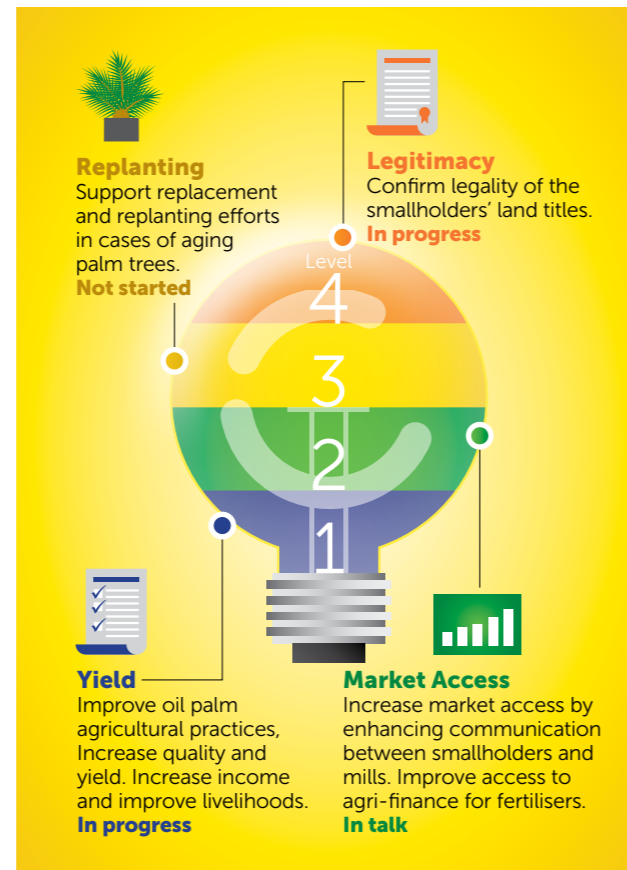
Based on the results of risk assessments and mill questionnaires within priority landscape, which were conducted in 2016, this needs-based programme will focus heavily on good agricultural practices to assist independent smallholders in improving their yields in their specific districts. We launched the programme in South Sumatra in December 2017, and we plan to launch in Aceh in the near future. We expect to reach out to over 400 smallholder farmers in these two districts alone, and we hope to engage a total of 5,000 smallholders by 2020.

The ESP combines hands-on training with informal theory sessions. The curriculum is in line with the Indonesian Palm Oil Development for Smallholders programme (Musim Mas / IFC), and is based on best agricultural practices used by Musim Mas. The handbooks given to the independent smallholders are the same as used in the Indonesian Palm Oil Development for Smallholders project. Ensuring independent smallholders receive accurate and relevant material which they can use in their own blocks. Follow-up visits will be conducted by field coordinators to allow smallholders to benefit from one-on-one sessions to address specific queries on the practical implementation of the training can be

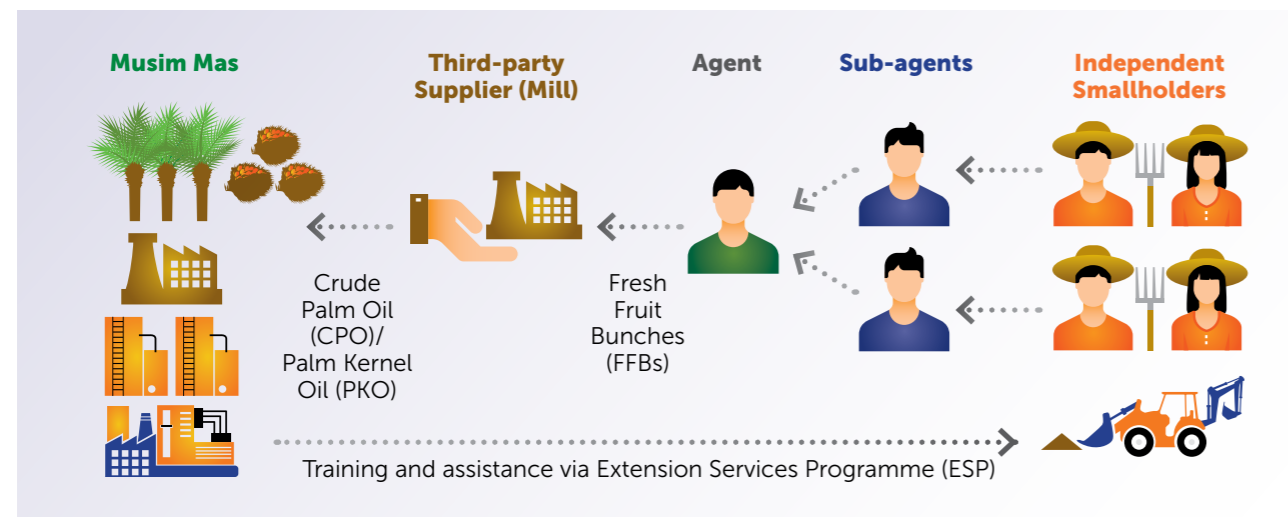
addressed.

As the ESP builds momentum, we will consider scaling it to other regions that are of high importance to our Sustainability Policy implementation plan.

### Key support strategies for smallholders



### Training and assistance via Extension Services Programme (ESP)



### POIG Charter 2.6 - Support palm oil smallholders

Contracts with smallholders are based on a fair, transparent and accountable partnership. Smallholders are supported to improve economic, social and environmental outcomes, including: increase productivity to a comparable benchmark of productivity for the region and a target of having the same productivity as the company nucleus plantation. The productivity gains shall be achieved without expansion that threatens local community food security or additional environmental impact, and support should include financial management and budgeting, logistics and FFB processing, and improved market access such as through group certification. Companies shall report on the support they have provided to smallholders.

### SUPPORTING COMMUNITY DEVELOPMENT AND RESPECTING COMMUNITY RIGHTS

Despite significant economic progress over the last 15 years, the World Bank estimates that there are still 28 million people living below the poverty line in Indonesia. Palm oil production is a powerful engine for rural development and has the potential to raise millions out of poverty. The livelihoods of around 50 million Indonesians, either directly or indirectly, depend on palm oil and its derivatives through multiplier effects that the sector has created. Not only does the sector bring in a huge revenue, it also helps to eradicate poverty and promote economic growth in the country.

Musim Mas strives to be a socially responsible company, and we use every means at our disposal to support rural communities in the fight against poverty. This means providing jobs, basic amenities, medical services and education. By building long-term partnerships with communities and civil society organisations, we seek to address issues that are important to the communities where we operate. And at every point of contact we respect and uphold all human rights, including the rights of indigenous and local communities, families, and other tenure holders.

Through our commitment to community investment, enshrined in our Sustainability Policy and operationalised through our CSR programmes, we build shared value that allows both our communities and our organisation to reap the benefits of sustainable palm oil production.

### Land and community rights

We fully recognise and uphold the rights of local communities, and in particular indigenous landowners, to determine the use of their land. We do not pursue developments or expansion without their Free, Prior and Informed Consent (FPIC). This means that all negotiations concerning compensation for lost benefits and/or the relinquishing of rights are conducted in a non-coercive manner and are agreed upon voluntarily by the communities.

Prior to any land development, Musim Mas socialises the proposed plan among local communities and all relevant information is shared openly, including impact assessments, proposed benefits and legal arrangements. We respond constructively and promptly to requests for information from all stakeholders. All interactions are conducted through open and transparent channels of communication, and consultation is facilitated between growers and/or millers and local communities. We discuss potential community development projects with village heads and villagers, and subsequently report on their progress. There is also frequent interaction with workers' representatives via bilateral meetings and joint consultative committee meetings, as mandated in standard operating procedures. All negotiations concerning compensation for loss of legal or customary rights, or other complaints and grievances, are documented in full.

We also recognise that FPIC is challenging for communities that have strong views on developing their land in a particular way. It is therefore important that any proposed development achieves an optimal balance between community needs, the conservation of natural values, and economic benefits.

## SOCIAL RESPONSIBILITY

### **POIG Charter 2.1 - Free, Prior and Informed Consent (FPIC) of indigenous peoples and local communities:**

Comprehensive FPIC is obtained for all oil palm development including in particular: full respect for their legal and customary rights to their territories, lands and resources via local communities own representative institutions, with all the relevant information and documents made available, with resourced access to independent advice, through a documented process, through a long-term two-way process of consultation and negotiation where the communities are informed and understand that saying no to development is an option, and not constrained by local legal frameworks. Newly acquired already planted plantation areas shall redress any lack of proper FPIC when the plantations were established. Lands will not be acquired through expropriations in the national interest ('eminent domain').

### **Implementing HCV and HCS approaches**

A 2016 diagnostic report on our site verifications in Riau identified a complicating factor in implementing High Conservation Value (HCV) and High Carbon Stock (HCS) approaches: the area has been subject to extensive smallholder development over the last three decades. To address this, we are looking to trial the HCSA with different land-use actors, including smallholders. We will use this trial to understand the challenges faced by independent smallholders as they struggle to meet the HCV or HCS requirements in our Sustainability Policy. Our objective will then be to develop a protection-production plan customised for application at the smallholder level. This plan considers the development needs of the village/community while addressing the need to conserve HCV and HCS. As part of this participatory approach alternative livelihoods may be identified. A comparison of the accuracy and time requirements against standard HCS Approach protocols for large-scale concessions would also be conducted to propose simplified alternatives for application with smallholders.

### **Education**

At Musim Mas we believe that education is the key to economic development and better livelihoods. We provide free education for all employees' children, and have built and funded eight schools within our plantations in Sumatra and Kalimantan. Rated as top schools in each respective region, our schools provide kindergarten

and elementary education to almost 5,000 children of Musim Mas employees, as well as those from the surrounding communities. We are working on building a *Sekolah Menengah Pertama* (secondary school), which is expected to be completed in 2019. In the meantime, we also provide free transport for older students who wish to continue their education at local secondary schools. Beyond basic education, all students have access to computer classes and extra-curricular activities such as sport, music and leadership development. Through Anwar Karim Foundation, we have provided scholarships for underprivileged elementary students in support of equal education opportunities, with six additional scholarships awarded in 2018. With *Gerakan Nasional Orang Tua Asuh* (GNOTA), Musim Mas also annually provides uniforms and books to students living in the communities surrounding our plantations.

### **Community health and food security**

Musim Mas provides free health care to all workers and local communities through 24 medical centres. The service includes medical check-ups and routine vaccinations for infants. Supported by the Anwar Karim Foundation, free public health programmes have also been established through polyclinics in Medan and Surabaya. To ensure that all employees and community members have access to the national health insurance, all medical centres also partner with *Badan Penyelenggara Jaminan Sosial* (BPJS) *Kesehatan*, the Indonesian Social Insurance Administration Organisation.

Acute malnutrition is a serious public health issue in Indonesia. Stunting is prevalent among children and iron-deficiency anaemia is common among women of reproductive age. In 2000, the Indonesian government responded by launching a nation-wide campaign based on the Millennium Development Goals (now the Sustainable Development Goals) to eliminate poverty and hunger, reduce child mortality and improve maternal health. Local governments have since worked to socialise food and nutrition topics to women and children, and to create awareness about the importance of a healthy diet.

We work to ensure that food security is maintained or strengthened through our various facilities and programmes, as well as by supporting local control and diversity of food production systems. Free food is provided to children under five through our integrated family planning service centre, *Pos Pelayanan Keluarga Berencana – Kesehatan Terpadu* (*Posyandu*).

### **Health and nutrition training**

Through our Indonesian Palm Oil Development for Smallholders programme, and in conjunction with IFC,

we recently trialled a health and nutrition training initiative for women in Rantau Prapat. Women were chosen as the focus of the initiative due to their traditional cultural roles of shopping and cooking for their families, as well as their strong influence over other family members' health related attitudes and behaviours.

Participants were introduced to the food pyramid, which illustrates the optimal proportions of each food group needed to achieve a balanced diet. They were also reminded of the useful motto "*Empat Sehat Lima Sempurna*", or "Four Healthy Five Perfect." To date, about 1,150 women from Rantau Prapat have participated in the health and nutrition training, and many have adopted healthier practices. Musim Mas and IFC are looking to replicate this educational outreach programme in other villages.

### **Securing land for gardens**

To address malnutrition and vitamin deficiency, we provide all our plantation workers with enough land to cultivate fruit and vegetables. As of 2017, the land area provided for this purpose totals 15.7 hectares. In addition, the houses we provide for workers include a designated plot of land for gardening. We also require community members that sell land to the company to confirm that they have retained enough land to meet their own needs. This principle is also applied during the FPIC process for schemed smallholder developments.

In 2018, as part of a participatory mapping exercise to assess current land use patterns, we will identify potential garden plots and farmlands in concessions and surrounding community areas. The results of this mapping exercise will be incorporated into social management plans and included in participatory land use planning following the HCSA guidelines.

### **POIG Charter 2.2 - Food security**

As part of the Free, Prior and Informed Consent (FPIC) process, participatory Social Impact Assessments (SIA) and participatory land use planning with indigenous and local communities, food security is maintained or strengthened in order to maintain their land use choice and future food security options. This will include not undermining local control of and diversity of food production systems. There is transparency of the land allocation process.

### **Village Development Programmes (VDP)**

In 2000, Musim Mas launched an outreach initiative for schemed smallholders known as the Village Development Programme (VDP). Unlike our smallholder cooperative approach, which targets individual smallholder units, VDP is tailored for community-managed plantations. Having started out with four villages covering 12 hectares, today we work with 14 villages under the programme.

Through VDP, Musim Mas facilitates funding and investment for oil palm development while providing the 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 the plantation receive the proceeds from sales of FFB. These proceeds are used to cover operational costs and as instalments towards investment costs. VDP is set up to promote economic independence and improve the welfare of communities in the surrounding areas by managing oil palm plantations while the land remains under their ownership.

As a result of VDP, the combined income of the villages (based on 2015 data) has almost doubled in the last two years, totalling IDR 923 million as at 2017. This is principally due to rising FFB prices and increased production.

### **Other ongoing CSR programmes**

In addition to our community programmes, we operate a long-standing outreach initiative through the Anwar Karim Foundation. Under the foundation, Musim Mas executes programmes that include providing shelter for orphans and the elderly in Surabaya, and contributing to the livelihoods of the underprivileged. The programme explores ways to ensure that children become literate and self-reliant individuals.

The Foundation supports the national efforts to tackle the impact of natural disasters such as the earthquake and tsunami in Sulawesi (2018). It dispatched food and other necessities to the disaster-stricken areas.

Our other community projects for smallholders include the construction of wells, road repairs, free medical aid and financial assistance for local community projects. These programmes create employment and increase income levels across the community.

## BASE DATA

### ECONOMIC

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Income statement</b>				
Revenue	US\$ billion	7.3	5.5	5

### LAND AND PRODUCTION

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Total titled land area</b>				
	<b>ha</b>	<b>194,204</b>	<b>193,729</b>	<b>193,497</b>
<b>Oil palm plantations</b>				
<b>Planted area</b>				
	<b>ha</b>	<b>121,494</b>	<b>119,994</b>	<b>116,280</b>
Mature	ha	101,621	97,348	95,118
Immature	ha	19,873	22,646	21,162
<b>Nucleus planted area</b>				
	<b>ha</b>	<b>116,874</b>	<b>115,405</b>	<b>111,971</b>
Mature	ha	97,525	93,493	91,866
Immature	ha	19,349	21,912	20,105
<b>Scheme smallholder planted area</b>				
	<b>ha</b>	<b>4,620</b>	<b>4,589</b>	<b>4,309</b>
Mature	ha	4,096	3,855	3,252
Immature	ha	524	734	1,057
<b>Production and productivity</b>				
<b>Total FFB</b>				
	<b>MT</b>	<b>3,341,946</b>	<b>2,781,095</b>	<b>3,073,391</b>
FFB produced – own plantations	MT	2,272,841	1,944,448	2,138,567
FFB produced – schemed smallholders	MT	101,845	87,510	92,162
FFB volume purchased from third parties	MT	967,260	749,137	842,662
Crude palm oil	MT	754,568	629,794	703,397
Palm kernel	MT	191,371	158,484	177,856
FFB processed – own plantation	MT FFB/ha	22.7	20.5	23.1
FFB processed – schemed smallholders	MT FFB/ha	27.0	25.4	28.0
Extraction rate – crude palm oil	%	22.6	22.7	22.9
Extraction rate – palm kernel	%	5.7	5.7	5.8
<b>Conservation area</b>				
<b>Total area set aside for conservation (HCV and riparian/buffer zones)</b>				
	<b>ha</b>	<b>19,228</b>	<b>19,228</b>	<b>19,228</b>
HCV (excluding riparian/buffer zones)	ha	13,093	13,093	13,093
Riparian/buffer zones	ha	6,135	6,135	6,135

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>High Carbon Stock area</b>				
Total HCS area identified*	ha	1,800	0	0
<b>Peat</b>				
Total peat area planted	ha	35,287	35,293	35,293
Total peat area conserved	ha	3,536	3,536	3,536
<b>Certification</b>				
RSPO certified – own plantation area	ha	135,710	135,710	135,710
RSPO certified – schemed smallholder area	ha	3,474	3,454	3,252
RSPO certified mills	no.	10	10	10
ISPO certified mills	no.	4	4	4
ISCC certified mills	no.	11	10	10
POIG audited mills	no.	4	2	0

\* The area identified may subject to change following completion of the Quality Review Process

### ENVIRONMENT

<b>Water usage</b>				
Plantation	Million m <sup>3</sup>	1.14	1.01	1.00
Mill	Million m <sup>3</sup>	3.26	2.82	2.50
Water usage per tonne of FFB processed – mills	m <sup>3</sup> /MT FFB processed	1.19	1.24	0.99
<b>Water consumption</b>				
Blue water	Million m <sup>3</sup>	6.34	5.49	N/A
Green water	Million m <sup>3</sup>	1,548.17	1,526.33	N/A
Grey water	Million m <sup>3</sup>	342.38	459.68	N/A
<b>Effluents</b>				
BOD levels river discharge	mg/l	66	77	77
BOD levels land application – Sumatra	mg/l	48	52	74
BOD levels land application – Kalimantan	mg/l	36	46	65
<b>Phosphorous and nitrogen in water courses</b>				
P-level inlet – Sumatra	mg/l	0.18	N/A	N/A
P-level outlet – Sumatra	mg/l	0.17	N/A	N/A
P-level inlet – Kalimantan	mg/l	0.06	N/A	N/A
P-level outlet – Kalimantan	mg/l	0.06	N/A	N/A
N-level inlet – Sumatra	mg/l	1.02	N/A	N/A
N-level outlet – Sumatra	mg/l	0.93	N/A	N/A
N-level inlet – Kalimantan	mg/l	0.81	N/A	N/A
N-level outlet – Kalimantan	mg/l	0.57	N/A	N/A

## BASE DATA

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Fertiliser type and usage</b>				
Inorganic fertiliser	'000 MT	140.57	163.64	134.44
Palm oil mill effluent	Million m <sup>3</sup>	1.59	1.45	1.40
Total organic fertiliser (DDS and boiler ash)	'000 MT	70.00	48.47	55.23
<b>Herbicide usage</b>				
Toxicity per hectare planted – Sumatra	Toxicity unit/ha	484	474	400
Toxicity per hectare planted – Kalimantan	Toxicity unit/ha	430	440	400
<b>Energy consumption from renewable sources</b>				
Palm kernel shells	'000 MT	42.93	30.25	30.13
Palm kernel shells – energy	Million Gigajoule	0.65	0.46	0.46
Palm fibre	'000 MT	645.93	570.48	630.27
Palm fibre – energy	Million Gigajoule	5.00	3.98	4.94
<b>GHG emissions</b>				
Total carbon emissions at mill	MT CO <sub>2</sub> e/MT CPO	3.39	3.33	3.15
<b>Fire incidents</b>				
Hotspots within concession	no.	35	90	433
Fires within concession	no.	4	14	89
Area burnt within concession	Ha	4.74	107.75	1,472.25
Hotspots surrounding concession boundaries*	no.	130	15	41
Fires surrounding concession boundaries	no.	33	6	26
Area burnt surrounding concession boundaries	Ha	125.90	21.46	643.92

\*MM monitor up to 3km of its surrounding concession boundaries

## EMPLOYEES

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Employees at Group-level</b>				
<b>Group total</b>	<b>no.</b>	<b>37,938</b>	<b>29,573</b>	<b>N/A</b>
By country	Indonesia	36,495	28,301	N/A
	Malaysia	221	214	N/A
	Singapore	295	256	N/A
	Other countries	927	802	N/A
By category (full-time equivalent)	Management level	440	390	N/A
	Non-managerial	30,434	29,183	N/A
By gender (full-time equivalent)	Male	23,143	22,148	N/A
	Female	7,731	7,425	N/A

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Employees at plantation- and mill-level</b>				
<b>Total staff (permanent only)</b>	<b>no.</b>	<b>978</b>	<b>991</b>	<b>1,087</b>
By gender	Male	737	757	837
	Female	241	234	250
<b>Total workers</b>	<b>no.</b>	<b>19,945</b>	<b>18,919</b>	<b>19,045</b>
By contract type	Permanent	18,917	17,955	17,895
	Temporary	1,028	964	1,150
By gender	Male	14,337	13,672	13,848
	Female	5,608	5,247	5,197

## HEALTH AND SAFETY

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
Lost time accident rate (per 200,000 working hours)	Total	3.34	5.08	5.38
Severity rate (average days lost per accident)	Total	25.21	19.63	17.16
Fatalities	no.	4	3	2

## SOCIAL AND COMMUNITY

Category/Indicator	Measurement unit/breakdown	FY2017	FY2016	FY2015
<b>Support for smallholders</b>				
Schemed smallholders	no.	2,423	2,423	2,304
Schemed smallholder programmes	no.	7	7	7
Trainings provided to schemed smallholders	no.	99	85	57
Total income of schemed smallholders	IDR billion	127.9	98.6	85.7
Independent smallholders covered by Indonesian Palm Oil Development for Smallholders programmes	no.	9,652	3,178	539

BASE DATA

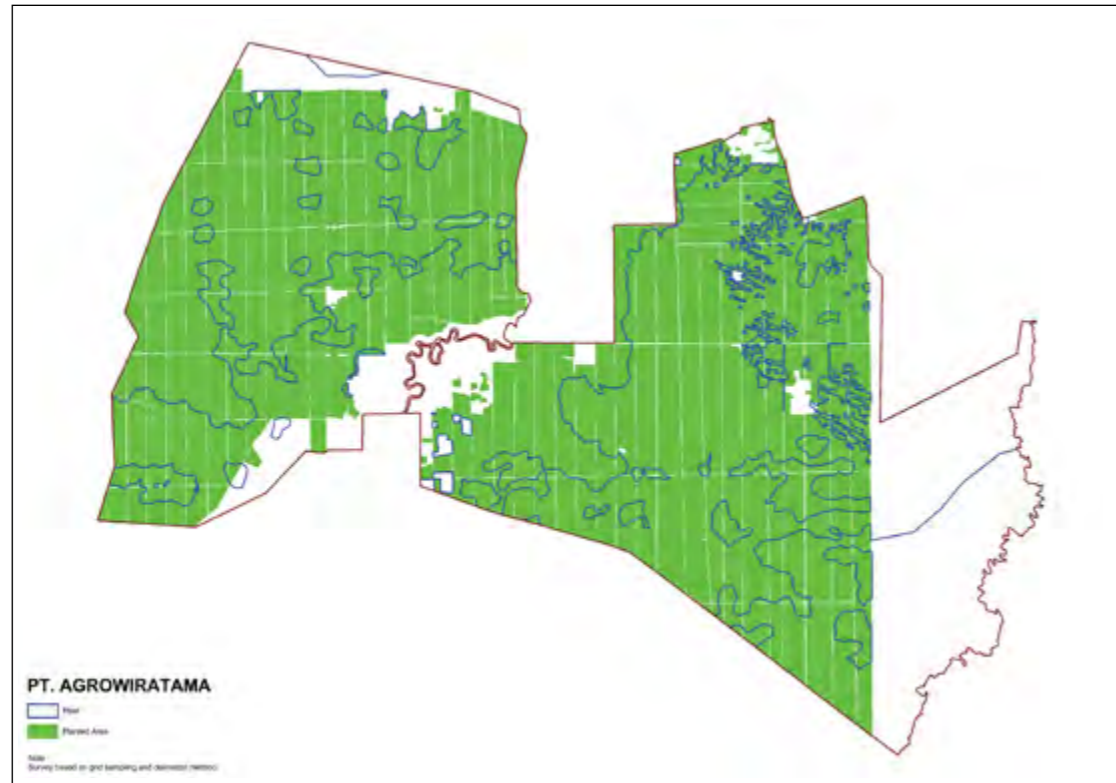
FAUNA INVENTORY UNDER IUCN RED LIST OF THREATENED SPECIES

IUCN Status	Scientific name	Common name	Species	
Critically Endangered (CR)	Alcedo euryzona	Javan Blue-banded Kingfisher ( <i>Raja Udang Kalung Biru</i> )	Bird	
	Presbytis chrysomelas	Bornean Banded Langur ( <i>Surili Serawak</i> )	Mammal	
Endangered (EN)	Ciconia stormi	Storm's Stork ( <i>Bangau Strom</i> )	Bird	
	Pycnonotus zeylanicus	Straw-headed Bulbul ( <i>Cucak Rawa</i> )	Bird	
	Hylobates agilis	Agile Gibbon ( <i>Owa Ungko</i> )	Mammal	
	Hylobates albibarbis	Bornean Agile Gibbon ( <i>Owa Kalimantan</i> )	Mammal	
	Hylobates syndactylus	The Siamang ( <i>Siamang</i> )	Mammal	
	Nasalis larvatus	Proboscis Monkey ( <i>Bekantan</i> )	Mammal	
	Tapirus indicus	Malayan Tapir ( <i>Tapir Asia</i> )	Mammal	
	Orlitia borneensis	Malayan Giant Turtle ( <i>Kura-kura Sungai Kalimantan</i> )	Reptile	
Vulnerable (VU)	Ciconia episcopus	Asian Woollyneck ( <i>Bangau Hitam</i> )	Bird	
	Acridotheres javanicus	Javan Myna ( <i>Kerak Kerbau</i> )	Bird	
	Arborophila orientalis	White-faced Partridge ( <i>Puyuh Gonggong Biasa</i> )	Bird	
	Chloropsis sonnerati	Greater Green Leafbird ( <i>Cica Daun Besar</i> )	Bird	
	Leptoptilos javanicus	Lesser Adjutant ( <i>Bangau Tongtong</i> )	Bird	
	Melanoperdix niger	Black Partridge ( <i>Puyuh Hitam</i> )	Bird	
	Aonyx cinerea	Asian Small-clawed Otter ( <i>Berang Berang Cakar Kecil</i> )	Mammal	
	Cervus unicolor	Sambar Deer ( <i>Rusa Sambar</i> )	Mammal	
	Macaca nemestrina	Pig Tailed Macaque ( <i>Beruk</i> )	Mammal	
	Nycticebus coucang	The Sunda Slow Loris/Greater Slow Loris ( <i>Kukang Sunda</i> )	Mammal	
	Presbytis thomasi	Thomas's Langur ( <i>Kedih</i> )	Mammal	
	Sus barbatus	The Bornean Bearded Pig ( <i>Babi Berjenggot</i> )	Mammal	
	Amyda cartilaginea	Asiatic Softshell Turtle ( <i>Bulus</i> )	Reptile	
	Ophiophagus hannah	King Cobra ( <i>Ular Kobra/Ular Anang</i> )	Reptile	
	Tomistoma schlegelii	False Gharial ( <i>Senyulong/Buaya Sepit</i> )	Reptile	
	Near Threatened (NT)	Actenoides concretus	Rufous-collared Kingfisher ( <i>Cekakak Hutan Melayu</i> )	Bird
		Aegithina viridissima	Green Iora ( <i>Cipoh Jantung</i> )	Bird
Anthracoceros malayanus		Black Hornbill ( <i>Kangkareng Hitam</i> )	Bird	
Anthreptes rhodolaemus		Red-throated Sunbird ( <i>Burung Madu Leher-Merah</i> )	Bird	
Anthreptes rhodolaemus		Red-throated Sunbird ( <i>Madu Leher Merah</i> )	Bird	
Argusianus argus		Great Argus ( <i>Kuau Raja</i> )	Bird	
Buceros bicornis		Great Hornbill ( <i>Rangkong Papan</i> )	Bird	
Buceros rhinoceros		Rhinoceros Hornbill ( <i>Rangkong Badak</i> )	Bird	
Caloramphus hayii		Malay Brown Barbet ( <i>Takur Ampis</i> )	Bird	
Chloropsis cochinchinensis		Javan Leafbird ( <i>Cica Daun Sayap Biru</i> )	Bird	
Chloropsis cyanopogon		Lesser Green Leafbird ( <i>Cica Daun Kecil</i> )	Bird	

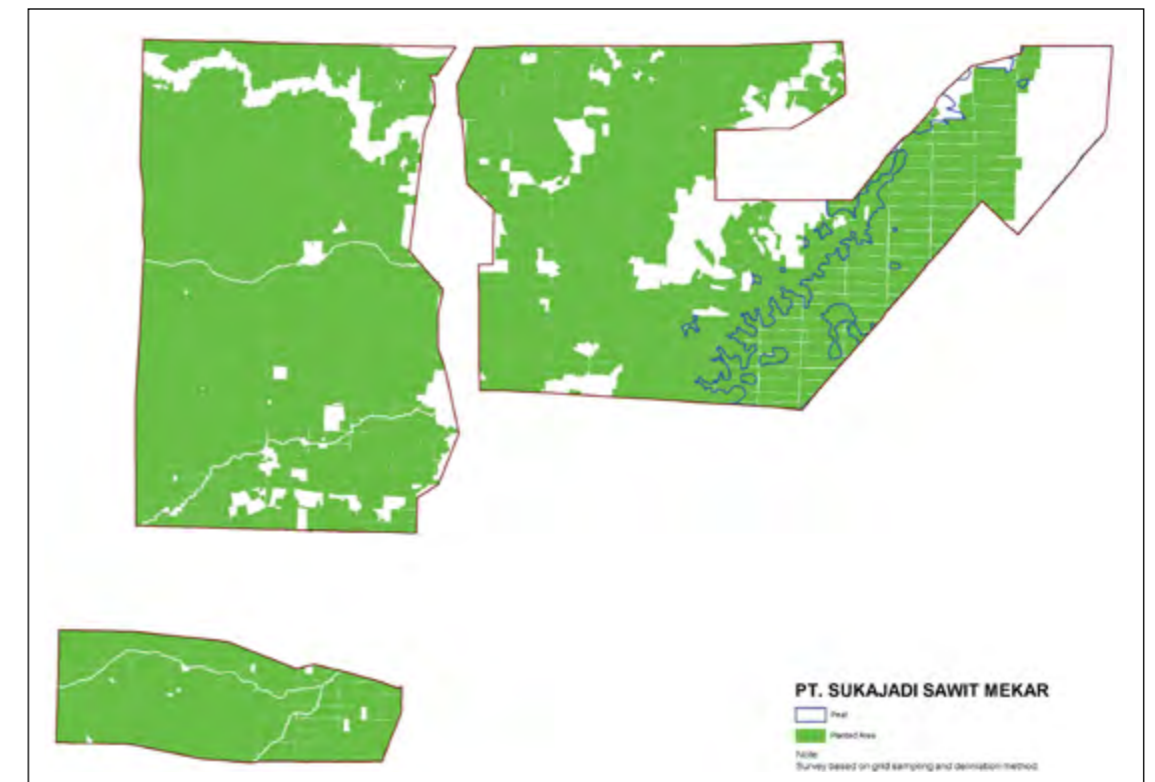
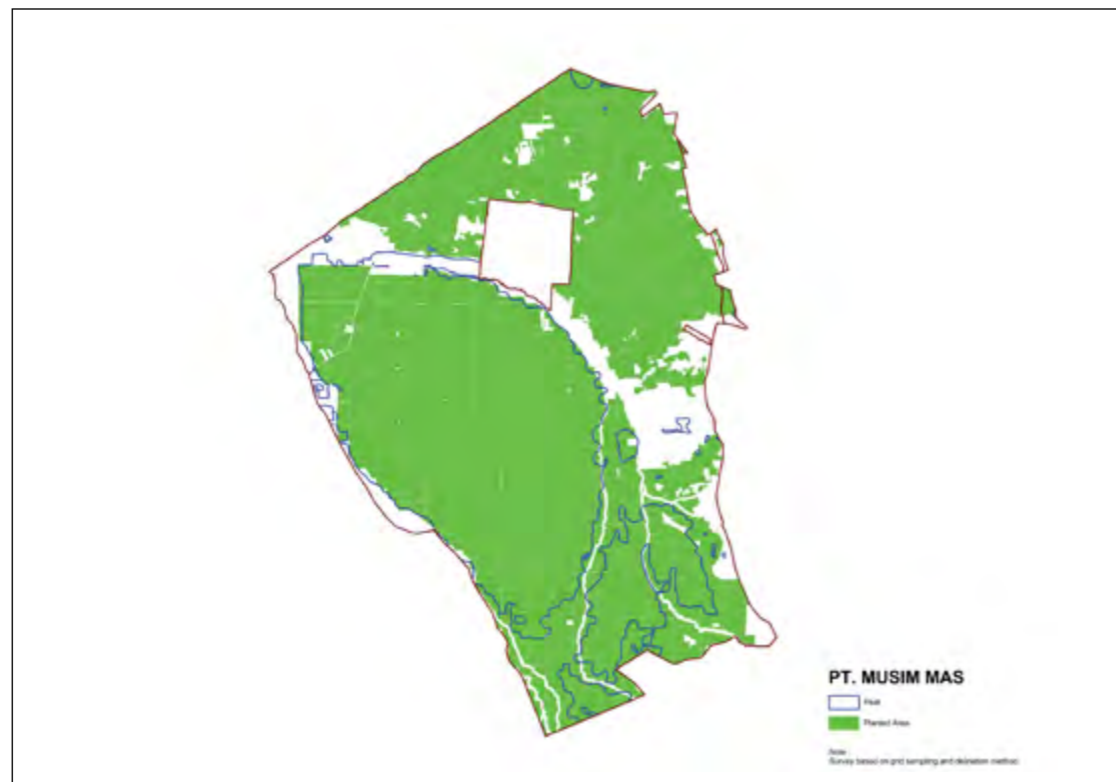
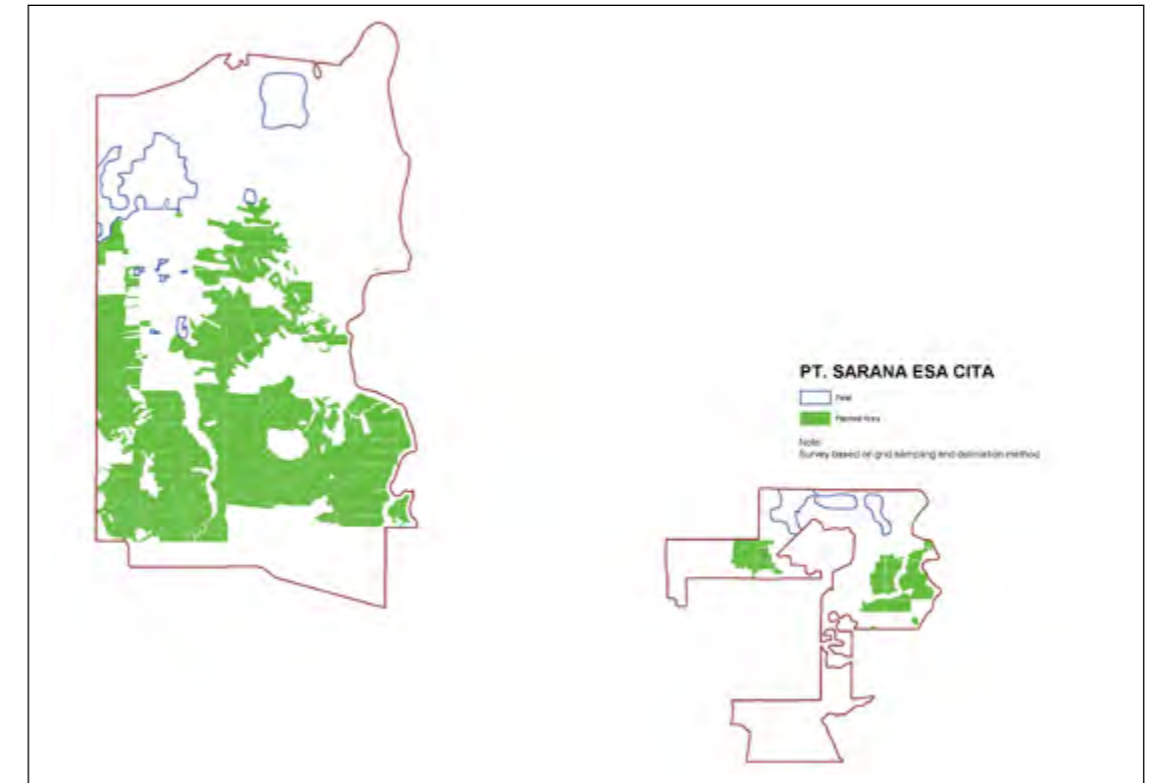
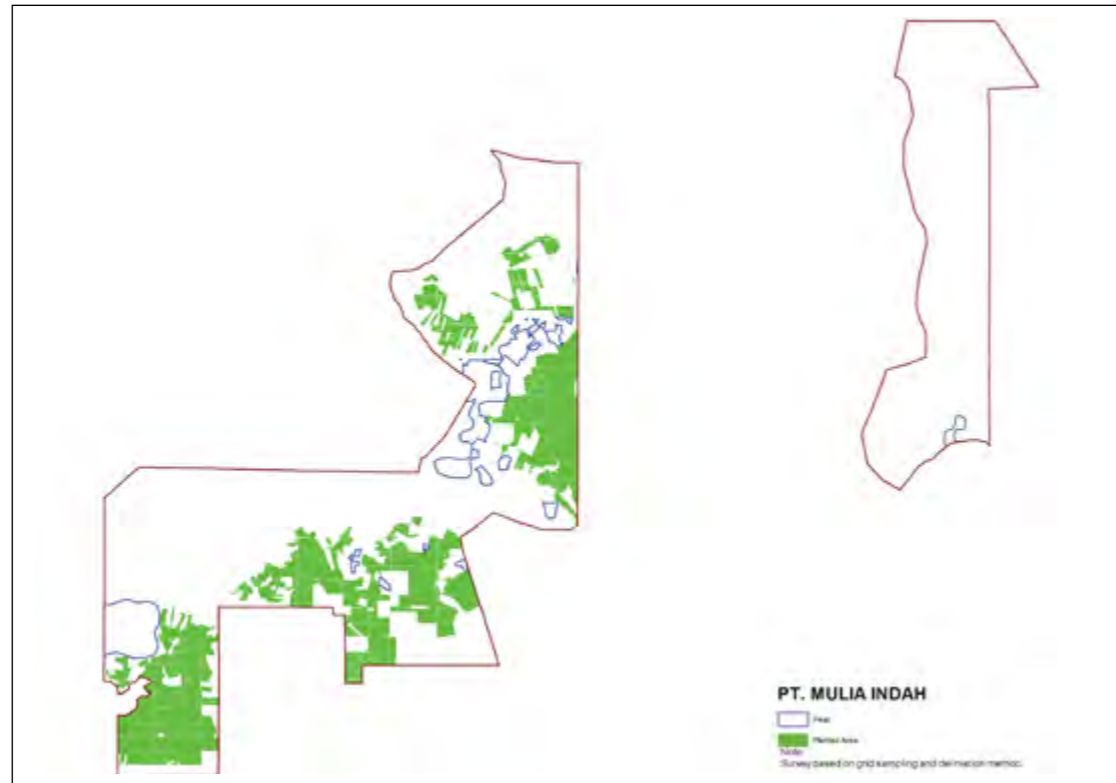
IUCN Status	Scientific name	Common name	Species
Near Threatened (NT)	Chrysophlegma humii	Chequer-throated Yellowname ( <i>Pelatak Kumis Kelabu</i> )	Bird
	Cyornis umbratilis	Grey-chested Jungle-flycatcher ( <i>Sikatan Rimba Dada Kelabu</i> )	Bird
	Dicaeum everetti	Brown-backed Flowerpecker ( <i>Cabai Tunggir Coklat</i> )	Bird
	Eurylaimus ochromalus	Black-and-yellow Broadbill ( <i>Sempur Hujan Darat</i> )	Bird
	Harpactes kasumba	Red-naped Trogon ( <i>Luntur Kasumba</i> )	Bird
	Ichthyophaga humilis	Lesser Fish-eagle ( <i>Elang Ikan Kecil</i> )	Bird
	Ichthyophaga ichthaetus	Grey-headed Fish-eagle ( <i>Elang Ikan Kepala Kelabu</i> )	Bird
	Macronus ptilosus	Fluffy-backed Tit-babbler ( <i>Ciung Air Pong Pong</i> )	Bird
	Malacopteron affine	Sooty-capped Babbler ( <i>Asi Topi Jelaga</i> )	Bird
	Meiglyptes tristis	White-rumped Woodpecker ( <i>Caladi Batu</i> )	Bird
	Pericrocotus igneus	Fiery Minivet ( <i>Sepah Tulin</i> )	Bird
	Phaenicophaeus diardi	Black-bellied Malkoha ( <i>Kadalan Beruang</i> )	Bird
	Pityriasis gymnocephala	Bornean Bristlehead ( <i>Tiong Batu Kalimantan</i> )	Bird
	Platylophus galericulatus	Crested Jay ( <i>Tangkar Ongklet</i> )	Bird
	Prionochilus thoracicus	Scarlet-breasted Flowerpecker ( <i>Pentis Kumbang</i> )	Bird
	Psittacula alexandri	Red-breasted Parakeet ( <i>Betet Biasa</i> )	Bird
	Psittacula longicauda	Long-tailed Parakeet ( <i>Betet Ekor Panjang</i> )	Bird
	Psittinus cyanurus	Blue-rumped Parrot ( <i>Nuri Tanau</i> )	Bird
	Pycnonotus cyaniventris	Grey-bellied Bulbul ( <i>Cucak Kelabu</i> )	Bird
	Rhabdotorrhinus corrugatus	Wrinkled Hornbill ( <i>Julang Jambul Hitam</i> )	Bird
	Treron fulvicollis	Cinnamon-headed Green-pigeon ( <i>Punai Bakau</i> )	Bird
	Trichastoma rostratum	White-chested Babbler ( <i>Pelanduk Dada Putih</i> )	Bird
	Trichixos pyrropygus	Rufous-tailed Shama ( <i>Kucica Ekor Kuning</i> )	Bird
	Pteropus vampyrus	Large Flying Fox ( <i>Kalong Besar</i> )	Mammal
	Trachypithecus cristatus	Silvery Lutung ( <i>Lutung Kelabu</i> )	Mammal
	Cyclernys dentata	Asian Leaf Turtle ( <i>Kura-kura Bergerigi</i> )	Reptile

## BASE DATA

### PEAT MAP



BASE DATA



## 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 and 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.

There are two options for preparing a report in accordance with the GRI Standards: Core and Comprehensive. This report has been prepared in accordance with the GRI Standards: Core option.

GRI 101: Foundation 2016		
GRI 102: General Disclosures 2016		
Disclosure	Page or reason for omission	
<b>Organisational Profile</b>		
102-1	Name of organisation	About Musim Mas 5
102-2	Activities, brands, products, and services	About Musim Mas 5, 8 - 9 Our operations 10 - 13 Our marketplace 13
102-3	Location of headquarters	About Musim Mas 5
102-4	Location of operations	Global and operational presence 8
102-5	Ownership and legal form	About Musim Mas 5
102-6	Markets served	About Musim Mas 5 Our marketplace 13
102-7	Scale of the organisation	About Musim Mas 5 Our operations 10 - 13
102-8	Information on employees and other workers	About Musim Mas 5 Protecting human rights in the workplace 51 - 58
102-9	Supply chain	Ensuring a traceable supply chain 29 - 30
102-10	Significant changes to the organisation and its supply chain	No major changes in the reporting period
102-11	Precautionary Principle or approach	Our approach to sustainability 15 - 16 Promoting positive environmental impacts 35 Note: The RSPO and HCS Approach require a precautionary approach
102-12	External initiatives	Sustainability certification and verification 17 - 22
102-13	Membership of associations	Key stakeholder engagements and partnerships 24 - 26
<b>Strategy</b>		
102-14	Statement from senior decision-maker	Chairman welcome 2
102-15	Key impacts, risks, and opportunities	Our achievement 3 Our targets 3 About the report 85
<b>Ethics and Integrity</b>		
102-16	Values, principles, standards, and norms of behaviour	Our approach to sustainability 15 - 16 Sustainability governance and ethics 27
102-17	Mechanisms for advice and concerns about ethics	Sustainability governance and ethics 27 Grievances 28 Worker complaints and access to grievance mechanisms 57 - 58

GRI 101: Foundation 2016		
GRI 102: General Disclosures 2016		
Disclosure	Page or reason for omission	
<b>Governance</b>		
102-18	Governance structure	Corporate governance 6 - 7
102-19	Delegating authority	Corporate governance 6 - 7
102-20	Executive-level responsibility for economic, environmental, and social topics	Corporate governance 6 - 7
102-21	Consulting stakeholders on economic, environmental, and social topics	Key stakeholder engagements and partnerships 24 - 26
102-22	Composition of the highest governance body and its committees	Corporate governance 6 - 7
102-23	Chair of the highest governance body	Corporate governance 6 - 7
102-26	Role of highest governance body in setting purpose, values, and strategy	Corporate governance 6 - 7
102-27	Collective knowledge of highest governance body	Corporate governance 6 - 7
102-29	Identifying and managing economic, environmental, and social impacts	Our approach to sustainability 15 - 16 About the report 85
102-31	Review of economic, environmental, and social topics	Corporate governance 6 - 7
102-32	Highest governance body's role in sustainability reporting	Corporate governance 6 - 7
102-33	Communicating critical concerns	Grievances 28
102-34	Nature and total number of critical concerns	Grievances 28
<b>Stakeholder Engagement</b>		
102-40	List of stakeholder groups	Key stakeholder engagements and partnerships 24 - 26
102-41	Collective bargaining agreements	Freedom of unions and collective bargaining 57
102-42	Identifying and selecting stakeholders	Our approach to sustainability 15 - 16 Key stakeholder engagements and partnerships 24 About the report 85
102-43	Approach to stakeholder engagement	Our approach to sustainability 15 - 26 Key stakeholder engagements and partnerships 24 - 26 Sustainability Policy implementation for third-party suppliers 31 - 33 Landscape initiatives 33 Smallholder programmes 60 Supporting community development and respecting community rights 63 About the report 85
102-44	Key topics and concerns raised	Report purpose and scope 4 Ensuring a traceable supply chain 29 - 30 Promoting positive environmental impacts 35 Social responsibility 51 Smallholder programmes 60 Supporting community development and respecting community rights 63 About the report 85



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GRI 101: Foundation 2016		
GRI 102: General Disclosures 2016		
Disclosure	Page or reason for omission	
<b>Reporting Practice</b>		
<b>102-46</b>	Defining report content and topic Boundaries	Report purpose and scope 4 About the report 85
<b>102-47</b>	List of material topics	About the report 85
<b>102-48</b>	Restatements of information	This is the first Musim Mas sustainability report
<b>102-49</b>	Changes in reporting	This is the first Musim Mas sustainability report
<b>102-50</b>	Reporting period	Report purpose and scope 4 About the report 85
<b>102-51</b>	Date of most recent report	This is the first Musim Mas sustainability report
<b>102-52</b>	Reporting cycle	Report purpose and scope 4 About the report 85
<b>102-53</b>	Contact point for questions regarding the report	Contact
<b>102-54</b>	Claims of reporting in accordance with the GRI Standards	GRI Content Index 76
<b>102-55</b>	GRI Content Index	GRI Content Index 76 - 84
<b>102-56</b>	External assurance	We have not engaged third party assurance About the report 85

Material Topics			
GRI Standard	Disclosure	Page or reason for omission	
<b>ECONOMIC</b>			
<b>Economic Performance</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	About Musim Mas 5 - 13
	103-2	The management approach and its components	About Musim Mas 5 - 13
	103-3	Evaluation of the management approach	About Musim Mas 5 - 13
<b>GRI 201: Economic Performance 2016</b>	201-1	Direct economic value generated and distributed	About Musim Mas 5 - 13 Wages, benefits, working hours and conditions 56 Base data 66
<b>Market Presence</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Protecting human rights in the workplace 54 Wages, benefits, working hours and conditions 56
	103-2	The management approach and its components	Social responsibility 51 Protecting human rights in the workplace 54
	103-3	Evaluation of the management approach	2016 Verité labour assessment 52 - 53 Wages, benefits, working hours and conditions 56
<b>GRI 202: Market Presence 2016</b>	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Equal opportunities 55 Wages, benefits, working hours and conditions 56

Material Topics			
GRI Standard	Disclosure	Page or reason for omission	
<b>ECONOMIC</b>			
<b>Indirect Economic Impacts</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Social responsibility 51 Smallholder programmes 60 Supporting community development and respecting community rights 63
	103-2	The management approach and its components	Smallholder programmes 60 - 62 Supporting community development and respecting community rights 63 - 65
	103-3	Evaluation of the management approach	Smallholder programmes 60 - 62 Supporting community development and respecting community rights 63 - 65
<b>GRI 203: Indirect Economic Impacts 2016</b>	203-1	Infrastructure investments and services supported	Smallholder programmes 60 - 62 Supporting community development and respecting community rights 63 - 65
	203-2	Significant indirect economic impacts	Smallholder programmes 60 - 62 Community health and food security 64 - 65
<b>Procurement Practices</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Our approach to sustainability 15 - 16 Ensuring a traceable supply chain 29 - 30 Sustainability Policy implementation for third-party suppliers 31 - 33 Smallholder programmes 60
	103-2	The management approach and its components	Ensuring a traceable supply chain 29 - 30 Sustainability Policy implementation for third-party suppliers 31 - 33 Smallholder programmes 60 - 62
	103-3	Evaluation of the management approach	Ensuring a traceable supply chain 29 - 30 Sustainability Policy implementation for third-party suppliers 31 - 33 Smallholder programmes 60 - 62
<b>Anti-corruption</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Sustainability governance and ethics 27
	103-2	The management approach and its components	Sustainability governance and ethics 27
	103-3	Evaluation of the management approach	Sustainability governance and ethics 27
<b>ENVIRONMENTAL</b>			
<b>Materials</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Our operations 10 - 13 Focus on productivity and yield enhancement 23
	103-2	The management approach and its components	Our operations 10 - 13 Focus on productivity and yield enhancement 23
	103-3	Evaluation of the management approach	Our operations 10 - 13 Focus on productivity and yield enhancement 23
<b>GRI 301: Materials 2016</b>	301-1	Materials used by weight or volume	Our operations 10 - 13

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Material Topics			
GRI Standard	Disclosure		Page or reason for omission
<b>ENVIRONMENTAL</b>			
<b>Water and Effluents (see also GRI 306)</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
	103-2	The management approach and its components	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
	103-3	Evaluation of the management approach	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
<b>GRI 303: Water and Effluents 2018</b>	303-1	Interactions with water as a shared resource	Water accountability and footprint 45 - 47
	303-2	Management of water discharge-related impacts	Water accountability and footprint 45 - 47
	303-3	Water withdrawal	Water accountability and footprint 45 - 47
<b>Biodiversity</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Promoting positive environmental impacts 35
	103-2	The management approach and its components	Promoting positive environmental impacts 35 - 39
	103-3	Evaluation of the management approach	Promoting positive environmental impacts 35 - 39
<b>GRI 304: Biodiversity 2016</b>	304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Promoting positive environmental impacts 35 - 39
	304-2	Significant impacts of activities, products, and services on biodiversity	Promoting positive environmental impacts 35 - 39
	304-3	Habitats protected or restored	Promoting positive environmental impacts 35 - 39
	304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	International Union for Conservation of Nature (IUCN) Red List of Threatened Species 70 - 71
<b>Emissions</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Minimising our carbon footprint 42 - 45
	103-2	The management approach and its components	Minimising our carbon footprint 42 - 45
	103-3	Evaluation of the management approach	Minimising our carbon footprint 42 - 45
<b>GRI 305: Emissions 2016</b>	305-1	Direct (Scope 1) GHG emissions	Minimising our carbon footprint 42 - 45
	305-2	Energy indirect (Scope 2) GHG emissions	Minimising our carbon footprint 42 - 45
	305-4	GHG emissions intensity	Minimising our carbon footprint 42 - 45
	305-5	Reduction of GHG emissions	Minimising our carbon footprint 42 - 45

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GRI Standard	Disclosure		Page or reason for omission
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<b>Effluents and Waste</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
	103-2	The management approach and its components	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
	103-3	Evaluation of the management approach	Methane recovery 44 Holistic waste management 44 Water accountability and footprint 45 - 47
<b>GRI 306: Effluents and Waste 2016</b>	306-1	Water discharge by quality and destination	Water accountability and footprint 45 - 47
	306-3	Significant spills	No significant spills recorded
<b>Environmental Compliance</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Our achievements 3 Sustainability certification and verification 17 - 22
	103-2	The management approach and its components	Sustainability certification and verification 17 - 22
	103-3	Evaluation of the management approach	Our achievements 3 Sustainability certification and verification 17 - 22
<b>Supplier Environmental Assessment</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Sustainability Policy implementation for third-party suppliers 31 - 33
	103-2	The management approach and its components	Our approach to sustainability 16 Sustainability Policy implementation for third-party suppliers 31 - 33 Independent smallholders 61
	103-3	Evaluation of the management approach	Sustainability Policy implementation for third-party suppliers 31 - 33
<b>GRI 308: Supplier Environmental Assessment 2016</b>	308-2	Negative environmental impacts in the supply chain and actions taken	Sustainability Policy implementation for third-party suppliers 31 - 33 Smallholder programmes 60 - 62 Land and community rights 63
<b>SOCIAL</b>			
<b>Employment</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Protecting human rights in the workplace 51 - 58
	103-2	The management approach and its components	Protecting human rights in the workplace 51 - 58
	103-3	Evaluation of the management approach	Protecting human rights in the workplace 51 - 58
<b>GRI 401: Employment 2016</b>	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Wages, benefits, working hours and conditions 56 - 57 Temporary workers 57
	401-3	Parental leave	Wages, benefits, working hours and conditions 56 - 57

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<b>Labour/Management Relations</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Protecting human rights in the workplace 51 - 58
	103-2	The management approach and its components	Protecting human rights in the workplace 51 - 58
	103-3	Evaluation of the management approach	Protecting human rights in the workplace 51 - 58
<b>Occupational Health and Safety</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Occupational health and safety 58 - 59
	103-2	The management approach and its components	Occupational health and safety 58 - 59
	103-3	Evaluation of the management approach	Occupational health and safety 58 - 59
<b>GRI 403: Occupational Health and Safety 2018</b>	403-1	Occupational health and safety management system	Occupational health and safety 58 - 59
	403-2	Hazard identification, risk assessment, and incident investigation	Occupational health and safety 58 - 59
	403-3	Occupational health services	Occupational health and safety 58 - 59
	403-4	Worker participation, consultation, and communication on occupational health and safety	Occupational health and safety 58 - 59
	403-5	Worker training on occupational health and safety	Occupational health and safety 58 - 59
	403-6 403-9	Promotion of worker health Work-related injuries	Occupational health and safety 58 - 59 Occupational health and safety 58 - 59
<b>Training and Education</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Wages, benefits, working hours and conditions 56 - 57
	103-2	The management approach and its components	Wages, benefits, working hours and conditions 56 - 57
	103-3	Evaluation of the management approach	Wages, benefits, working hours and conditions 56 - 57
<b>GRI 404: Training and Education 2016</b>	404-2	Programmes for upgrading employee skills and transition	Wages, benefits, working hours and conditions 56 - 57
<b>Diversity and Equal Opportunity</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Equal opportunities 55
	103-2	The management approach and its components	Equal opportunities 55
	103-3	Evaluation of the management approach	Equal opportunities 55
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1	Diversity of governance bodies and employees	Equal opportunities 55

Material Topics			
GRI Standard	Disclosure		Page or reason for omission
<b>SOCIAL</b>			
<b>Non-discrimination</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	No harassment, abuse, or unlawful or unethical discrimination 54 - 55
	103-2	The management approach and its components	No harassment, abuse, or unlawful or unethical discrimination 54 - 55
	103-3	Evaluation of the management approach	No harassment, abuse, or unlawful or unethical discrimination 54 - 55
<b>Freedom of Association and Collective Bargaining</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Freedom of unions and collective bargaining 57
	103-2	The management approach and its components	Freedom of unions and collective bargaining 57
	103-3	Evaluation of the management approach	Freedom of unions and collective bargaining 57
<b>Child Labour</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	No child, bonded or forced labour 54
	103-2	The management approach and its components	No child, bonded or forced labour 54
	103-3	Evaluation of the management approach	No child, bonded or forced labour 54
<b>GRI 408: Child Labour 2016</b>	408-1	Operations and suppliers at significant risk for incidents of child labour	No child, bonded or forced labour 54
<b>Forced or Compulsory Labour</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	No child, bonded or forced labour 54
	103-2	The management approach and its components	No child, bonded or forced labour 54
	103-3	Evaluation of the management approach	No child, bonded or forced labour 54
<b>GRI 409: Forced or Compulsory Labour 2016</b>	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	No child, bonded or forced labour 54
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<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Supporting community development and respecting community rights 63 Land and community rights 63
	103-2	The management approach and its components	Grievances 28 Supporting community development and respecting community rights 63 Land and community rights 63
	103-3	Evaluation of the management approach	Supporting community development and respecting community rights 63 Land and community rights 63
<b>GRI 411: Rights of Indigenous Peoples 2016</b>	411-1	Incidents of violations involving rights of indigenous peoples	Grievances 28

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Material Topics			
GRI Standard	Disclosure		Page or reason for omission
<b>SOCIAL</b>			
<b>Human Rights Assessment</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Sustainability Policy implementation for third-party suppliers 31 - 33
	103-2	The management approach and its components	Grievances 28 Sustainability Policy implementation for third-party suppliers 31 - 33
	103-3	Evaluation of the management approach	Sustainability Policy implementation for third-party suppliers 31 - 33
<b>Local Communities</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Supporting community development and respecting community rights 63 Land and community rights 63
	103-2	The management approach and its components	Supporting community development and respecting community rights 63 Land and community rights 63
	103-3	Evaluation of the management approach	Supporting community development and respecting community rights 63 Land and community rights 63
<b>GRI 413: Local Communities 2016</b>	413-1	Operations with local community engagement, impact assessments, and development programmes	Smallholder programmes 60 - 62 Supporting community development and respecting community rights 63 Land and community rights 63
	413-2	Operations with significant actual and potential negative impacts on local communities	Smallholder programmes 60 - 62 Land and community rights 63
<b>Supplier Social Assessment</b>			
<b>GRI 103: Management Approach 2016</b>	103-1	Explanation of the material topic and its Boundary	Our approach to sustainability 15 - 16 Sustainability Policy implementation for third-party suppliers 31 - 33
	103-2	The management approach and its components	Our approach to sustainability 15 - 16 Grievances 28 Sustainability Policy implementation for third-party suppliers 31 - 33
	103-3	Evaluation of the management approach	Our approach to sustainability 15 - 16 Sustainability Policy implementation for third-party suppliers 31 - 33
<b>GRI 414: Supplier Social Assessment 2016</b>	414-2	Negative social impacts in the supply chain and actions taken	Grievances 28 Sustainability Policy implementation for third-party suppliers 31 - 33

ABOUT THE REPORT

COMPLETENESS

This inaugural report covers the calendar years 2016 and 2017, and includes historical data from 2015. Data covers all of our mills and plantations operations in Sumatra and Kalimantan as at 31 December 2017, unless otherwise noted. While we hold land in Papua, there are no plan for development and therefore Papua has not been included in the scope of this report. Aside from policy and implementation plans, the report does not include detailed information on our downstream business, or any of our joint ventures. In addition to the environmental and social performance and impacts of our own operations, the report covers key material aspects for associated and independent smallholders and other third-party suppliers.

MATERIALITY, STAKEHOLDER INCLUSIVENESS AND SUSTAINABILITY CONTEXT

We have reviewed the major topics discussed in this report through various forums and engagements, including correspondence and interviews with key stakeholder groups. The interviews were conducted with representatives from the NGO sector, partner technical consultancies, as well as from our customer base. We also carry out local engagement at site level through our operational teams, and international and sector-wide engagement through

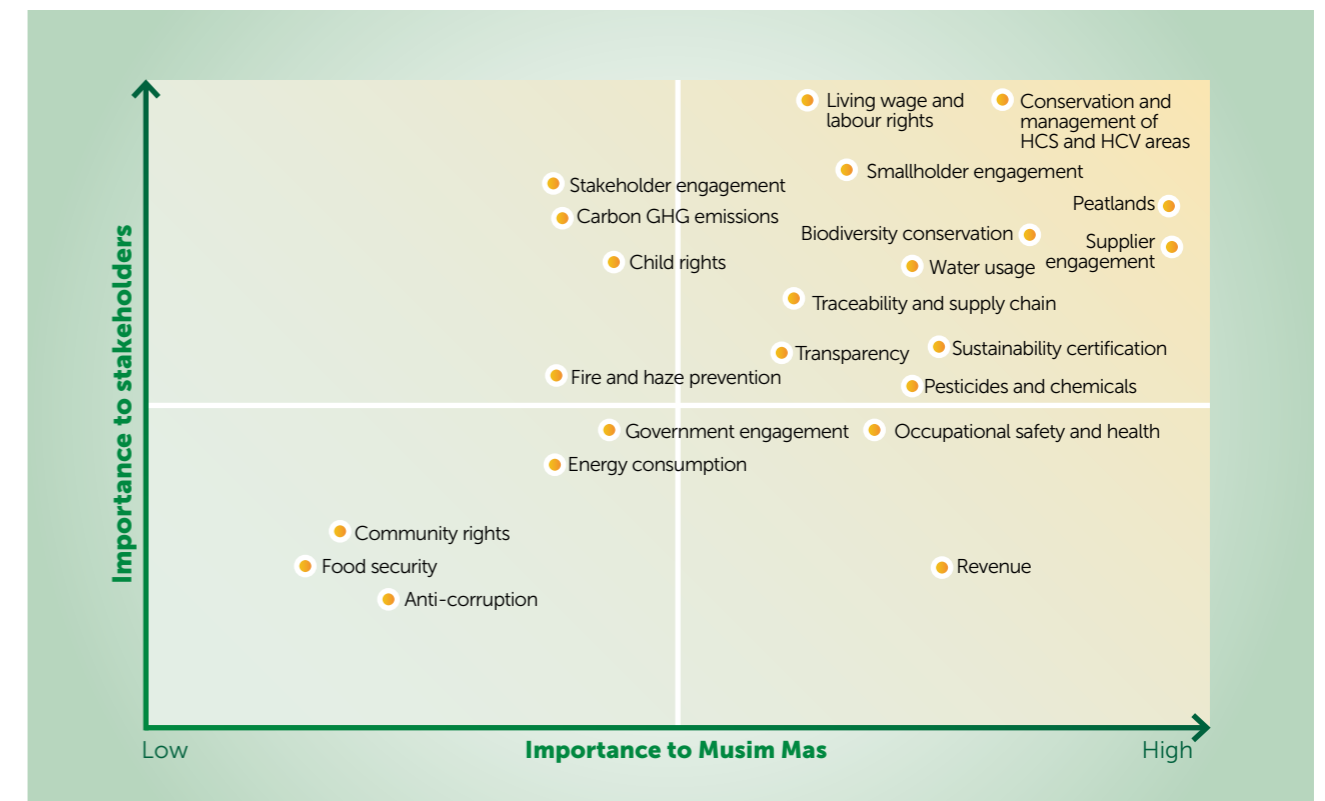
organisations such as the RSPO, POIG, HCSA and other multi-stakeholder platforms. We have looked to leading standards and benchmarks, including the Zoological Society of London's SPOTT initiative, to ensure that we are responsive to the themes and aspects that are of critical importance to stakeholders. The extent to which these themes are directly relevant to our business has guided us in balancing report content and the in-depth data included. Throughout the report, we seek to provide an appropriate context for our performance, particularly in relation to the unique social and environmental landscapes in Sumatra and Kalimantan.

REPORT CYCLE AND ASSURANCE

We will publish a sustainability report every two years. In addition, stakeholders can review our progress annually via our yearly Sustainability Policy progress reports and our RSPO annual communications of progress.

For our inaugural report, we have not engaged third party assurance. We believe that our multiple certification audit provides adequate assurance on our performance to our stakeholders at this stage. However, for future reports, we will continue to consider and evaluate the option of taking on third-party assurance.

Materiality Matrix



## GLOSSARY

### Annual Communications of Progress (ACOP)

ACOPs are 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.

### Book & Claim

The Book and Claim supply chain model provides tradable certificates for RSPO certified palm oil to the palm oil supply base. The supply base may then offer these certificates on a web-based transaction system to end users who choose to support specific volumes of RSPO certified palm oil and or their derivatives.

### Carbon dioxide equivalents (CO<sub>2</sub>e)

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.

### Effluents

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

### Extension Services Programme (ESP)

A 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 between 10 kg to 40 kg depending on the size and age.

### Free, Prior and Informed Consent (FPIC)

Principle that a community has a 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.

### High Conservation Value (HCV)

The HCV concept was originally developed by the Forest Stewardship Council (FSC) with the aim to standardise the definitions and evaluation approaches for natural forest that should be set aside for conservation. There are six possible HCVs that can be identified, covering environmental and social aspects of a natural forest.

### High Carbon Stock Approach (HCSA)

A global methodology used in agricultural land development planning that is currently being 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.

### Independent smallholder

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

### 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)

Is a tripartite world body representative of labour, management and government, and is an agency of the United Nations. It disseminates labour information and sets minimum international labour standards called "conventions", offered to member nations for adoption.

### Integrated Pest Management (IPM)

IPM is the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimise risks to human health and the environment. IPM emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms.

### Indonesia Sustainable Palm Oil (ISPO)

Mandatory national sustainable palm oil standard.

### International Sustainability and Carbon Certificate (ISCC)

A global biomass and bioenergy certification scheme.

### Indonesian Palm Oil Development for Smallholders

A programme developed in partnership with the International Finance Corporation to support independent smallholders in meeting the same farming standards as those adopted by large palm oil organisations.

### Italian National Certification System for Biofuels and Bioliquids (IT SNC)

Under the EC Renewable Energy Directive, this Italian national action plan gives an overview of national policy concerning renewable energies, its goals and main strategic lines of action. The certification guarantees the reliability of information demonstrating compliance with the biofuel and bioliquid sustainability criteria, and that the information given by the economic operators belonging to the production chain of said products is independently verified.

### 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, that provides smallholders with practical support to acquire the skills and technology needed to undertake palm oil cultivation.

### Mass Balance

The Mass Balance system allows for mixing of RSPO certified and non-certified palm oil at any stage in the supply chain provided that overall company quantities are controlled. The mass balance model is constructed in such a way that volumes of RSPO certified product shipped will never exceed volumes received by the end-user.

### New Planting Procedure (NPP)

The RSPO NPP consists of a set of assessments and verification activities to be conducted by RSPO grower members and certification bodies prior to a new oil palm development, in order 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 and planting and associated development can only begin once the NPP is complete and RSPO approval is granted.

### Non-governmental organisation (NGO)

Is used in this report to refer to grassroots and campaigning organisations focused on environmental or social issues.

### PalmGHG

The PalmGHG Calculator is a tool developed by the RSPO Greenhouse Gas Working Group 2 to allow palm oil producers to estimate and monitor their net greenhouse gas emissions. The Calculator also enables palm oil producers to identify crucial areas in their production chain and thereby guiding emission reduction opportunities.

### Palm oil mill effluent (POME)

A by-product of processed fresh fruit bunch (FFB).

### Peat

Peat is an accumulation of partially decayed vegetation matter. Peat forms in wetlands or peat lands, variously called bogs, moors, muskegs, pocosins, mires, and peat swamp forests.

### 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 through developing and sharing a credible and verifiable benchmark that builds upon the RSPO, and creating and promoting innovations.

### Roundtable on Sustainable Palm Oil (RSPO)

A multi-stakeholder organisation based in Kuala Lumpur, Malaysia. The organisation has developed a certification scheme for sustainable palm oil.

### Schemed smallholders

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

### Segregation

The Segregation 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.

### Social and Environmental Impact Assessment (SEIA)

A process for predicting and assessing the potential environmental and social impacts of a proposed project, evaluating alternatives, and designing appropriate mitigation, management and monitoring measures.

### Stakeholders

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

### 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 need of current generations without compromising the needs of future generations".

### Toxicity

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 programme developed for schemed smallholders and tailored to villages where plantations are community-managed rather than individually owned.



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