

SOCFINDO
SUSTAINABILITY
REPORT

2022





One of our Socfindo seed production employee harvesting a pollinated bunch.



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 An alley into Socfindo Conservation medicinal garden.

ABOUT THIS REPORT

Reporting Boundaries and Changes in Reporting

This Sustainability Report covers and reports on the sustainability performance of PT Socfin Indonesia (Socfindo), a private entity which is part of the Socfin Group and has its headquarters in Medan, North Sumatra. It is a subsidiary of the Socfin Group in partnership with the Government of Indonesia who are a minority shareholder. Socfindo is a oil palm and rubber plantation company based in Indonesia. This report covers both Socfindo's Rubber and oil palm operations.

Report Scope and Content

This is Socfindo's third Sustainability Report and has been prepared in accordance with the GRI Standards, covering the calendar years 2021 & 2022 (i.e. from 1 January 2021 to 31 December 2022). For comparability, where relevant and available, historical data is also provided from 2020. It is Socfindo's intention to continue reporting on a biennial basis. There have been no significant changes to Socfindo to report since its last 2020 report and this report contains no material restatements of information from previous reporting periods.

This report has been divided into 5 major sections; Our Approach to Sustainability; Socfindo Conservation; Market; Environment and People, which is consistent with how Socfindo organises its internal approach to sustainability. A full list of the materiality matters reported on in this GRI Report is set out in the GRI Content Index.

Socfindo has not sought additional third-party assurance for the content of this report. Socfindo considers at this stage that the multiple certifications it holds, which require extensive independent third party audits of its operations across a broad range of sustainability concerns provides adequate assurance to its stakeholders on its sustainability performance. If you have any comments or questions regarding the contents of this report or on Socfindo's Sustainability please contact us on head_office@socfindo.co.id.

MESSAGE FROM PRINCIPAL DIRECTOR

In line with its ongoing commitment to transparency, we are pleased to present Socfindo's third Sustainability Report which covers the period 2021-2022. Socfindo is continuing to make stepwise progress on its sustainability journey and is committed to long-term improvement across a broad range of environmental and social parameters and to greater transparency in line with the expectations of its key stakeholders, customers and to play its role as a responsible global citizen. At the same time, as a significant food and rubber product producer and significant regional employer that provides thousands of rural jobs in Sumatra and Aceh, Indonesia, Socfindo must also ensure it can produce sustainable commodities at an affordable price and remain competitive so that it can continue to take care of the wider Socfindo Family and contribute to the Indonesian economy and community.

The general market outlook remains challenging despite better prices in recent times. Thankfully the impact of Covid 19 appears to be retreating and with the strides that have been made in the fight against Covid, restrictions are slowly being eased. With this, life is returning more to normal although we remain vigilant and still have in place precautions to prevent the spread of Covid and to protect those in the Socfindo Family who may be more vulnerable. We have been able to recommence many of our community activities and social events which are such an important part of life and wellbeing and it is wonderful to see people again being able to gather and enjoy each other's company.

Whilst the retreat of Covid is a blessing, the macro-economic outlook remains uncertain and geo political situations like the war in Ukraine have had a significant impact on fertilizer price and availability which has had a large impact on Socfindo with fertilizer being a large input cost and an essential component for yields. In addition, tensions remain high between regional blocks such as the US and China and with high interest rates and inflation it makes for a continuing uncertain economic outlook.

In addition, in our plantations we continue to see the effects of climate change with unstable weather patterns becoming more the norm. Socfindo plantations have faced longer drought periods and most recently longer more intense wetter periods which have affected harvesting and fruit sets. We continue to adapt to these weather extremes through more robust planting material and cutting-edge agronomy. We also have specific initiatives in our most affected plantations to build natural water holding capacity that can release excess water in wetter seasons and act as a water reservoir in drier seasons. As a dedicated plantation company that relies on rainwater for its crops, Socfindo is climate exposed therefore, climate risk assessment, planning and adaptation to build resilience are becoming main stream parts of our business planning. We are also preparing to align with the Task Force for Climate-related Financial Disclosures in this regard.

We remain committed to utilizing robust third-party certification as a vehicle to implement and transparently verify the origin and sustainability of our products. In our palm business, the Round Table for Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) remain the most relevant certifications for us. With the new RSPO principles and criteria set to be released at the end of 2023, the bar of this already very high standard, probably one of the more robust sustainability certifications of any agricultural crop, will once again be raised. At the same time, a significant portion of RSPO certified palm oil continues to be sold as normal palm oil, without a premium which sends the wrong signal to the industry. Shared responsibility across the value chain is a core part of achieving sustainability and if buyers and consumers are serious about sustainably produced goods then they must be prepared to do their part by sharing the costs of producing products to strict sustainability standards. Socfindo is committed to continuing to produce sustainable palm products with 100% of its palm products being RSPO Identity Preserved certified and fully traceable to the plantation level.

In our rubber operations, Socfindo considers the Global Platform for Sustainable Natural Rubber (GPSNR) once released will be the most robust, comprehensive sustainability standard related to the rubber industry. In addition, Socfindo is also pursuing PEFC Certification (Programme for the Endorsement of Forest Certification), a leading international sustainable forest management and chain of custody certification for its rubber products. Socfindo has completed its full High Conservation Value (HCV) assessment of its rubber plantation as a key component of preparation to implement this standard with a goal to be fully PEFC certified by the end of 2023 / early 2024.

We would like to highlight the crucial role that local government stakeholders play in implementing sustainability in Indonesia and the importance of engaging with and including local government stakeholders in Sustainability initiatives. Local government have a significant direct impact on producers like Socfindo as they are the front-line bodies responsible for permitting for monitoring and ensuring compliance with environmental and social regulations and for implementing on the ground National and regional sustainability strategies. It is crucial that RSPO and other international certification bodies include and closely coordinate with local government who are so influential and also key implementers for policies on the ground in Indonesia. Currently, RSPO does not formally include local government stakeholders as one of the seven stakeholder groups. Industry wide issues such as GHG reductions and finding alternative chemicals for pest attacks need to be closely coordinated with local governments and institutions. Another example of the importance of working closely with the local government is in the renewal of agricultural land (HGU) licenses which Socfindo is in the process of undertaking.

Even though the acute effects of Covid have been retreating, health remains front of mind for many of our Socfindo family and the importance of a healthy workforce is a key concern for Socfindo. To this end, we are very proud of our medical clinic, including the Medan clinic which is able to provide medical care to our employees as well as preventative checkups. Improving the health and well-being of our employees and the wider Socfindo family remains a key focus for Socfindo.

Our Toga team in Socfindo Conservation, composed of more than 150 women, have been doing important work in relation to health, well-being, education and empowerment in the community and we are very proud of their efforts. The Socfindo Conservation garden has been a tremendous success and has grown into a regional hub for the conservation of medicinal plants, as well as store and transmission of knowledge of their uses and for traditional medicinal recipes. This is only due to the voluntary efforts of the 150 women of the Toga Team and we are very keen to continue to support the Socfindo Conservation garden and the important outreach work they are doing. We are also proud to include in this report for the first time a full section on the efforts and successes of the Socfindo garden.

GHG emissions remain a key concern for Socfindo and despite our best efforts and being committed to stepwise reduction in its GHG profile, making significant reductions for Socfindo remains a challenge given Socfindo's particular context. We are actively exploring potential solutions such as our Palm Oil Mill Effluent flocculation and rice husk biochar initiative and continue to actively seek solutions to make a stepwise systematic reduction in our GHG emission profile.

Despite the challenges we are committed to the path of continued stepwise improvement in sustainability and to greater transparency under the umbrella of shared responsibility.

In conclusion I would personally like to thank all the employees of Socfindo and their families for their hard work and effort without which nothing would be possible. Socfindo really is a special place, it is both one of the oldest and leading dedicated plantation companies. What makes it special is the people and I am very honoured to be a part of the Socfindo family.

Harold O. Williams

Principal Director

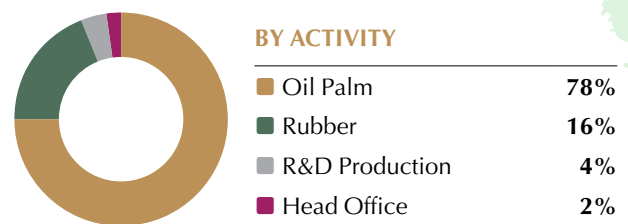
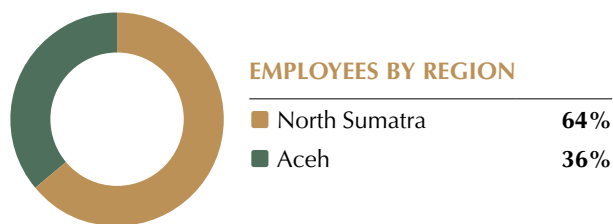
ABOUT SOCFINDO

Socfindo at a Glance

8,824

Total Employees

PT Socfin Indonesia (Socfindo) is a world class oil palm and rubber plantation company with its operations in North Sumatra and Aceh Provinces and its headquarters in Medan, North Sumatra, Indonesia. Socfindo is known for its efficiency and leading agronomic practices. Socfindo's origin can be traced back to the early 1900's, when rubber estates were flourishing in Sumatra to serve the high global demand for natural rubber. Oil palm estates were created soon after, having noticed the high potential of the area to grow oil palm. Socfindo was not however formally established as PT Socfin Indonesia until 1968 and since then it has remained active in rubber and oil palm planting activities in North Sumatra and Aceh Province to this day.

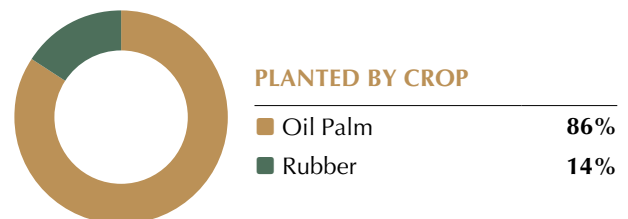
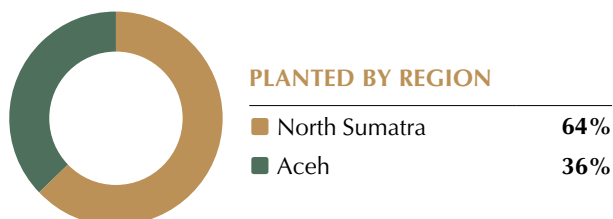


Socfindo Today

45,882 ha




Total Planted Areas

Socfindo is part of the Socfin Group and is a joint venture between the Socfin Group (90% of shares) and the Government of Indonesia (10% of shares).



Socfindo's Operations

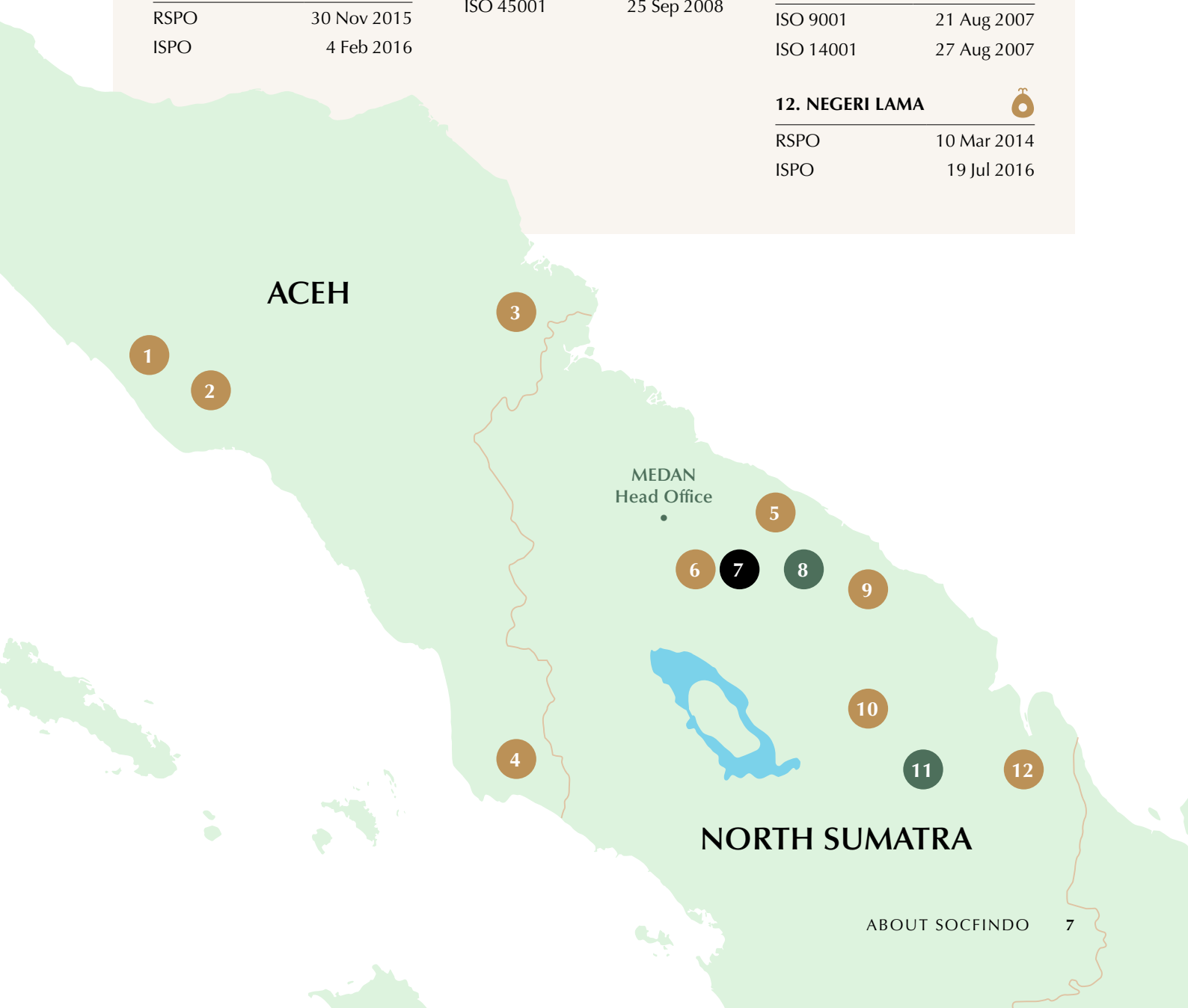
ACEH

1. SEUNAGAN	
RSPO	30 Nov 2015
ISPO	19 Jul 2016
2. SEUMANYAM	
RSPO	17 Oct 2015
ISPO	6 Dec 2016
3. SEI LIPUT	
RSPO	5 May 2014
ISPO	5 Feb 2016
4. LAE BUTAR	
RSPO	30 Nov 2015
ISPO	4 Feb 2016

NORTH SUMATRA

5. MATA PAO	
RSPO	25 Apr 2014
ISPO	5 Feb 2016
6. BANGUN BANDAR	
RSPO	11 Nov 2011
ISPO	8 May 2015
7. SOCFINDO SEED PROD. AND LABORATORIES	
ISO 9001	21 Aug 2007
ISO 14001	27 Aug 2007
ISO 17025	20 May 2015
ISO 45001	25 Sep 2008

8. TANAH BESI	
ISO 9001	21 Aug 2007
ISO 14001	27 Aug 2007
9. TANAH GAMBUS	
RSPO	4 Nov 2011
ISPO	8 May 2015
10. AEK LOBA	
RSPO	15 Apr 2015
ISPO	6 Dec 2016
11. AEK PAMIENKE	
ISO 9001	21 Aug 2007
ISO 14001	27 Aug 2007
12. NEGERI LAMA	
RSPO	10 Mar 2014
ISPO	19 Jul 2016



Oil Palm

Socfindo has the following products and services related to its oil palm business.

CRUDE PALM OIL AND PALM KERNEL

Socfindo is an upstream plantation company with its major products in its oil palm business being Crude Palm Oil (CPO) and Palm Kernel, which are sold to downstream companies which will further process and refine these ingredients into end products.



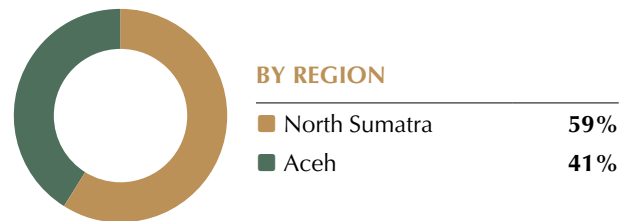
OIL PALM SEEDS

Socfindo has a long standing, established reputation for producing oil palm seeds of the highest quality and it has been legally appointed as a source and producer of oil palm seeds in Indonesia since 1984. Socfindo has the fourth largest market share in terms of seeds sold in Indonesia and are the largest producer of Ganoderma tolerant seeds. Currently Socfindo produces the following seed varieties for sale:

- DxP Socfindo (L) - Lame variety
- DxP Socfindo (Y) - Yangambi variety
- DxP Socfindo MT Gano - variety tolerant to Ganoderma disease

For more details on Socfindo's seed business please see here <https://www.socfindo.co.id/products>.

39,279 ha
Total Palm Planted Areas



AGRONOMIC CONSULTANCY SERVICES & LABORATORY ANALYSIS

Socfindo's business over the last hundred years has been centered on the creation and management of oil palm and rubber plantations and the milling of its associated products. Socfindo has always invested significant resources into research and improvement in its agronomic practices and has a long history of cooperation in relation to research, development and agronomy science. Today Socfindo provides agronomical consultancy services as well as analytical and laboratory services from its own laboratories which include:

- Fertilizer analysis and recommendation
- Compost analysis
- Soil analysis
- Leaf analysis
- Rachis analysis
- Waste & water analysis
- Latex diagnosis

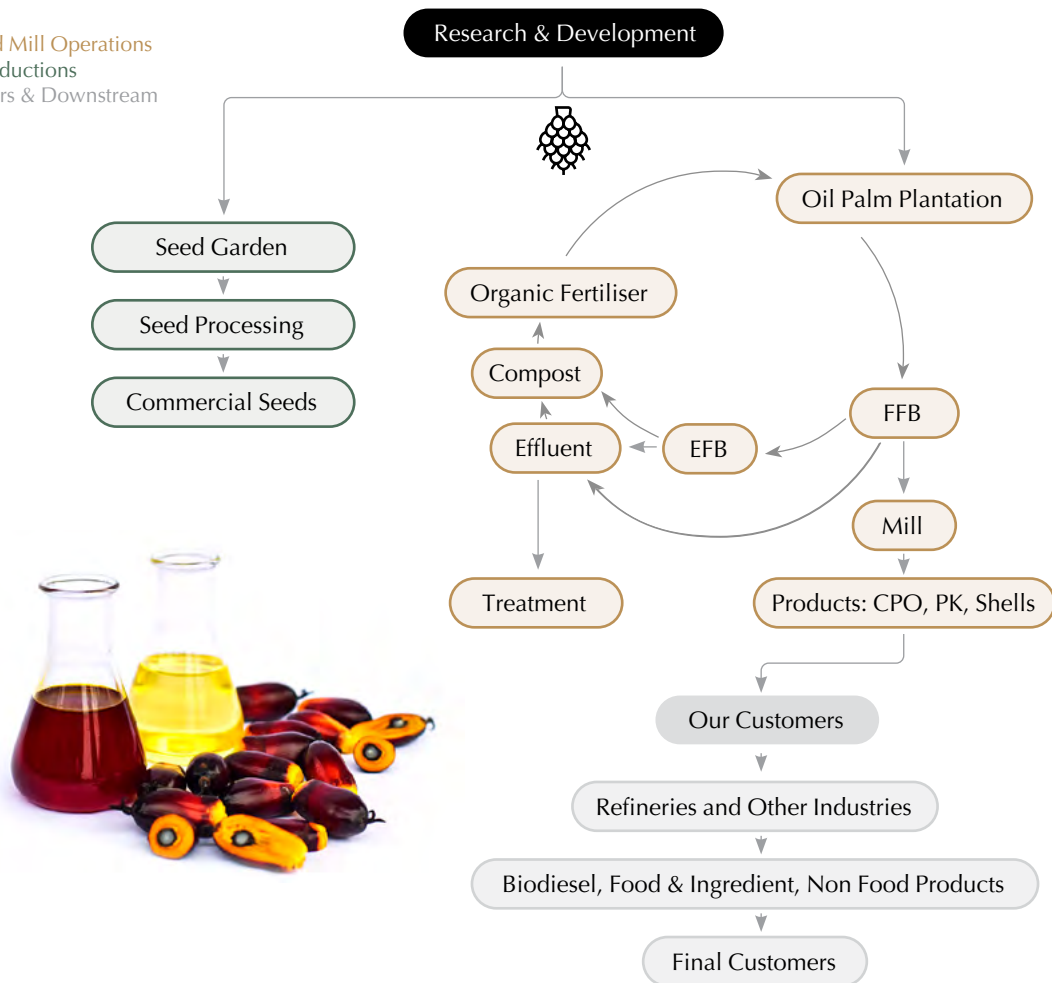
For more details on Socfindo's Agronomy Consultancy & Analytical and Laboratory Analysis business please see here <https://www.socfindo.co.id/services/analytical-laboratory>.



One of our assistants proudly showing a healthy Socfindo seedling.

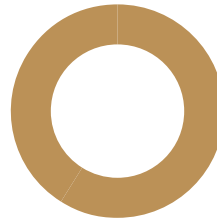
Oil Palm Process

- Field and Mill Operations
- Seed Productions
- Customers & Downstream



Rubber

6,602 ha
Total Rubber Planted Areas



BY REGION

North Sumatra	100%
Aceh	0%



📷 A neat rubber row in its first year of planting.

NATURAL RUBBER

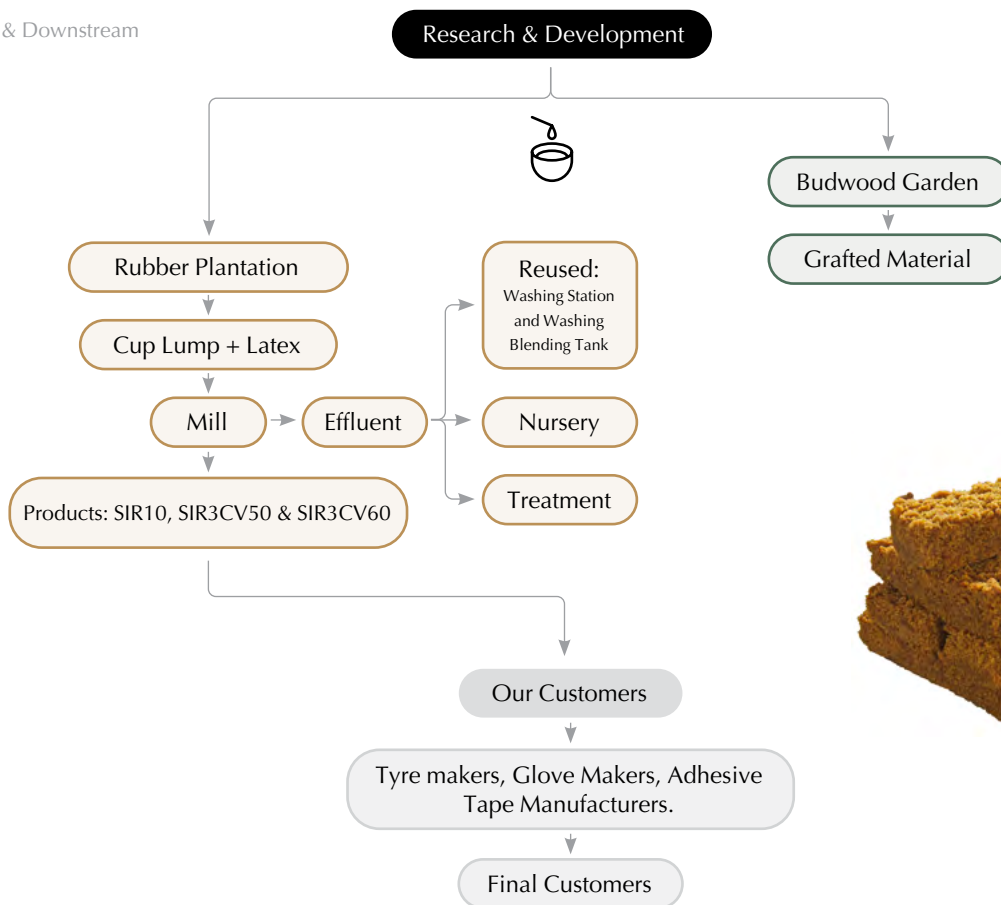
Socfindo also operates its own rubber plantation, producing natural rubber certified by the Indonesian National Standard for rubber (SNI). Indonesia has its own classification of natural rubber, which varies according to its quality parameters. The three grades that Socfindo produce are SIR3CV 50, SIR3CV60, coming from latex and SIR 10, which is produced from coagulum. Our natural rubber is sold to downstream companies who use natural rubber in their manufacturing process especially for tire making, glove making and adhesive tape making.



📷 A tapper skilfully opening a new rubber tree.

Rubber Process

- Field & Mill Operations
- Nurseries
- Customers & Downstream



OUR APPROACH TO SUSTAINABILITY



📷 Freshly planted oil palms planted on terraces.

Our Values

The origin of Socfindo is credited to a Belgian agronomy engineer by the name of Adrien Hallet (1867-1925). Hallet observed the effect of the improved local conditions of Sumatra on oil palm yield and productivity and realising the potential he collected seeds, began planting and before long the first commercial oil palm plantation on the Deli region of Sumatra was born. The vision of Hallet was not only to predict the potential of oil palms in Asia and to do so in 1911 at a time when the rubber plantation was booming and seemed to be the obvious crop of choice.

"One can do nothing with nothing and one can do plenty with little."

– ADRIEN HALLET

Socfindo today is both one of the oldest and leading palm and rubber plantation companies in Indonesia. Based in North Sumatra, it is proud to be an involved and contributing member of the North Sumatra community. Socfindo has been at the forefront of palm agronomy research and practices, delivering high yields and productive gains on the same soils for over 100 years. The pioneering values of discipline, conserving resources and taking a hands on scientific approach to agriculture which have built Socfindo are still at the heart of Socfindo's success today 100 years later.

Being first and foremost a plantation company, Socfindo makes the agronomic decisions and investment to allow the plantation to thrive focusing on long term productive gains. A disciplined approach which focuses on continuous productivity of land and reducing waste is at the heart of Socfindo's success. These two core aspects of sustainability have been ingrained practices in Socfindo since its founding in 1911, long before the concepts of sustainability had been formally conceptualized.

**SOCFINDO'S VISION IS TO
REMAIN THE MOST EFFICIENT,
WORLD CLASS OIL PALM
AND RUBBER PLANTATION
COMPANY IN THE INDUSTRY**

Socfindo achieves its vision by having an ingrained culture of continuous improvement and has been able to achieve and deliver on its vision over the last 100 years through its **core values**:

- The best long term agronomical practices.
- Constant, disciplined approach focusing on:
 - Improving agronomic practices and optimizing yield.
 - Remaining lean, eliminating waste and making wise and efficient use of resources.
- Mindful management, building long term relationships based on trust, mutual respect and accountability.
- Investing in its people, their families and communities, creating a decent, healthy and harmonious workplace that rewards performance.
- Being a responsible, positive member of the North Sumatra and Aceh communities committed to contributing to their long term sustainable development and to Indonesia.

These core values are at the heart of Socfindo's success and form the foundation of its approach to sustainability.


Sustainability Policies

SOCFIN GROUP RESPONSIBLE MANAGEMENT POLICY

Socfindo is part of the Socfin Group and as such it's sustainability strategy, policy and decision making adheres to the group's Responsible Management Policy (RMP). The RMP is Socfindo's umbrella policy, which outlines and sets out the Group's commitments to responsible tropical agriculture, as well as specifically outlining the group's core guidelines and commitments across environmental, social and governance matters. The RMP provides a framework and roadmap for sustainability decision making within Socfindo. The RMP was adopted by Socfindo in June 2019 and was most recently updated in March 2022. A copy of the RMP policy is available **here** <https://www.socfindo.co.id/documents/eng/Umbrella-Policy.pdf>

Socfindo in turn implements the RMP through its specific sustainability policies which address specific environmental and social matters.



 Maintaining old stands in HCV areas during replanting.

COMMITMENT TO NDPE

As a plantation company, a cornerstone policy is Socfindo's No Deforestation, No Peat Policy which sets out its RSPO commitments to no development on peat and no deforestation of High Carbon Stock or High Conservation Value forest. This policy was adopted in June 2019 and last reviewed and updated in October 2021. In addition to its cornerstone NDP policy, Socfindo also a number of specific Social policies which cover the aspect of "Non Exploitation" and a wide range of issues. These include:

- Anti-Discrimination and Equal Opportunity Policy.
- Decent Living Wage Policy.
- Freedom of Association Policy.
- No Forced Work Policy.
- Child Protection Policy.
- Reproductive Rights Policy.
- Prevention of Harassment & Violence Policy.
- Human Rights Policy.
- Grievance Policy.
- Occupational Safety and Health Policy.

More details of these are set out in the specific sections of our report below and a copy of Socfindo's specific sustainability polices are available **here** <https://www.socfindo.co.id/sustainability>. Our governance section below explains how these policies are implemented and communicated.

CERTIFICATION

In addition to policies one of the key pillars of Socfindo's sustainability strategy by which sustainability is implemented is through certification. In relation to oil palm, Socfindo considers the most relevant and comprehensive standard for palm products is the Roundtable on Sustainable Palm Oil (RSPO) certification standard. In addition, in relation to the specific Indonesian context, the Indonesian Sustainable Palm Oil standard (ISPO) is an equally important domestic mandatory certification scheme. In relation to its rubber operations, the Global Platform for Sustainable Natural Rubber (GPSNR), is the key evolving standard. More details of Socfindo's certification is set out below in the certification section below.

RISK MANAGEMENT AND THE PRECAUTIONARY PRINCIPLE

Socfindo adopts the precautionary principle as a general risk management principle, not just for significant environmental risks but also for significant social and environmental risks. This means in the face of significant or material adverse consequences, lack of conclusive evidence or certainty is not a reason for inaction or for taking reasonable measures to avoid such potential consequences when there is a reasonable alternative path forward which can avoid such negative outcomes. Proactively managing risk is an important part of Socfindo's business.



Checking and maintaining water levels as part of our environmental commitments.

Sustainability Governance

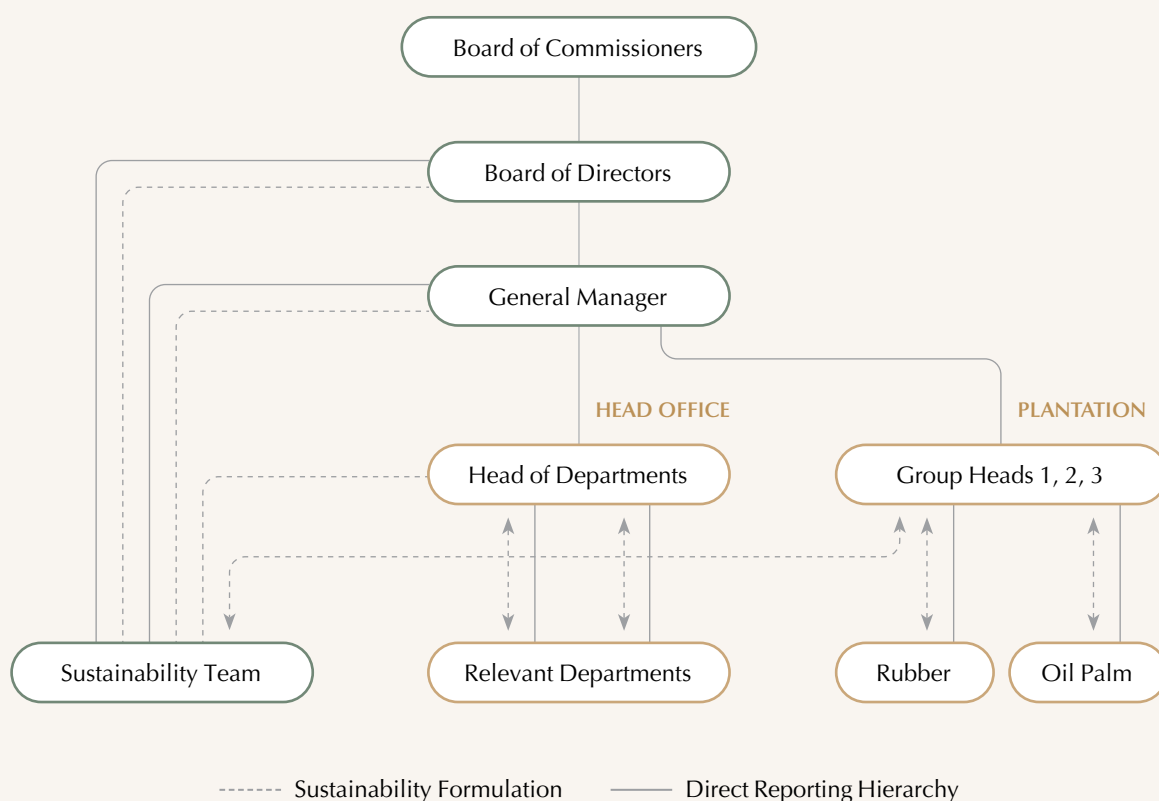
Socfindo implements sustainability throughout its organization by having clear reporting structures, policies, guidelines and standard operating procedures and these being consistently implemented throughout the company through a combination of formal and informal processes and training. In addition, Socfindo has an ingrained culture of discipline, responsibility and accountability, which is at the core of Socfindo's longevity and continued success.

Decision Making within Socfindo

The board of commissioners is the highest decision making authority in Socfindo accountable to its shareholders. The board of commissioners delegate decision making authority to the board of directors who

are ultimately responsible for approving economic, environmental and social strategy and decision making within the company reporting to the board of commissioners.

ORGANISATIONAL DIAGRAM SHOWING SUSTAINABILITY DECISION MAKING AT SOCFINDO



Sustainability Decision Making within Socfindo

Socfindo as a plantation company maintains close connection and communication between its head office in Medan and its palm and rubber plantations in North Sumatra and Aceh. Senior management, including the principal director and general manager have hands on plantation experience and background and many head office staff positions are filled from able people in plantations which is the preference within Socfindo where possible, as it provides an upward career pathway for those in the field and ensures head office obtains the benefit of those with in field experience. This is the reason for Socfindo's close connection between its plantations and head office which acts in an enabling and supporting function for those in the field.

The close connection and trust between those in head office and in the field is a key to Socfindo's continued success and is also crucial in successfully implementing sustainability within Socfindo. Due to the close relationship and connectivity between head office and the plantation, sustainability strategy, policy and planning can be initiated either from top down or from bottom up initiatives in Socfindo depending on the issue and where it arises.

Formally, initiation of sustainability strategy, policy and planning formulation is tasked with the sustainability team guided by senior management in line with the group's RMP. The initial impetus may come down from a directive from the general manager and principal director or it may come from a plantation head responding to an issue in the field or from within the sustainability team itself.

The sustainability team is able to interact directly with the relevant people in the plantation and head office departments in order to obtain input and feedback. The

scale, nature and formality of the feedback process will vary depending on the issue and who is affected and as required can involve consulting relevant stakeholders which would be done through the plantations.

Once the required input and feedback has been obtained, the relevant strategy, policy or plan is then drafted by the sustainability team and validated and authorised by the general manager and board of directors.

Implementation

Once approved and formalised it will be the Sustainability team's responsibility for implementation, socialization, monitoring and review again coordinating directly with the plantations and relevant departments with support from the group plantation heads, department heads and senior management.

Sustainability cannot be successfully implemented unless there is understanding and a realistic assessment of the real issues and challenges in the field, provision of the necessary support to the plantations in implementation and a raising of awareness throughout the organisation of the importance of sustainability issues and their impact on the business and on its continued success. Implementing sustainability is a step wise long term ongoing process and requires close communication and mutual respect between those externally facing in head office and those on the ground dealing with the realities of the plantation.

Materiality



📷 The external stakeholders invited for a consultative meeting.

Stakeholder Engagement

Socfindo's stakeholders are defined as those groups which are important to its operations, have a material influence or impact over its business or alternatively are materially impacted either directly or indirectly by its business activities. These include employees, their families and local communities, shareholders, customers, suppliers and financiers. It also includes various levels of government, including importantly local government who are a key stakeholder given the key functions they perform, the influence they have on the local operating environment and often direct supervisory functions they perform. In addition, local and international NGOs, industry and certification bodies as well as trade unions and other organizations which represent workers are also stakeholders. As a company whose direct operating footprint is entirely in Indonesia, Socfindo is particularly concerned with ensuring it engages and understands those matters of importance to its Indonesian stakeholders who are both potentially the most impacted from Socfindo's

operations and conversely have the most potential impact. Ongoing stakeholder engagement is thus an integral part of Socfindo's business. As a long standing member of the communities in which it operates, Socfindo works hard to maintain regular informal direct contact through its plantation management with its key external stakeholders such as the local community, government and local NGOs to ensure there is an open channel for two way communication to facilitate mutual understanding and awareness of the company's activities and for early identification of any issues or areas of concern or areas where assistance may be required. Socfindo also enjoys a close relationship with its main customers and suppliers and a key component to the success of these relationships is to have an open dialogue where it is possible to discuss issues which may arise from time to time, gain feedback openly and honestly and to seek ways in which to constantly improve

Membership of Associations

In addition to these informal engagement channels, Socfindo is also an involved and contributing member of the Indonesian community, oil palm industry and an active member of a number of formal industry organizations which are also an important source of information exchange in relation to sustainability matters. Socfindo also works closely with key sustainability certification organisations like the Round Table for Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) for Palm and the Global Platform for Sustainable Natural Rubber (GPSNR) for rubber. Socfindo is in continual dialogue with experts, professionals, growers and other members of these standards which are continually evolving to meet market needs and to improve aspects of sustainability. In addition to these Socfindo is also a member of the following associations:

- GAPKI (Indonesian Palm Oil Association)
- GAPKINDO (Indonesian Rubber Association)
- APINDO (Indonesian Entrepreneur Association)
- BKS-PPS (Sumatera Planters Association)
- KADIN (Indonesian Chamber of Commerce and Industry)
- DMSI (Indonesian Palm Oil Board)
- Konsorsium Plasma Nutfah Indonesia (Indonesian Germplasm Consortium)
- FBKS (Forum Benih Kelapa Sawit Indonesia/ Indonesian Oil Palm Seed Forum)

Finally, Socfindo also has in place formal channels for contacting the company or submitting a complaint or grievance, the details of which are set out in the grievance chapter of this report see here <https://www.socfindo.co.id/contact-us>.

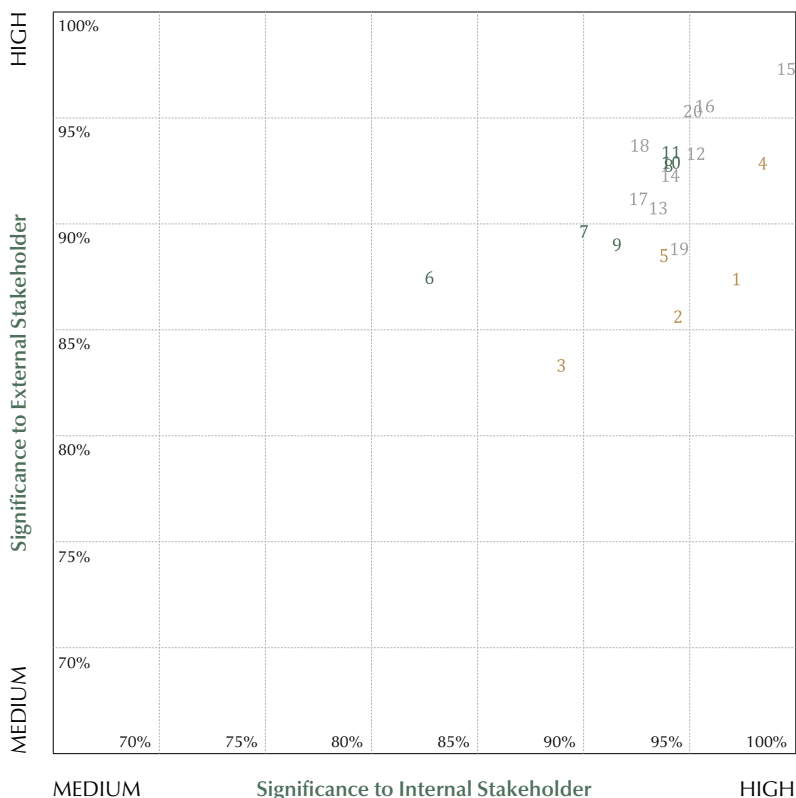
Stakeholder Engagement Study

In identifying its material sustainability matters, Socfindo has drawn from various internal and external sources of information, which includes informal and formal engagement with the stakeholders set out above. This also includes drawing on issues identified by relevant standards bodies such as RSPO, ISPO, GRI and SDGs. In addition for the purposes of this 2022 report, Socfindo has undertaken a formal stakeholder engagement study of its core stakeholders to identify the material matters. This included undertaking formal surveys and feedback from a full range of internal employees stratified to ensure feedback was obtained and represented the views of employees from field workers to head office and senior management as well as representative by gender. In addition, formal feedback from a full range of external stakeholders were obtained, from community, local NGOs, local government, customers and suppliers. The survey and engagements canvassed a broad range of concerns or interests for stakeholders in relation to sustainability from their perspective (assessing a broad base of Social, environmental and economic matters). In identifying its material sustainability matters, Socfindo as a member of the Indonesian community is particularly sensitive to the concerns of its Indonesian stakeholders as these are the stakeholders most affected by its activities and decisions.

Materiality Matrix Resulting from Stakeholders Assessment

As a result of undertaking the analysis above, the following 20 material matters were identified as being of particular concern or interest to Socfindo’s Stakeholders and to Socfindo in 2022. We note the list of material matters remains the same as our last 2020 report, however the relative ranking or importance of some matters has changed – see materiality matrix below for details.

MATERIALITY MATRIX SHOWING MATERIAL MATTERS OF IMPORTANCE TO INTERNAL VS EXTERNAL STAKEHOLDERS



LIST OF MATERIAL¹ MATTERS

ECONOMIC

- 1 CPO price
- 2 Certification
- 3 Land expansion
- 4 Productivity & yield
- 5 R&D – increasing yield, resisting Ganoderma

ENVIRONMENT

- 6 Deforestation
- 7 Peat
- 8 Reducing environmental impact
- 9 Greenhouse gas emissions
- 10 Water Issues
- 11 Waste - solid & liquid

PEOPLE

- 12 Wages, benefits and facilities for employees
- 13 Training & human resources
- 14 Workers' rights, child protection, grievance
- 15 Health
- 16 OSH
- 17 Equality
- 18 Smallholders and community development
- 19 Theft
- 20 Human rights

1. Please note material matters are not ranked in this table, the numbering and order in the list does not confer any information in relation to the relative importance of each matter. For information of an analysis of relative importance between external and internal stakeholders, please see the materiality matrix.

Material Matters for this Report

There has been a shift in the relative importance of some of the material matters compared to 2020. The most obvious shift is we see the focus away from only economic matters which were front of mind given the low CPO prices of 2019 and significant disruption and uncertainty from the Covid-19 pandemic early 2020. Wages and benefits for employees remains a top ranking material matter in 2022, as does CPO price and yield for internal stakeholders, however instead of wider industry economic issues we see the rise of health to the top ranked issue for both internal and external stakeholders reflecting a focus for people on issues around health as a result of the Covid-19


pandemic. In addition, Occupational Health and Safety and awareness of human rights which includes child protection and human rights defenders is a rising issue front of mind for all stakeholders. Another interesting trend is the rising importance of all material matters across the board. Compared to 2020 the vast majority of material matters rise to the level high importance in 2022 which reflects the growing awareness of a broad range of environmental and social sustainability issues consistently across different stakeholder groups, both internal and external and a recognition across stakeholders of the importance of sustainability.



📷 Assessing our material matters through informal field surveys.



PT. SOCFIN  INDONESIA
(SOCFINDO)

 The students using the company's school bus to go to school.

United Nations Sustainable Development Goals

Supporting SDGs

Socfindo continues to support the United Nations (UN) Sustainable Development Goals or (SDGs) and recognises their importance in creating a transformational global agenda for the development of our societies. Socfindo also recognises as a responsible local and global citizen, it has its role to play. Socfindo continues to be committed to the UN SDGs. Socfindo has mapped out which specific SDGs that its business impact the most and aligned its material topics and impact with the specific SDGs that are most material to its business footprint and its stakeholders. As part of its materiality review for this report, Socfindo has also re-examined its priority SDGs to make sure that these are still relevant.

Informed by its ongoing engagement with its stakeholders and based on an assessment of risks and opportunities Socfindo has identified and prioritised seven (7) SDGs which are most relevant to its business operations and reflecting the key material concerns highlighted by its stakeholders. See next page for details.



📷 Our employee's children going to school by bicycle.

Socfindo's SDGs



ZERO HUNGER

End hunger, achieve food security and improved nutrition and promote sustainable agriculture. This SDG is at the heart of Socfindo as a plantation company, significant food producer and leading agronomic researcher. In addition, as a developing country Indonesia still has many people who live close to or under the poverty line and to whom food security is a real issue. The issues of food security have recently risen in importance in local communities due to the impacts of the Covid-19 pandemic and the knock on effects on employment and inflation.



GOOD HEALTH AND WELL-BEING

Ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development. Production of the highest quality products and promoting the health and well-being of the wider Socfindo family and the communities they belong is a core focus for Socfindo. Again as a result of the Covid-19 pandemic, issues of health have been front of mind for both the Socfindo Family and members of the wider community.



QUALITY EDUCATION

Is the foundation to improving people’s lives and sustainable development. Ensuring a foundation of quality education for the wider Socfindo family, their communities, as well opportunities for ongoing training and up skilling is a core focus for Socfindo and deeply intertwined with health and well-being.



LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss. As a plantation company, improving sustainable land management practices are at the heart of minimizing its environmental footprint. In addition Socfindo’s land use practices and decisions have a large effect on other material issues like reducing GHGs.



DECENT WORK AND ECONOMIC GROWTH

Sustained, inclusive and sustainable economic growth is the engine which underpins all of the SDGs. Plantation companies like Socfindo are a major generator of wealth especially for rural areas of Indonesia, providing direct employment as well as supporting secondary businesses and communities in the areas they operate in. In addition, in developing countries like Indonesia increasing people’s prosperity is a key part of securing positive environmental outcomes.



PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation through global partnership for sustainable development. Cooperation and partnership are the means by which efforts can be scaled up to effect transformational impact. Rather than a separate goal, partnership and cooperation is an overarching method through which Socfindo achieves meaningful and measurable change. It is key that private companies like Socfindo, work together with other key players like local government and local institutions who are instrumental in being able to effect real change.



SUSTAINABLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns. At an industry level, as the lowest input, highest yielding food oil crop oil palm is at the centre of solving how to meet the world’s future increased food oil needs. As a company, eliminating waste and efficiency and wise use of resources are a core value and at the heart of Socfindo’s long term success farming the same soils over a 100 years.

📷 A view of Socfindo Conservation's medicinal garden.





Socfindo Conservation was set up in 2019 as a sustainability initiative of PT Socfin Indonesia for specific significant sustainability programs which have an external interface with the community or other third parties.

Socfindo Conservation Garden: Toga

Socfindo Conservation's flagship project is a medicinal garden, a concept known in Indonesia as Toga (Tanaman Obat Keluarga-Family Medicinal Garden). It is a place where the diversity of plants meets herbal remedies, in a tradition that is part of the cultural heritage of Indonesia. The Socfindo Conservation garden / Toga's purpose is to contribute to the preservation of biological and cultural diversity of Indonesia by collecting and planting medicinal plants and recording their traditional uses and recipes associated with its use.

The Socfindo Conservation garden is managed and implemented by a female-led Toga Team which is a collaboration between Socfindo employees and their wider families and it has grown significantly and been an incredible success due to the continual dedication and efforts of the Toga team. The Socfindo Conservation garden today is an outstanding physical garden with a collection of almost 1,500 plants, paired with an online catalogue and database as well as a hive of ongoing activities and courses aimed at a variety of subjects related to health, education, conservation, cultural heritage and community empowerment. The Socfindo Conservation garden serves as an important community resource in its own right, as well as a model and inspiration for other areas within Indonesia which may be interested in setting up similar projects. The online plant database and more information on the

OUR GOAL IS TO DELIVER LONG TERM POSITIVE IMPACT THROUGH PROGRAMS FOCUSING ON EDUCATION, CONSERVATION OF BIODIVERSITY & CULTURAL HERITAGE AND COMMUNITY EMPOWERMENT.

Socfindo Conservation garden's activities can be found here <https://www.socfindoconservation.co.id/index>.

Socfindo fully supports the Socfindo Conservation garden, which is established and run as a separate not for profit organization (yayasan) with any revenue generated being accounted separately and used for the further expansion of the Socfindo Conservation garden and its initiatives. In addition to providing funding, space and resources, Socfindo contributes to this project by providing its world class agronomy knowhow, nurseries, plant breeding and genetics laboratories and converting the gardens in front of the plantation bungalow in a prime location to host the collections.

This section provides a summary of some of the recent activities and successes of the Socfindo Conservation garden during this reporting period.



Part of the women-led Socfindo Conservation team on a plantation's visit.

Message from the Toga Team

Socfindo Conservation has worked on improving its garden since its beginning during Covid-19. Since then, it has grown to become a popular destination for both national and international visitors who want to see medicinal plants and learn about their diverse uses.

In addition to the Covid-19 challenges that we all faced, in our plantation community many women struggle to find meaningful full-time occupations that would normally be available both socially and also professionally in larger city environments. The Socfindo Conservation garden was born out of an activity that could be replicated in our plantations and where collaboration and common interest could be the driving force galvanizing around health, conservation of biological and cultural diversity for the good of both the individual and the community. From a seed idea, the interest in the Socfindo Conservation garden grew and so far, many women have been able to develop and use skills that were previously not possible such as trainer, tour guide, plant maintenance, data administrator, data research, management and compilation, photography & reporting. Over 150 dedicated women are now involved in the Socfindo Conservation garden and its results could not be achieved without all their collective efforts.

From modest beginnings, the Socfindo Conservation garden now has almost 1,500 plants in its collection

including some Indonesian rare plants. In addition to the physical plant collection, each plant is being inputted into a free online database providing information on its cultivation and uses including medicinal uses. This is continuing to grow, as is our physical collection. The Socfindo Conservation garden also plans to expand and plant more herbal varieties that can be used for herbal tea.

The Socfindo Conservation garden focuses not only on biodiversity and conservation but also actively takes part in community development through workshop and training which includes students, women and community groups both local and from around the region.

In 2022, Socfindo Conservation successfully developed a program with the local governments in North Sumatra, where Socfindo Conservation provides assistance in skills towards developing similar gardens in rural communities within the region, directly addressing food security issues.

We are very proud of the achievements and success of Socfindo Conservation garden and its activities for the community. This could only be achieved through the dedication of its entire team, involving 150 women in garden management.



Education & Empowerment

The Socfindo Conservation garden has become a hub for education; for schools as well as for women and community groups. Socfindo Conservation believes education is a key vehicle to empowerment, particularly practical educational programs that provide people with skills, methods and resources by which they can improve their own and community health, as well as to provide the ability to grow their own food and herbs, to make products that can be directly used or can also potentially provide alternative livelihoods.

A snapshot is set out below for how the Socfindo Conservation garden has contributed to SDG 4 Quality Education during this reporting period.

FEMALE EMPOWERMENT

The Socfindo Conservation garden is a highly visible model and example of a successful female led initiative in the community. Socfindo Conservation and the Socfindo Conservation garden is a female created, led and implemented initiative which exists only due to the collective efforts of the Toga Association, a collective with over 150 women involved including 4 women in leadership roles who comprise the entire leadership team.

150

Women Involved

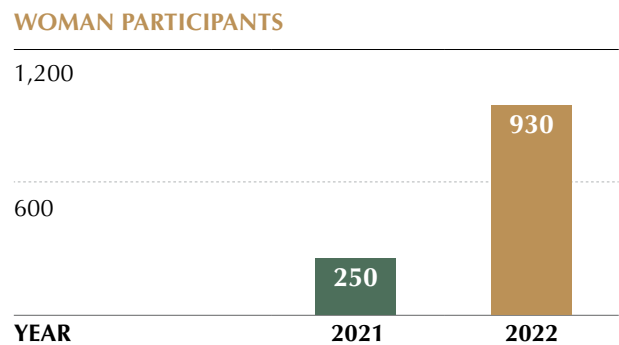
4

Women in Leadership

TOPIC OF COURSE	WOMEN PARTICIPANTS	
	2021	2022
Cooking	-	50
Fruit vinegar	-	65
Garden design and simplisia	-	43
Jamu scientific	50	180
Jamu scientific, eco-enzyme, medicinal garden	200	544
Making soap	-	20
Technical guidance for butterfly pea	-	28
TOTAL	250	930

TRAINING FOR WOMEN

In addition to being a female led initiative, the Socfindo Conservation garden also has a number of courses targeted to other women groups within the community. During 2021 and 2022, a total of 1,180 women have received training at the Socfindo Conservation garden, over a wide range of course topics. There has been close to 400% growth in 2022 compared to 2021. A breakdown is provided in the following table:





📹 A guided tour of Socfindo Conservation medicinal garden.

COMMUNITY EMPOWERMENT – PROGRAM TO REPLICATE THE MEDICINAL GARDEN

Through the Socfindo Conservation garden, Socfindo Conservation implemented a number of programs to empower the community. Socfindo Conservation has collaborated with local governments in North Sumatra to develop medicinal gardens in their district. Firstly, the Toga team trained them on how to develop their own medicinal garden. The training activity covers both theory and practice about medicinal plants and health benefit, land analysis, garden style and design, areal preparation, sowing and planting techniques also garden care and management. Not only is training provided and we also provided seedlings and consultation for the development of their medicinal garden. The total of plants distributed to districts through this program is as follow:

PLANTS DISTRIBUTED

DISTRICCS	TOTAL
North Labuhan Batu	15,312
Serdang Bedagai	804
South Tapanuli	47,754

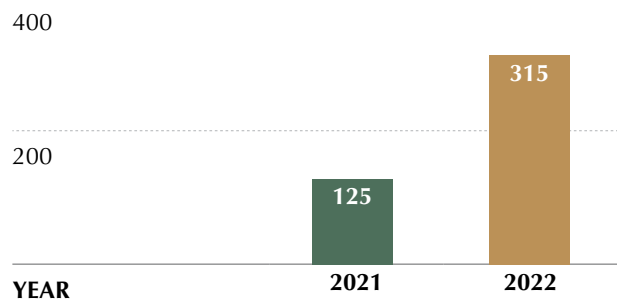
STUDENT EMPOWERMENT

A total of 440 students have attended courses at the Socfindo Conservation garden during 2021 and 2022 and 3,380 have visited the gardens. We can see that 2022 has more than 100% year on year growth compared to 2021 . A breakdown is provided below:

Number of Students That Have Attended Courses

TOPIC OF COURSE	PARTICIPANTS	
	2021	2022
Eco-enzyme	-	148
Jamu scientific	-	124
Planting Medical garden	125	43
TOTAL	125	315

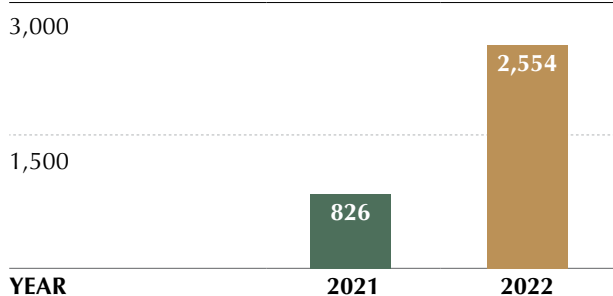
PARTICIPANTS



Number of Students That Have Visited Socfindo Conservation.

STAKEHOLDER	PARTICIPANTS	
	2021	2022
School	663	1,937
University	163	617
TOTAL	826	2,554

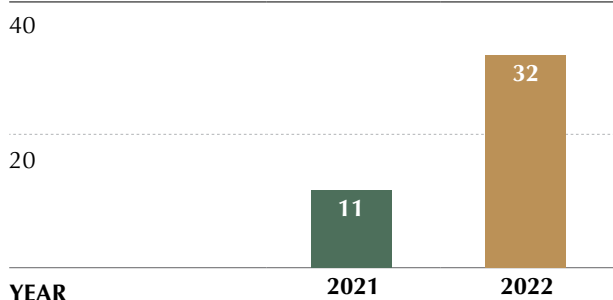
PARTICIPANTS



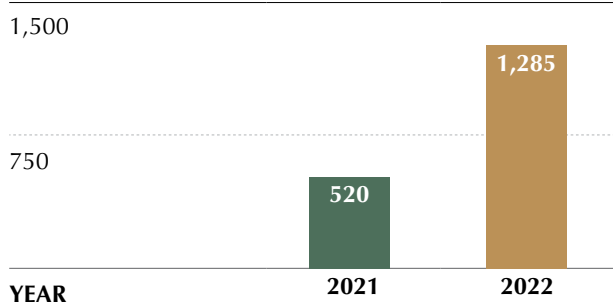
TOTAL TRAINING

During 2021 and 2022, a total of 43 courses were provided with 1,805 people receiving training. Total of courses and people who have received training:

COURSES



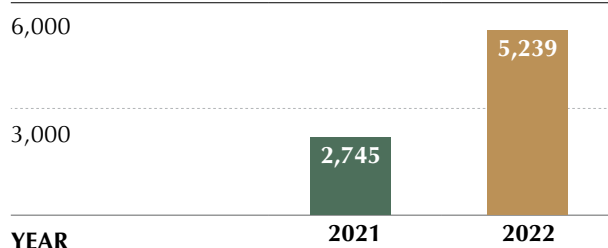
PEOPLE



This can be further broken down from the following villages and districts located around Socfindo's estate.

VILLAGES/DISTRICTS	PARTICIPANTS	
	2021	2022
Aceh Tamiang	-	35
Aek Natas	-	30
Bangun Bandar	145	150
Batubara	-	20
Dolok Masihul	50	28
Dolok Sagala	-	20
North Labuhan Batu	-	140
Lae Butar	-	25
Matapao	0	20
Medan	125	144
Nagan Raya	-	30
Serdang Bedagai	-	214
South Tapanuli	200	404
Tebing Tinggi	-	25
TOTAL	520	930

TOTAL VISITORS



📹 Workshop on making fruit vinegar.

Development of Educational Resources

Medicinal Plant Books

In addition to the online database and physical garden, the Toga team is continually working to bring on new educational resources to reach more people and these include the following books which are also available here <https://www.socfindoconservation.co.id/impact#Books>.

SOCFINDO FAMILY MEDICINAL PLANTS

The result of a collaboration between Socfindo Conservation garden, IPB University and Bogor Botanical Gardens, this book, published in 2021, is a compilation of information on 500 medicinal plants found in Indonesia. In addition, all the plants described in the book have been planted in Socfindo's medicinal garden.



ONE HUNDRED MEDICINAL PLANTS

Provides a hundred different types of common medicinal plants and a technical guide to identify plants in Socfindo Conservation garden.



SOCFINDO CONSERVATION WORKSHOP BOOKLET

A practical guide to assist training about medicinal plants. The booklet walks readers through nine modules related to establishing a medicinal garden, including propagation, care and making jamu and eco-enzyme.



House of Inspiration

Socfindo Conservation also developed the House of Inspiration which opened in June 2022. This house will be used for training sessions, workshops or seminars. This Inspiration House is also equipped with a library containing 1,000 books collected by the Toga team and generously donated by local and external donors.



📹 The new library in the Inspiration House.



Herbal plant workshop held by Socfindo in a partner village for the local women association.

Education – Focus on Assisting Conservation for the Community

Planting medicinal plants in the garden is a tradition of the Indonesian family that has been passed down from generation to generation mostly by oral communication until now. However, the numbers of species are still very limited depending on the needs of the family when compared to the more than 30,000 species of plants which exist in the tropical forests of Indonesia of which around 9,600 species are known to have medicinal properties. Many have not been widely used for treatment.

The knowledge of medicinal plants is still limited inside the community and much of this knowledge is not being passed down and in danger of being lost due to not being properly documented. This has motivated Socfindo Conservation to collect, cultivate and document almost 1,500 species of medicinal plants.

When people come to visit Socfindo Conservation, they can easily find the information for each species. This is something new for the communities, especially for children who are not very familiar with medicinal plants. Socfindo Conservation even provides certain medicinal plants should the visitors wish to plant them in their garden.

An example was the visit from the ladies group of North Labuhan Batu regency to Socfindo Conservation. Not only did they learn about these medicinal plants but also the concept in which they wish to adopt so they

can build and implement this project in their own area and record and propagate their own unique species.

Through the program they realised that it is important to conserve the medicinal plants and also to provide and record clear information about the characteristics and uses of each species to preserve this information for future generations and to teach people in the community. There are many types of plants around us that look similar but actually have different characteristics, which may be dangerous if consumed incorrectly and not identified properly. As many people are now caring about the preservation of medicinal plants, they need to be aware of proper use of such plants.

Hopefully in the future, this conservation concept can be applied in all regions of Indonesia that have different types of endemic medicinal plants and the information will be widely known by the public at large through direct observation. Therefore, Socfindo Conservation will support the ladies group from North Labuhan Batu to create this project, starting from the concept to providing the types of plants for cultivation.

This is also a good start to catalyse the spirit of other groups or organisations into action to enrich the community knowledge about medicinal plants which are of Indonesian culture and local wisdom.



Zero Hunger

With the Covid-19 epidemic and resulting inflation, food security has become a major issue in Indonesia. As well as its focus on medicinal plants, The Socfindo Conservation garden also has specific focus on food production and to assist with improving food security within the communities it belongs to. A snapshot is set out below on how the Socfindo Conservation garden has contributed to SDG 2 Zero Hunger during this reporting period.

PROGRAMS RELATED TO FOOD SECURITY

Socfindo Conservation has run the following courses which specifically relate to food security.

NO TOPIC OF COURSE

- 1 Cooking
- 2 Eco-enzyme
- 3 Fruit vinegar
- 4 Garden design and simplisia
- 5 Jamu scientific
- 6 Making soap
- 7 Organic agriculture
- 8 Plant identification
- 9 Planting medicinal garden
- 10 Technical guidance for butterfly pea



📷 Preparing vegetables seedlings.

PRODUCTS

In addition to teaching courses Socfindo Conservation garden has also made the following food and dry herb products from plants grown in its garden. Not only does the Socfindo Conservation garden produce these products, many of the Socfindo Conservation garden courses centre around passing the knowledge of how to grow and make these products to the community.

1 Herbal drinks (jamu):

Jamu Sehat (healthy drinks)

Jamu Sinom (herbal drinks made of turmeric and tamarind)

2 Simplisia (tea):

Dried butterfly pea flower

Dried chamomile

Dried king of drug

3 Jamu scientific (traditional herbal recipes):

Herbs for diabetes

Herbs for gout

Herbs for hypertension

Herbs for cholesterol

Herbs for hemorrhoids

4 Trigona honey

5 Eco-enzyme

6 Liquid smoke

7 Homemade fruit jam

8 Mushroom:

Oyster mushroom

Black jelly fungus

9 Fruits and vegetables



📷 A happy combination of an educational tour mixed with a dose of healthy honey tasting at Socfindo Conservation garden.

Zero Hunger – Focus on Improving Community Food Security in South Tapanuli

The South Tapanuli Regency Government has a program on family food security. As part of this, South Tapanuli collaborated with Socfindo Conservation to conduct trainings for villages in South Tapanuli, aiming at sharing knowledge about medicinal plants.

This training catered for 214 villages in South Tapanuli, whereby each village sent two of their representatives. The participants were divided into 5 groups. Each group attended three-days training during which everyone was provided with a workshop booklet. The booklet was designed to incorporate both theory and field practice.

The educational material contained 9 practical training modules which ranged from how to analyze land and prepare a garden, to propagation, plant types, garden care, harvesting and making jamu and eco-enzyme. In essence and end to end training for starting a medicinal garden through to creating their own medicinal products from their gardens.

The training activities for these five groups have now been successfully completed. Overall the village representatives were happy to participate in this activity because it allowed them to gain new knowledge. They said they are looking forward to implement their new skills at home and in their villages, whilst potentially allowing for new income streams for the family and villages in South Tapanuli.

Focus on Food Security – Growing Organic Vegetables and Herbs in Berastagi

In addition to the main medicinal garden in Bangun Bandar, The Toga association also grow herbs and organic vegetables in Berastagi. This town is part of the Karo district, having specific weather conditions that are suitable for growing vegetables and fruits. Various kinds of vegetables and fruits are grown in Berastagi such as chicory, kale, radishes, broccoli, cauliflower, beets, parsley, strawberries, passion fruit and much more. In addition to vegetables, herbal plants are also planted in Socfindo’s Berastagi garden such as Ashitaba (*Angelica keiskei*), Comfrey (*Symphytum officinale*), Chinese Mugwort (*Artemisia argyi*), Stevia (*Stevia rebaudiana*), Yellow Dock (*Rumex crispus*), Borage (*Borago officinalis*), etc.

The produce grown in these gardens is provided to the community / Socfindo families. It also functions as a hands on classroom where Socfindo families and the community can come and learn how to grow their own organic vegetables and herbs.



📷 Plants ready for transport to South Tapanuli's collaboration project

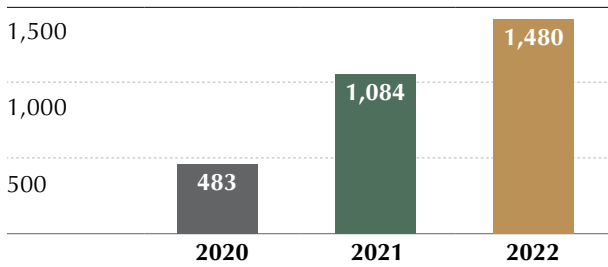


Biodiversity & Conservation

The Socfindo Conservation garden has become an important regional focal point for showcasing the biodiversity and importance of Indonesia’s medicinal plants as well as the conservation of medicinal plants and traditional cultural knowledge with its significant physical collection, nursery, educational programs and online database. A snapshot is set out below for how the Socfindo Conservation garden has contributed to SDG 15 Life on land during this reporting period.

THE PLANT COLLECTION

NUMBER OF PLANT SPECIES



The Socfindo Conservation garden a now has 1,480 plants in its gardens, an increase of 997 species from 2020. This collection can be broken into the following categories:

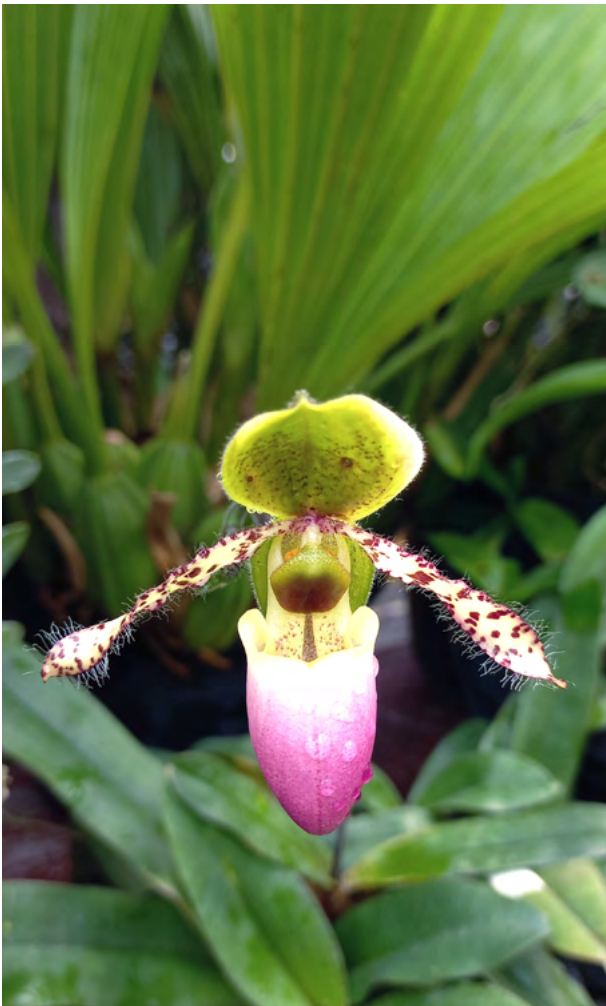
NO	AREA	2020	2021	2022
1	Principal	158	570	600
2	Beneficial Weed	59	59	59
3	Vegetable	0	57	46
4	Orchard	139	139	139
5	Aquatic	53	53	53
6	Palm	53	35	53
7	Orchid	0	150	209
8	Fern	8	8	8
9	Bamboo	13	13	13
10	Berastagi Garden (Highland)	-	-	300
TOTAL		483	1,084	1,480

NEW BERASTAGI GARDEN

In addition to the main garden in Bangun Bandar, in 2022 Socfindo Conservation established a second garden in Berastagi specifically for highland medicinal plants. Berastagi is a highland approximately 1,300 m above sea level and the mean annual temperature of the district is cooler (18°C - 25°C), suitable for most vegetable growing. Our Berastagi garden houses specific medicinal plants that only grow in highlands that are not possible to be planted in Bangun Bandar where it is hotter. So far 300 plants have been planted there and this has allowed us to enrich our collection from 1,084 to 1,480 plants as well as providing a new unique habitat to cultivate in.



📹 The highland plant collection is our latest addition in our collection.



📷 One of beautiful orchids in our collection.

A LIVING CLASSROOM – CREATING AN ONLINE DATABASE

A core part of Socfindo Conservation’s work has been to not just have a physical garden for people to look at and also to create an online database and catalogue of all these species so people can not only see them and also learn about their propagation and uses. This online database has been integrated into the physical garden to create a real living classroom where people can see, smell and then learn about the plants as they go through the garden. The Toga team has worked hard to make the garden into this living classroom, by having a signboard for each plant which lists its common and scientific name. It also then has a QR code which a person in the garden can scan with their smart phone and be taken to the specific plant in the Socfindo Conservation online plant database which has all the information which has been recorded about the plant. This will include information about its propagation

and medicinal use. So far 59% of the entire collection has been uniquely identified and QR coded, with 500 plants in 2021 growing to 888 plants in 2022. All this is done by the tireless work of the Toga Association.

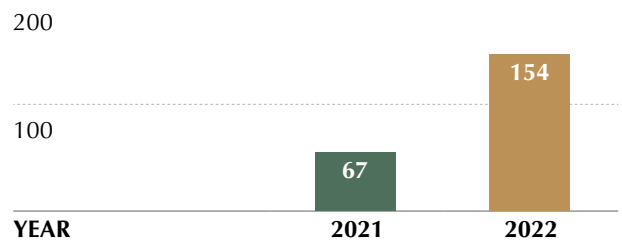


📷 Accessing the Socfindo Conservation public database with the QR code.

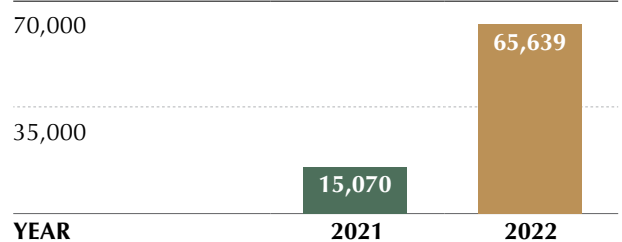
NURSERY

Socfindo Conservation has also become a significant nursery resource for the propagation of medicinal plants. Socfindo has leveraged its cutting edge plantation and agronomy know how, technology and resources to provide a significant nursery resource for medicinal plants. The nursery has propagated over 65,000 medicinal plants in 2022 from over 67 different species. Socfindo also provides seedlings to community groups to assist them in starting their own community gardens

NUMBER OF SPECIES



NUMBER OF PLANTS PROPAGATED





Health

The foundation of the Socfindo Conservation garden is health, health of land and health of the community. As it grows in its importance as a store of traditional Indonesian knowledge on medicinal plants and recipes, it also becomes an important centre for passing on this information back into the community to improve the health and well being of both the individual and the community. A snapshot is set out below for how the Toga has contributed to SDG 3 Good Health & Well Being during this reporting period.

500

Traditional Recipes
Recorded and Saved

1,237

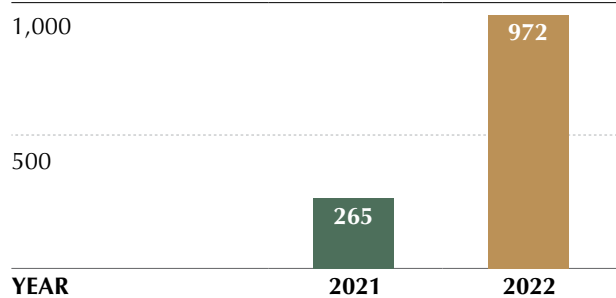
Total Participants

CONSERVATION OF TRADITIONAL KNOWLEDGE

As well as knowledge of medicinal plants, the Socfindo Conservation garden has become an important repository for traditional Indonesian medicinal recipes. There have been 500 traditional recipes recorded and saved. In addition to recording these recipes, the Toga team have taught 11 herbal recipes for common health problems in Indonesia which cover diabetes, high blood pressure, cholesterol, hemorrhoids, arthritis, Gastroesophageal Reflux Disease (GERD), liver disfunction, gout, gallstone and obesity.

A core focus of the Socfindo Conservation garden is to promote and provide practical steps to promote health in both the Socfindo Family and the wider community. The medicinal garden is not just a repository for plants and traditional cultural health recipes but a living hub for the teaching and dissemination of how to grow, harvest herbs and to make traditional recipes to keep them live in the community and to help make healthier people. This is evident in the 11 traditional recipes taught to the community set out above. They have been taught through workshops for women associations and schools focused on science based jamu recipes. 1,237 people have attended these workshops

PARTICIPANTS OF JAMU SCIENTIFIC COURSE



FOCUS ON HEALTH – SCIENTIFIC JAMU RECIPES

Jamu is a herbal drink, which has been part of the Indonesian culture for many generations. It can be found throughout Indonesia, however it is most prevalent in Java. The drink has a rich and ancient history, originating during the times of the Mataram Kingdom (8th to 10th centuries) more than 1,300 years ago. The first recipes were found in records in the royal courts.

Many people in Indonesia rely on jamu (traditional herbal drink) to maintain their wellness, especially during the Covid-19 pandemic. It can be used as a supplement to strengthen the immune system. Usually made at home, it may also be purchased from trusted sources to ensure that they are not full of artificial ingredients. Jamu is seen as more of a preventative measure than a cure and the health-giving drink is viewed holistically, in that it treats body, mind and soul.

The recipe for jamu and the way it's consumed can vary widely depending on the person and place. Mostly, the recipes were passed down by word of mouth through families and each family may also have their own version of the drink. Based on that situation, Socfindo Conservation has developed its jamu scientific recipes under the scientific guidance from the Center for Research and Development of Medicinal Plants and Traditional Medicine (Balai Besar Penelitian dan Pengembangan Tanaman Obat dan Obat Tradisional/ B2P2TOOT).

Five scientific jamu recipes were developed by Socfindo Conservation for common diseases in Indonesia which have been widely taught to our surrounding community as described below.

JAMU WORKSHOPS

In 2022, Socfindo Conservation collaborated with the local governments of the regions of South Tapanuli and North Labuhan Batu to run a community development project called "Family Food Security Program." The districts sent representatives of the women association – "family welfare" to be trained under the Socfindo Conservation program. These workshops were highly successful as it provided a new source of inspiration and enthusiasm for the members of rural communities, who have faced some difficult time during the Covid-19 pandemic.



Ingredients for ready-made jamu by Socfindo Conservation.



Fresh jamu produced by Socfindo Conservation.



📷 Scientific jamu workshop at Socfindo Conservation.

CONSERVATION OF TRADITIONAL KNOWLEDGE: RECIPE FOR SCIENTIFIC JAMU

Jamu Scientific for Gout Disease

INGREDIENTS

- 6 gram dried field milk thistle (*Sonchus arvensis L*)
- 15 gram dried sappanwood (*Biancaea sappan*)
- 9 gram dried kepel apple (*Stelechocarpus burahol*)
- 9 gram dried javanese turmeric (*Curcuma xanthorriza Roxb*)
- 9 gram dried turmeric (*Curuma longa L.*)
- 9 gram dried chanca piedra (*Phyllantus niruri L.*)
- 1 litre water



Jamu Scientific for Arthritis Disease

INGREDIENTS

- 3 gram dried fennel seed (*Foeniculul vulgare*)
- 5 gram dried cat's whiskers leaves (*Orthosiphon aristatus*)
- 5 gram dried scouring rush (*Equisetum hymale*)
- 15 gram dried javanese turmeric (*Curcuma xanthorriza Roxb*)
- 15 gram dried turmeric (*Curuma longa L.*)
- 7 gram dried chanca piedra (*Phyllantus niruri L.*)
- 1 litre water



Jamu Scientific for Cholesterol Disease

INGREDIENTS

- 1 gram dried *Senna alexandrina*
- 6 gram dried west indian elmis leaves
- 6 gram dried field milk thistle (*Sonchus arvensis L*)
- 5 gram dried green tea
- 5 gram dried javanese turmeric (*Curcuma xanthorrhiza Roxb*)
- 4 gram dried turmeric (*Curuma longa L.*)
- 3 gram dried chanca piedra (*Phyllanthus niruri L.*)
- 0.8 litre water



Jamu Scientific for High Blood Pressure Disease

INGREDIENTS

- 15 gram dried celery (*Apium graveolens*)
- 9 gram dried indian pennywort leaves (*Centella asiatica*)
- 9 gram dried cat's whiskers leaves (*Orthosiphon aristatus*)
- 9 gram dried javanese turmeric (*Curcuma xanthorrhiza Roxb*)
- 9 gram dried turmeric (*Curuma longa L.*)
- 9 gram dried chanca piedra (*Phyllanthus niruri L.*)
- 1 litre water



Jamu Scientific for Hemorrhoids Disease

INGREDIENTS

- 15 gram dried caricature plant (*Graptophyllum pictum*)
- 12 gram dried trefle gros (*Desmodium triquetrum*)
- 9 gram dried coleus leaves (*Coleus scutellarioides*)
- 3 gram dried javanese turmeric (*Curcuma xanthorrhiza Roxb*)
- 3 gram dried turmeric (*Curuma longa L.*)
- 3 gram dried chanca piedra (*Phyllanthus niruri L.*)
- 1 litre water



Jamu Scientific for Diabetes Disease

INGREDIENTS

- 5 gram dried Indonesian bay leaf (*Syzygium polyanthum*)
- 5 gram dried king of bitter (*Andrographis paniculata*)
- 7 gram dried cinnamon (*Cinnamomum burmanni*)
- 10 gram dried javanese turmeric (*Curcuma xanthorrhiza Roxb*)
- 0.8 litre water





Our MT Gano Seeds showing an oil rich mesocarp.

MARKETPLACE

Certification

Certification is one of the key pillars of Socfindo's sustainability strategy by which sustainability is implemented throughout the organization in a verifiable way. Socfindo supports and complies with leading industry sustainability certification and verification schemes and has been an early adopter and champion for the core sustainability standards for palm and rubber. Robust certification standards provide a consistent measurable benchmark for an organisation's sustainability performance that is objectively certified through onsite third party audits providing independent verification and assurance to stakeholders, consumers and the general public.

Certification allows the market to distinguish between those that have taken on the additional burden and cost of implementing sustainable practices from those that have not. It is then up to buyers and end consumers to do their part for sustainability by rewarding this additional ongoing effort by creating the market demand for premium sustainably produced products. We provide an overview below on the core sustainability certifications which Socfindo follow in its palm and rubber business.

Oil Palm

A core pillar in Socfindo's sustainability strategy is to proactively ensure it satisfies and covers all the requirements of the evolving RSPO and ISPO standards. Socfindo considers the most relevant and comprehensive standard for palm products is the Round Table of Sustainable Palm Oil (RSPO) Certification standard. In addition, in relation to the specific Indonesian context, the Indonesian Sustainable Palm Oil Principles & Criteria (ISPO) is an equally important domestic mandatory certification scheme. We consider that the oil palm sector currently has the most robust global sustainability standards compared to all agricultural crops.

Socfindo is committed to producing sustainable certified oil palm traceable to plantation level and is proud to confirm that 100% of its oil palm is sustainably certified and fully traceable back to the plantation. Socfindo has been an RSPO member since 2004 and achieved full certification for all its mills and plantations in 2015. Currently Socfindo maintains RSPO certification for all its mills and all of Socfindo's palm products are sustainably certified under the RSPO and fully traceable to plantation.



ROUNDTABLE ON SUSTAINABLE PALM OIL (RSPO)

The Roundtable of Sustainable Palm Oil (RSPO) in its latest iteration is currently the most robust, comprehensive sustainability standard setting a benchmark for certification of agricultural products.

Established in 2004, the RSPO is a not-for-profit that unites stakeholders from the 7 sectors of the oil palm industry: oil palm producers, processors or traders, consumer goods manufacturers, retailers, banks/investors and environmental and social non-governmental organisations (NGOs), to develop and implement global standards for sustainable oil palm. The RSPO has developed an evolving set of environmental and social criteria which companies must comply with in order to produce Certified Sustainable Palm Oil (CSPO). Currently the RSPO has more than 4,000 members worldwide and certifies 13.61 million tons of sustainable oil palm which represents 19% of oil palm globally produced. For more details on the RSPO please see <https://rspo.org/who-we-are>.

The current 2018 iteration of the RSPO Principles and Criteria are a zero-deforestation standard through its requirement for members to implement the high carbon stock approach. It also prohibits expansion onto peatlands as well as providing measures for the management, protection and eventual restoration of peatland which was converted into palm plantation prior to the birth of the RSPO. As well as a full suite of environmental standards, the RSPO also comprehensively covers human rights, social and labor issues with the latest standard strengthening its already stringent labour and employment rights. The

RSPO standard receives a full review and update every 5 years and currently this already very high standard is in the process of a full standard review with new RSPO principles and criteria 2023 being released in November 2023. The new 2023 principles & criteria will be a further significant raising of the bar, of what already is the world's most robust and comprehensive sustainability standard for agricultural products. For more details in the RSPO and the new 2023 update, please see <https://rspo.org/as-an-organisation/our-standards/standards-review-2022-2023/>.

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RSPO certification for each mill requires verification every year, which involves a mandatory in depth onsite audit against the full RSPO criteria, thus maintaining RSPO certification requires constant improvement in practices, vigilance and training of staff in the field. To achieve this, Socfindo has embedded the RSPO standard into the core of its strategy for producing sustainable oil palm.



INDONESIAN SUSTAINABLE PALM OIL (ISPO)

The Indonesian government under the Ministry of Agriculture established a mandatory certification scheme in 2011, namely the Indonesian Sustainable Palm Oil Principles & Criteria (ISPO) to ensure that all producers live up to specific legal, environmental, economic and social standards when operating in


Indonesia. The standard was revised in 2020 by the Presidential Regulation Number 44 as emphasised by the National Accreditation Committee. The additional revisions are designed to increase market acceptability and competitiveness of Indonesian palm products and also to reduce greenhouse gas emissions, as part of the Indonesian climate policy. In addition to RSPO certification all Socfindo's mills and plantations have been fully ISPO certified since 2016. For more information on ISPO see <http://www.ispo-org.or.id/index.php?lang=en>.



PROPER

PROPER is a government policy by the State Ministry for the Environment that aims to improve the performance of private operator's environmental management in accordance with the Indonesian laws and regulations. The implementation of this instrument follows the principles of good governance (transparency, justice, accountability and community involvement) in environmental management. 10 out of 11 plantations of PT Socfindo received a PROPER certificate, showing that the company has made the required environmental management efforts in accordance with the applicable rules and regulations.



 Safety practices is a key component of our RSPO and ISPO certifications.



Rubber

Socfindo's two rubber factories are certified against ISO 9001. ISO 9001:2015 is defined as the international standard that specifies requirements for a Quality Management System (QMS). Organisations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements.



PROGRAMME FOR THE ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

The PEFC (Programme for the Endorsement of Forest Certification) is a leading international sustainable forest management and chain of custody certification. For more information on the PEFC please see <https://pefc.org/standards-implementation/standards-and-guides>. In Indonesia the PEFC is implemented through the Indonesian Forestry Certification Cooperation (IFCC) which was established on Oct 2011 and was

accepted as the National Governing Body of PEFC in Indonesia as of November 2012. For more information on the IFCC, see here <https://www.pefc.org/discover-pefc/our-pefc-members/national-members/indonesian-forestry-certification-cooperation-ifcc>.

Socfindo is pursuing PEFC certification for its rubber operations and since mid 2021 has started to implement the PEFC standard in its rubber plantations. Socfindo has completed its full High Conservation Value (HCV) assessment of its rubber plantation as a key component of preparation to implement this standard. Currently, Socfindo is implementing all of criteria of PEFC standard with a goal to be fully PEFC certified by the end of 2023/ early 2024.



GPSNR

The Socfin group is a founding member of GPSNR, the Global Platform for Sustainable Natural Rubber, created in 2018. The platform has 12 Principles that are declined into a policy framework, setting 8 overarching themes that include commitments to legal compliance, community livelihoods, healthy functioning ecosystems and respecting all human rights. GPSNR is governed by a general assembly and an executive committee that is elected by members and the work is progressed through five member driven working groups (Policy Toolbox, Smallholder Representation, Shared Responsibility, Strategy and Objectives and Capacity Building). Socfindo anticipates that the GPSNR will become its core certification for its rubber business once it is fully released and that GPSNR will become a comprehensive standard like RSPO is for palm oil. GPSNR is not yet at the standard implementation phase.

As initial steps in demonstrating assurance to the GPSNR standard, Socfindo has submitted its "Reporting Requirement" documents in 2022 for period 2021. This is the first progress report that was implemented under GPSNR Policy Framework. For more information on GPSNR standard please see <https://sustainablenaturalrubber.org/>.

OTHER CERTIFICATIONS

In addition to these comprehensive sustainability certifications, all Socfindo's operations are implemented following the SMK3 standard, which is a health and safety management system. Its seed production unit has ISO 9001:2015; ISO 14001:2015, ISO 45001:2018) and its laboratory was awarded the ISO17025:2015 by the national accreditation committee "Komite Akreditasi Nasional" (KAN).

The rubber plantation have achieved ISO 9001 while their respective factories have achieved the SNI1903:2017.

Traceability

100% OF SOCFINDO'S PALM PRODUCTS ARE FULLY CERTIFIED AND TRACEABLE BACK TO THE PLANTATION LEVEL

Importance of Traceability

Traceability is important for both transparency and to build trust with end users so that they can be assured of where the ingredients and raw materials come from. The market today demands more sustainable products and this involves knowing where they have been sourced from. It is also essential for product quality and food safety reasons. Traceability is a key vehicle for responsible producers like Socfindo who through traceability certification can demonstrate to customers the point of origin and supply chain involved in each shipment of their products providing an extra level of trust and transparency in the goods they produce. 100% of Socfindo's oil palm products are traceable right back to the plantation level.

Traceability in Socfindo

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Traceability to mill and plantation

Traceability to mill refers to the traceability level of products processed by a refinery, right down to mill or Crude Palm Oil (CPO) /Palm Kernel (PK) level. Traceability to plantation refers to the traceability level of products right down to plantation where the specific palms which produced the fresh fruit bunches were grown. Socfindo's directly controlled supply chain as an upstream producer finishes at the CPO / PK level. All of Socfindo's CPO and PK can be traced back to the plantations and it is certified as such under the RSPO certification scheme.

100%

CPO & PK traceable to Plantation



 The traceability process of our certified palm products starts in the field aided by the latest technology.



📷 Transporting Socfindo's crop to the mill whilst ensuring full traceability.

RSPO Supply Chain Certification

Under the RSPO supply chain certification, if it can be proven that a specific batch of Crude Palm Oil (CPO) originated from an RSPO certified estate or mill and is kept physically isolated from all other oil palm sources throughout the supply chain (including other segregated RSPO-CSPO sources), it can be sold as 'Identity Preserved' (IP) certified sustainable CPO. Socfindo is proud to report that 100% of its palm products are now certified under the IP method, having its supply chain uniquely identifiable to one of our RSPO certified mill and its certified supply base.

100%

CPO & PK RSPO IP Certified

Rubber

Socfindo's crumb rubber products are sourced from our own rubber plantation and managed sustainably to the PEFC standard. Rubber latex and lump as raw materials come 100% from Socfindo's own estate. Currently Socfindo is pursuing PEFC Sustainable Forest Management certification for the rubber plantation scope and chain of custody for our rubber mills (crumb rubber industrial scope). This certification will verify the traceability of Socfindo's rubber products to the plantation level and that the rubber plantations have been managed in accordance with international sustainable forestry management standards.



Recording FFB and quality control at collection point by officer.

Productivity & Yield

The Importance of Raising Productivity and Yield

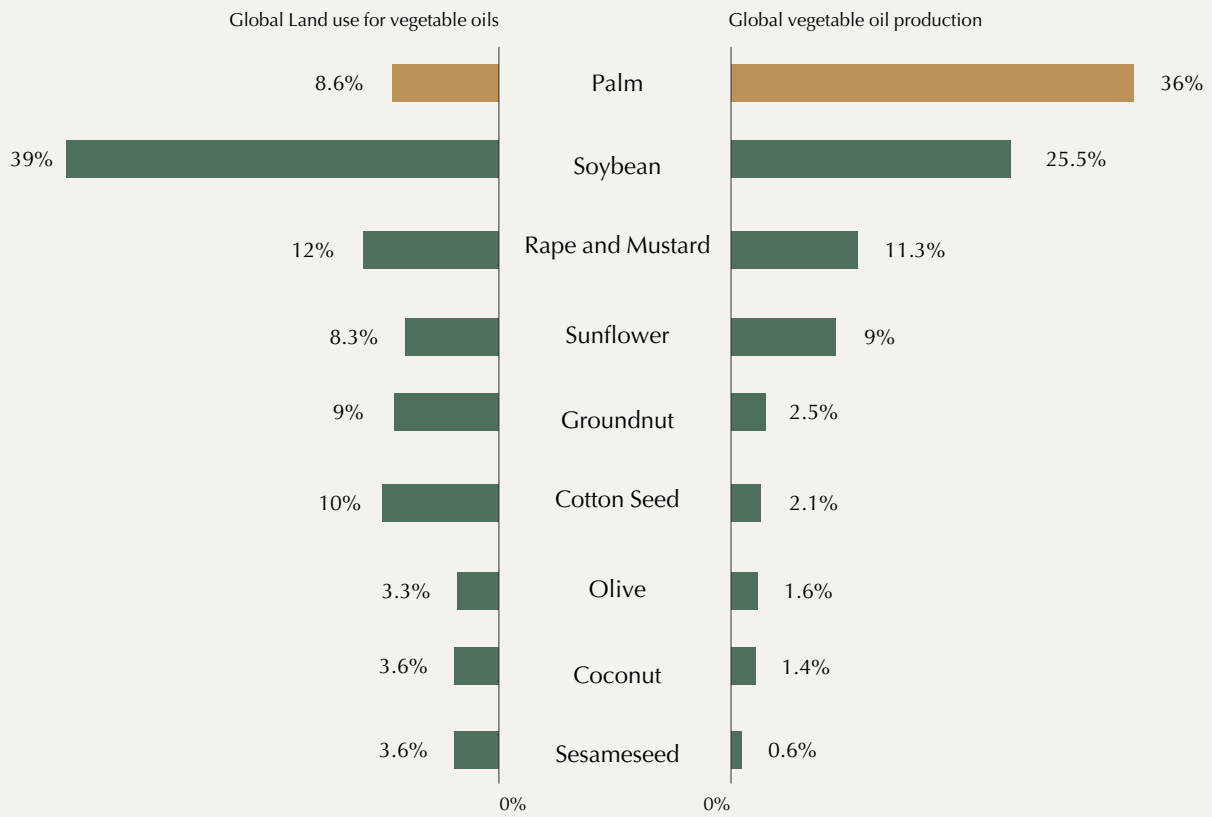
Increasing the yield and productivity of oil palm is the single most important method to improving the sustainability of oil palm production and to solving the dilemma of how to meet the world's growing demand for food oil, without a commensurate expansion in land base. Improvements in yield and productivity, provide not just economic gains but also social and environmental benefits.

Palm oil has a crucial role to play in meeting the world's demand for food oil and preventing further deforestation of our remaining intact forest cover areas. If we want to limit our environmental impact, reducing the amount of land we devote to agriculture is key. The less land we need for farming, the better. Despite the attacks on palm oil, as a food producing crop it is far superior than any alternatives. On average, oil palm produces on average 2.9 tonnes of palm oil per hectare which is around four times higher than alternatives such as sunflower or rapeseed oil and 10 to 15 times higher than popular alternatives such as coconut or

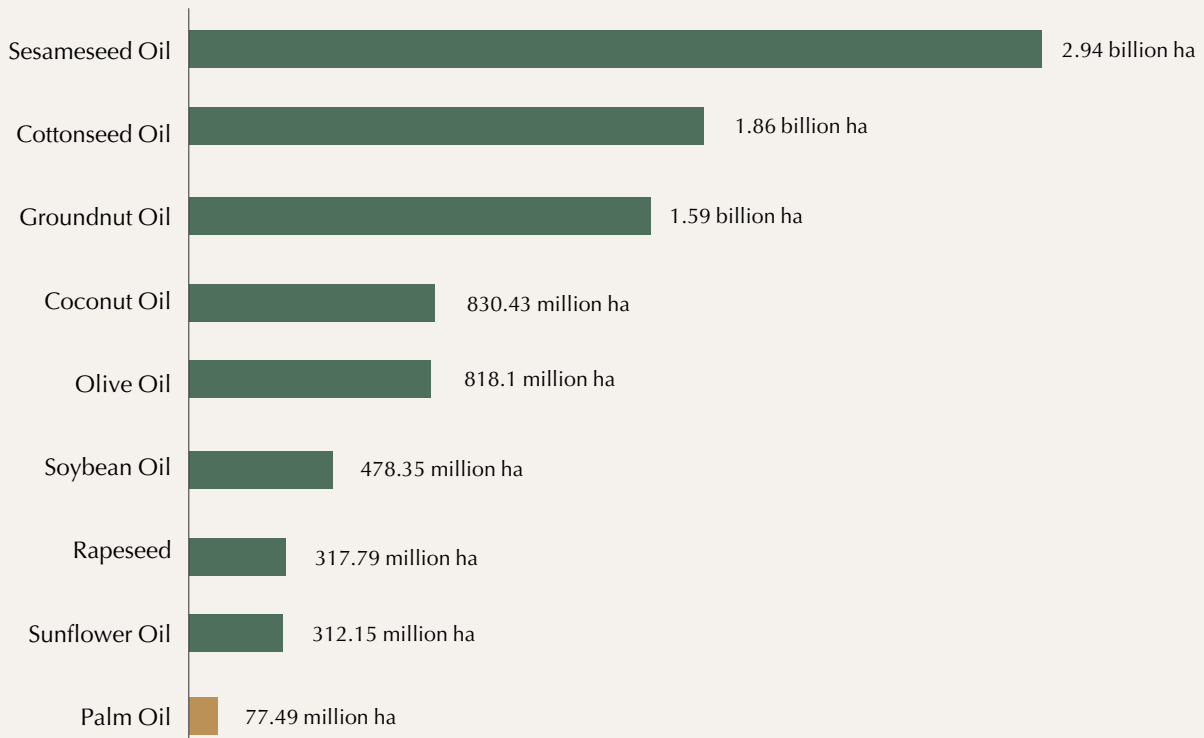
groundnut oil. We note that Socfindo itself produces on average 5 tons of palm oil per hectare with 25% of its plantations achieving more than 6 tonnes / ha. Based on the lower global average of 2.9 tonnes/ha, oil palm currently produces 35% of the world's food oil, from less than 9% of the croplands devoted to food oil¹. From the graph on the right, we can see that if we were to try to "replace" palm oil with alternative food oil crops that we would require a significant increase in the expansion of agricultural land – which would only come from further conversion of forests and primary ecosystems to agricultural land. This is not meant to suggest that there are not issues within the palm oil industry and bad actors which need to be addressed and that the narrow focus on palm oil as the sole cause and driver of deforestation is unhelpful to solving the complex issue of how to meet the world's rising demand for food oil and preserving the remaining intact forested areas. From article <https://ourworldindata.org/palm-oil>.

1. See Hannah Ritchie and Max Roser (2021) - "Forests and Deforestation." Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/forests-anddeforestation'

SHARE OF VEGETABLE OIL LAND USE AND PRODUCTION BY CROP



AREA OF LAND NEEDED TO MEET GLOBAL VEGETABLE OIL DEMAND, WORLD 2019



Increasing Productivity and Yield as an Industry

As an industry there are two key pathways to achieving a step wise increase in palm oil production without an increase in land base. They are to increase the average yield of smallholder farmers and to continue research and development into increasing industry yields and sustainable agronomy methods to allow high yields to be sustained from the same soils over the long term. As an Indonesian plantation company which has been farming the same soils for the last hundred year, maintaining and enhance productivity is crucial for Socfindo.

The Indonesian oil palm industry is unique in that approximately one-quarter of Indonesia's oil palm plantations are owned and managed by individual "smallholder" family farmers. The smallholder program is very important and has been extremely successful to improve rural livelihoods, with millions of Indonesian farmers benefiting from the smallholder scheme with the average net income seven times that of subsistence food production.¹ However, unfortunately yields for these smallholders on average lag far behind the industry average.² Therefore large gains can be made by improving the productivity and yield of smallholder farmers through extending access to and education in the current best existing agronomy practices and genetic stock. Whilst Socfindo is not directly supplied by smallholders, it recognises the importance of raising smallholder's productivity and yield and for more information on Socfindo's smallholder initiatives see our smallholder section. (Page 101)

In addition to raising smallholder productivity and yield, industry leaders like Socfindo need to continue to invest time and resources into improving long term productivity and yield beyond its current boundaries through continued innovation and performance.

Socfindo Applied Research – Improving Productivity & Yield

Socfindo is uniquely situated to assist with the issue of continuing to improve productivity and yield on the same land base and soils. Socfindo is one of the oldest dedicated plantation companies and has been farming the same soils in some estates for over 100 years. The only way Socfindo can continue to productively farm these soils is through implementing the best long term agronomy and sustainable practices and by consistent and constant investment into research and development. Through these practices Socfindo been able to consistently deliver comparatively high industry yields on soils which have been farmed for generations.

Socfindo has a long and proud history of agronomic and plant research and development which continues to the current day with Socfindo Seed Production and Laboratories (SSPL). For more detail on SSPL and its industry leading research and development programme please see <https://www.socfindo.co.id/about-us/research>.

At any one time Socfindo has a number of initiatives focused on improving long term productivity and yield. Improving and maintaining productivity and yield is complex, especially for organizations like Socfindo which have been farming the same soils for over a hundred years, where maintaining long term, consistent high yields can be challenging. In practice, there are many factors which impact on and interact to determine productivity and yield.

A snapshot of some of Socfindo's the current on the ground research initiatives are set out below provide a flavour of this complexity.

1. <https://www.spott.org/palm-oil-resource-archive/impacts/economic/>.

2. If we need a reference, see <https://www.wri.org/blog/2018/03/smallholder-farmers-are-key-making-palm-oil-industry-sustainable>, and <http://www.snv.org/sector/agriculture/topic/palm-oil>.

Socfindo Seed Garden – Hybrid interspecific planting material

Genetic diversity, having access to a broad base of oil palm genetic material coming from different origins, is key to develop a successful breeding strategy, to continually produce more productive material and also to adapt to changing conditions such as those caused by climate change. A classical breeding, based both on individual and progeny selection has made significant contribution to improve on the genetic characters related to productivity and quality. Socfindo's palm gardens which are a reservoir of genetic stock and diversity are a vital part of its research and development program.

Currently, Socfindo has a new hybrid germplasm planted in Aek Loba in its collection. The hybrid is an interspecific cross between *Elaeis oleifera* x *Elaeis guineensis* and comes from Ecuador, resulting from the collaboration project between breeders in Colombia and the Indonesian Germplasm Consortium.

MATERIAL

- O.Taisha x Avros
- O.Taisha x La Mé
- O.Ishpingo x Avros
- O.Ishpingo x La Mé
- O.Bobonaza x La Mé
- O.Coari x La Mé
- (O.Coari x O.Taisha) x La Mé
- (O.Taisha x O.Sinú) x Avros
- (O.Taisha x O.Sinu) x La Mé
- O.Serra x La Mé
- O.Serra x Angola

From this collection, Socfindo selects the hybrid material that shows both high productivity and good oil quality. The hybrids of *E. Oleifera* x *E. Guineensis* would be a possible option when looking for material with a higher olein content and low acidity. Some of the advantages foreseen with this material would be the ability to leverage on the higher Oleine content and therefore be more competitive in markets where the oleine derivative is sold at a premium compared to the stearine derivative. The two derivatives are the main two fractions obtained from CPO refining, they both come at a premium related to the fundamentals and needs of its specific market.



📷 The distinctive Oleifera Fresh Fruit Bunch at a Collection Point.

Maximizing Pollination – Breeding of *Elaeidobius kamerunicus*

High-yielding oil palm planting materials require additional pollination to maximize their potential, especially when the palms are in the young mature phase. During this period, the number of male flowers that are present is not proportional to the number of female flowers that need to be pollinated and as a result the fruit set is lower than ideal.

Several potential solutions were tested in Socfindo plantations, including assisted pollination (Asspol). This method is very effective and not especially cost effective, due to the significant labor and adequate pollen sources required. Recently a promising method called “hatch and carry” was developed, which resulted in a significant increase in fruit set. However, this method requires a large number of *Elaeidobius kamerunicus* (EK) weevils to achieve optimal results. The EK is sprinkled with pollen from the male flowers. He then visits the female flowers and pollinated them with the pollen he carries on its back.

Socfindo Research Department (SSPL) in conjunction with Socfindo’s agriculture department developed a rearing technique that is systematic and is designed to maximize the number of EK weevils produced.

The hatching facility is designed in a central place in the estates or smaller units (division), depending on the area of application and the needs of the EK to be released. Centralized hatching maximizes the use of manpower and resources starting from the collection of posts anthesis male flowers to the hatching process, collection of pollen and distribution of the weevils to be released. The administration and technical control are also greatly facilitated by this process.

Even though the centralized hatching of EK can produce a large amount of EK per post anthesis flower, we anticipate that the future technique will consist of rearing the EK in artificial facilities without depending on the limited availability of male flowers. The EK depends on the male flowers for its survival (food, habitat and egg laying) and the oil palm needs the EK to be pollinated properly. If we can multiply the EK without the need of the flowers (eg. by means of an artificial male flower), then we could release the EK already sprinkled with pollen without then we don’t need to collect natural male flowers from the field – this is more efficient and means more male flowers will remain in the field naturally.

📷 Centralized *Elaeidobius* hatching facility.



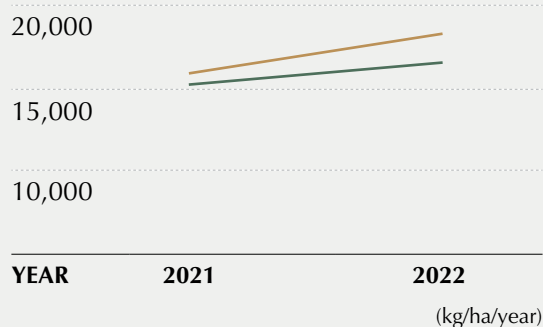
Increasing Pollination – Planting of Super Male Palm

Breeding oil palms to produce high yielding palms face problematic consequences due to the monoecious (single sex) characteristics of oil palm. High production will be achieved in palms with a large number of bunches (female flowers) and the natural consequence is to reduce male flowers. In young palms, the number of male flowers that are present is not proportional to the number of female flowers that need to be pollinated and as a result the fruit set is lower than ideal (bad fruit set). The lack of male flowers means that there is a lack of pollen when a female bunch is well pollinated, it means that all the little flowers have been fertilized and will become fruitlets, this in turn will contribute to a high ratio of oil per bunch. Bad fruit set in contrast means the fruit is not developed well, so there is no fruit – no oil. Fruit set will affect the quality of FFB (fresh fruit bunch from which oil palm is extracted from). Good fruit set equals good FFB. Fruit set also impacts on oil production (OER/oil extraction rate), with low/bad fruit set causing low oil production. Fruit set problems at a young age can cause a decrease in production of about 30% of the production potential.

Socfindo together with its scientific partners (PalmElit & CIRAD) has carried out research on supermale oil palms. These oil palms, that specifically produce male flowers are destined to be planted within Socfindo blocks, together with high-yielding palms. Male flowers on oil palm plants are needed as a source of pollen for the *Eladobius kamerunicus* to produce fresh fruit bunches that bear a full and well pollinated fruitset. In addition, an increase in male flowers can also serve as a breeding and feeding site for the *Elaeidobius kamerunicus* weevils which can then be translated into a population boost.

Production of the Socfindo blocks planted in combination with supermale palms was significantly higher than blocks without using super male and therefore seems to be a potential future avenue for our research focus.

EFFECT OF SUPER MALE ON YIELD



- Block 55 Tanah Gambus, with Super Male
- Block 54 Tanah Gambus, without Super Male



📷 Super male palm showing an abundance of male flowers at Tanah Gambus estate.

📷 Preparing sample extracts in our tissue culture laboratory.



Research and Development

Socfindo – A Culture of Agronomical Research

Research and development is a core pillar in Socfindo's ongoing success. Since its inception in the early 1900's Socfindo has continually invested significant resources into agronomic research and development with the R&D Division always playing a key role in maintaining and improving Socfindo's competitiveness in particular to product superiority and quality.

Socfindo's long history of applied agronomic research, development and innovation has created an internal culture of excellence around practical documented experimental research into agronomy. This together

with an ability to continually implement companywide new and improved practices on the basis of these experiments is at the heart of Socfindo's continued long term success. Socfindo undertakes research both internally and also has a history of cooperating with renowned third party scientific researchers since its first formal agreement in 1974 with IRHO (Institute de Recherches pour les Huiles et Oleagineux), a French institute which provided scientific support and supervision for applied agronomical research. Today, Socfindo still collaborates with CIRAD with whom it has an agreement to conduct field research.



📷 Leaf sample analysis.



📷 Oil palms plantlets created from tissue culture during rooting phase.

R&D and Innovation Today

Today Socfindo Seed Production and Laboratories (SSPL) leads the group's research and development and is the driving force behind continuously delivering superior product and quality as well as increasing the sustainability of its oil palm plantation business.

SSPL's focuses on 4 pillars, consist of:

- Research program in plant breeding and genetics
- Continued development of a world class supporting laboratory and analytical analysis to provide experimental testing and analysis
- Soil fertility maintenance (agronomy) and
- Crop pest & disease control measures.

Socfindo has a detailed program under each of these four pillars. For more details please see <https://www.socfindo.co.id/about-us/research>. Set out below are some initiatives the SSPL team is working on.

Low Lipase Planting Material

THE IMPORTANCE OF LOW FFA CONTENT IN PALM OIL

A low lipase oil palm material is characterised by a low free fatty acid (FFA) content, which is a sought-after quality when dealing with crude palm oil. The demand for high quality CPO (Crude Palm Oil) is increasing¹ together with the health awareness of the world community, therefore high quality CPO fetches a higher premium compared to standard quality of CPO.

The quality of palm oil is strongly influenced by the level of maturity of the fruit and free fatty acids (FFA) content under the lipase activity control. High levels of FFA tend to develop within the fruitlet, in a process called "high lipase activity", when these are getting passed their maturity period. The high lipase activity necessitates post-harvest inactivation by heat treatment of fruit bunches (sterilization). Even before heat treatment the mesocarp lipase activity causes consequential oil losses which usually happens with an oil palm mill or plantation experience high harvesting

1. Rosillo-Calle F, Pelkmans L, Walter A (2009) A global overview of vegetable oils, with reference to biodiesel. IEA Task 40. Report.

rounds or delays in FFB transportation or processing, especially when there is a shortage of harvesters or when smallholder plantations are situated far from mills.

The FFA content of crude palm oil from efficient processing facilities is usually 3 to 4%. Greater than 5% FFA is considered unfit for human consumption because it is correlated with diseases such as heart disease and type 2 diabetes². It is therefore important to have solutions available to planters to prevent low FFA.

SOCFINDO LOW LIPASE MATERIAL – A HEALTHIER PALM OIL

Research as per Morcillo, et al 2013 shows that a specific gene sequence is responsible for the low lipase character. Taking it further, Socfindo partners, CIRAD/ PalmElit, identified that oil acidification in some of Socfindo oil palm families was lower than the standard values.

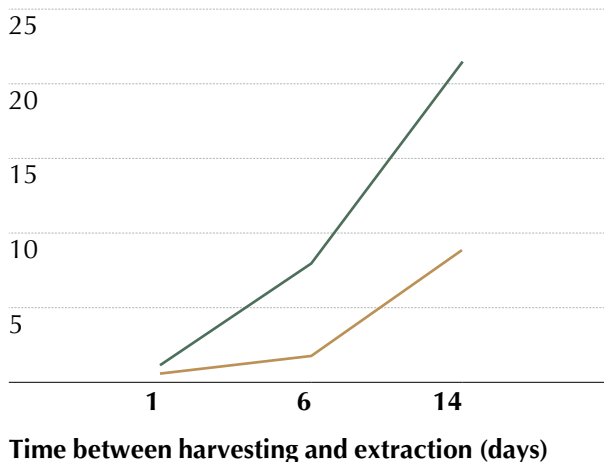
Preliminary observations began in 2019 which showed differences in the FFA content of some of Socfindo’s oil palm planting material. This was confirmed by molecular observations which showed that some Socfindo planting materials were identified as having low lipase genes. Currently, Socfindo is focusing on screening its planting materials through molecular and chemical analysis, to identify the families that have the low lipase gene.

Socfindo’s goal is to be able to produce planting material for the market that has a significantly lower lipase content. This could have a significant impact on the health of palm oil and deliver a better product to consumers. We anticipate good market demand for low lipase planting materials in the future, allowing palm oil mills to produce CPO with high quality despite experiencing late fruit arrival in their mills. In addition, a lower lipase material could allow for longer harvest rounds without having a material impact on the oil quality and FFA content.

2. F. Morcillo, D. Cros, N. Billotte, G.-F. Ngando-Ebongue, H. Domonh do, M. Pizot, T. Cu llar, S. Esp out, R. Dhouib, F. Bourgis, S. Claverol, T. J. Tranbarger, B. Nouy & V. Arondel. 2013. Improving palm oil quality through identification and mapping of the lipase gene causing oil deterioration. Nature Communications 4, Article number: 2160

Oil acidity in Socfindo planting material:

OIL ACIDITY (% FFA)



- Low lipase planting material
- Normal planting material

Special Focus on Socfindo’s Seed Programme

GANODERMA TOLERANT SEEDS

One significant area of research Socfindo is leading the industry in the fight against Ganoderma disease. Ganoderma disease is a lethal and endemic disease in Asia, Africa and South America and can cause up to 80% mortality (palm death) in the plantation, with an even higher risk in successive replantings. Ganoderma disease represents a significant threat to oil palm, with certain areas of Indonesia and Malaysia particularly at risk.

Socfindo has led the industry in research to combat this significant threat. In 2000, in collaboration with CIRAD-CP, Socfindo initiated a specific long-term breeding program to control this disease. This research led to the development of plant material tolerant to Ganoderma called DXP Socfindo MTGano which was released in 2013. Socfindo was the first oil palm seed

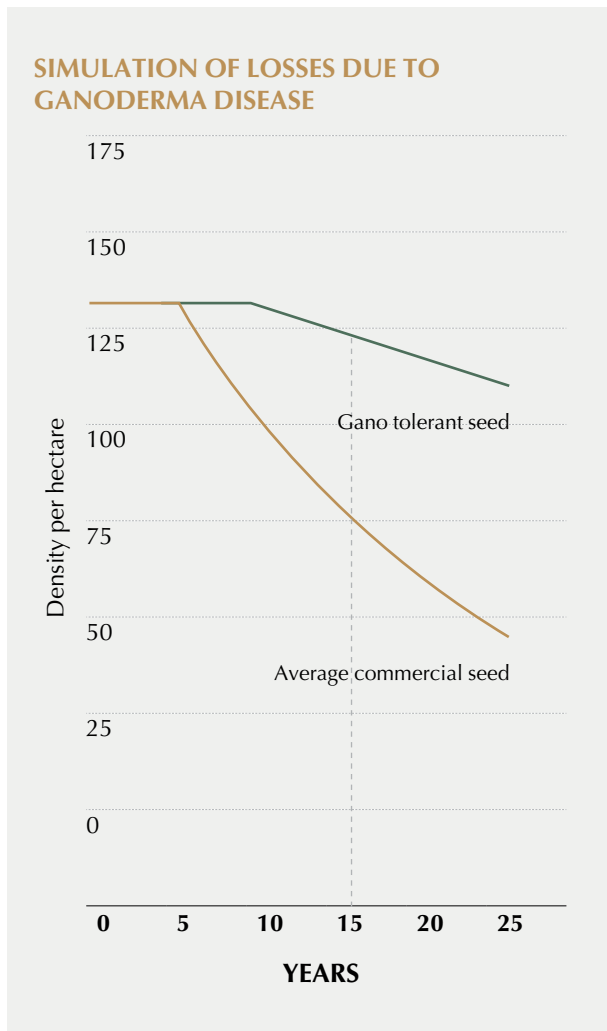
producer to develop and release a seed variety tolerant to Ganoderma disease.

By using Socfindo’s Ganoderma tolerant material, the impact of Ganoderma on the productivity and yield of the plantation is significantly reduced. Socfindo currently leads the supply of Ganoderma tolerant seeds for the Indonesian oil palm industry having distributed 18.5 million MTG since its release 10 years ago.

Graph showing impact of Ganoderma tolerant genetic material on oil palm mortality:



📷 An SSPL employee pollinating a female bunch.



📷 Weighing bunches in our research blocks.

IMPROVEMENTS IN GENETIC MATERIAL

In addition to Ganoderma tolerance Socfindo’s genetic plant material has the following proven improved qualities

- **Slower Vertical Growth** (40-50 cm/year) than other seeds (which have 70-90 cm/year of vertical growth). Slower growth allows for a longer harvesting lifetime. Socfindo seeds have been verified for high-yielding output exceeding 25 years (compared to others that can only be harvested for 15 to 18 years). This means a single palm can productively yield for longer and pushes out the replanting window which is both a significant economic and sustainable benefit.

- **Climate Resilience:** Seeds producing high bunch number with maximum yield per year more adapted to marginal areas and climate conditions, in particular water deficit. This is particularly important as the impact of climate change is felt and weather conditions become more and more irregular and unpredictable even in areas which have historically delivered consistent prime climatic conditions.

For more details on Socfindo’s seed business, please see <https://www.socfindo.co.id/products>



📷 Sorting improved seed in our SSPL production facility.

SOCFINDO’S ANALYTIC AND LABORATORY SERVICES

Socfindo has its own analytical laboratory to support its internal Research and Development Program which relating to oil palm includes:

- Fertilizer analysis and recommendation
- Compost analysis
- Soil analysis
- Leaf analysis
- Rachis analysis
- Waste & water analysis

These analytical laboratory services give the hard data which help Socfindo’s agronomists to decide efficient fertilizer applications. Our laboratory also now provides services to third party such as companies, smallholders, researchers and students.

As a testimony to the accuracy of Socfindos’ laboratory analyses, our analysis results consistently score very high results in the Wageningen evaluating programs for Analytical Laboratories (WEPAL), a worldwide laboratory proficiency testing scheme, with an average score of acceptance of 100 % for soil samples (International Soil-Analytical Exchange Program). Our laboratory also has ISO17025 certification, which is the main standard used by testing and calibration laboratories worldwide. For more details on our Laboratory and Analytical services please see <https://www.socfindo.co.id/services>



📷 Waste Water Analysis.





View of Halimbe plantation and HCV area.

ENVIRONMENT



Conservation, Biodiversity & Peat

Deforestation, Conservation and Biodiversity

Tropical peatlands are a globally important sink for carbon being one of nature's most effective ways of taking carbon out of the atmosphere and stocking it underground, making it crucial to the fight against climate change. However, when drained for forestry or agriculture, they may dry out and spontaneously combust releasing 10 times more carbon than forest fires, in a process called peat oxidation. Tropical peatlands also play important roles regionally and locally in the water cycle and in climate and landscape stabilization. Preservation of peatland is of particular importance in Indonesia, home to over half the world's tropical peatland. In addition for this reason, conservation, biodiversity and preservation of peatland are material sustainability issues for Socfindo.

Socfindo's Commitment to Conservation and No Deforestation

Socfindo has a strict no new development on peat and no deforestation of High Conservation Value (HCV) and High Carbon Stock (HCS) forests policy, which is a cornerstone of its environmental commitments. These commitments are a core part of its RSPO commitment and certification and consistent with the Socfin

Group's responsible management policy. Socfindo's conservation and no deforestation policy commits it to

- No deforestation of high conservation value (HCV) areas and high carbon stock (HCS) forests. This includes:
 - 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.
- Any new land clearing or new planting (in existing plantations or new plantations) is preceded by an HCV-HCS assessment as required by the RSPO.
- Existing HCV areas and HCS forest are identified, clearly delineated, actively protected and monitored. The presence of HCV areas in our operations is made known to neighboring communities. Social HCV areas remain accessible to communities.
- No new development on peatland, regardless of depth.
- Adherence to the best practices guidelines laid down by the RSPO.

These are commitments that Socfindo takes seriously as it strives to be a responsible producer of sustainable palm oil.

Socfindo – Deforestation Free Products on Old Plantations

Two key factors distinguish Socfindo from many other plantation companies in its ability to ensure that its

products remain sourced from RSPO plantations that have not been recently converted from forest. Firstly, Socfindo only sources palm and rubber from its own estates – it does not source fruits from outside third party growers. This along with full RSPO traceability certification to the plantation level allows it to verify that each batch of CPO from existing RSPO certified “conversion-free” plantations. Secondly, in contrast to many plantation companies, Socfindo’s plantations are all old established plantations, with the earliest current plantations developed in the 1920’s. Socfindo does not have any new “greenfield” plantations nor does it have a land bank of unconverted, unplanted forest. Socfindo’s “planting” activities are currently replanting of existing palm plantation (which takes place every 28 years or so) or “brown field conversion” of another crop such as rubber into palm. Further the majority of Socfindo’s operations are based proximate to more developed areas of North Sumatra or Aceh where they border mostly other agricultural land and not significant conservation areas. For this reason, whilst conservation and biodiversity are material sustainability issues for Socfindo given their importance, Socfindo’s own direct impact from its operations on unconverted natural forest is not currently significant. Socfindo manages biodiversity and conservation & ensures its NDP commitments through its RSPO commitments and certification and through full certified IP traceability to the plantation level which allows it to verify the specific plantation location each batch of CPO is sourced from.

Contributing to Biodiversity and Conservation – Socfindo Conservation Garden

As Socfindo does not have any unconverted landbank and its plantations are proximate to more developed areas rather than significant conservation areas, Socfindo’s approach to contributing to biodiversity and conservation has been to leverage its strengths in agronomy and to take a community focused approach within its own communities through the creation of the Socfindo Conservation Medicinal garden / Toga. The Socfindo Conservation garden’s purpose is to contribute to the preservation of biological and cultural

diversity of Indonesia by collecting and planting medicinal plants and recording their traditional uses and recipes associated with its use. The Socfindo Conservation garden today is an outstanding physical garden with a collection of almost 1,500 plants, paired with an online catalogue and database as well as a hive of ongoing activities and courses aimed at a variety of subjects related to health, education, conservation, cultural heritage and community empowerment. The Socfindo Conservation garden serves as an important community resource in its own right, as well as a model and inspiration for other areas within Indonesia which may be interested in setting up similar projects. More information about the Socfindo Conservation garden and the online database and activities can be found here <https://www.socfindoconservation.co.id/news>.

Snapshot of Socfindo’s Current HCV Areas

HCV	OIL PALM	
	2020	2022
Surface of HCV area (ha)	655	632

HCV	RUBBER
	2020
Surface of HCV area (ha)	155

AFFORESTATION	OIL PALM
	2022
Number of trees planted until now (2022)	39,041

During the reporting period there was a small decrease in the Palm plantation HCV area of 24 ha due to compulsory land acquisition by the government for public works and to exclude some man-made canals and drains which previously had been mistakenly included. In relation to rubber, in line with our commitments to identify, protect and manage HCV areas in our landbank and in line with the requirements of the rubber GPSNR and PEFC certification schemes, Socfindo carried out a HCV assessment of its rubber estates in September 2021 by identifying and mapping HCV areas based on the current status and presence of key HCV areas. The identified HCV area in the rubber plantation based on the results of this HCV assessment was 155 ha which will be managed and monitored based on the HCV management procedure.

Peat

SOCFINDO'S PEATLAND PROTECTION COMMITMENT

Socfindo recognises the global environmental importance of protecting and carefully managing peatland resources. As part of its RSPO commitment and consistent with the Socfin Group's Responsible Management Policy (RMP) as part of its peat protection policy, Socfindo commits to:

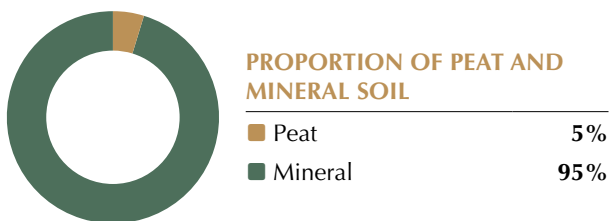
- No new development on peat, regardless of depth;
- For existing plantations on peat, they are to be managed to meet or exceed the RSPO "Best management practices for existing peat plantations."

SOCFINDO'S PEATLAND RESOURCES

Unlike many plantations, Socfindo does not have significant areas of peatland. Approximately 5% of Socfindo's oil palm is planted on peatland. In addition, Socfindo rubber estates do not have peat soils, as historically, rubber was either planted on well drained soils or on hilly areas and as a result none of Socfindo's rubber estates are developed on peatland.

PEAT (OIL PALM)

	2020	2022
Surface of peat area (ha)	1,905	1,905



MANAGEMENT OF PEATLAND RESOURCES

Socfindo is committed to careful ongoing management of the small amount of its plantations that do exist on peatland soil. Socfindo manages its approach to existing plantation on peatland soil by strict adherence

to its peat protection policy and the RSPO best management practices for existing peat plantations. These include having in place a drainability assessment duly validated by the RSPO together with a peatland management plan which covers water and ground cover management as well as ongoing monitoring of both peatland water levels and subsidence. Socfindo was the first company in Indonesia to have its drainability assessment report validated by the RSPO. Water levels are actively managed by maintaining it to an average of 50-70 cm from the surface in the drains thanks to water gates. The monitoring of water levels is done both inside the blocks with piezometer and on the periphery of the blocks in the drains.

Fire

Although fire is a large issue for the industry as evidenced by the dramatic hazes which can be caused by widespread forest fires in Indonesia, Socfindo is fortunate that fire is a minor issue. This is because Socfindo operates in plantations which were developed many generations ago, in locations that are by now, mostly developed and less at risk of being subject to forest or peat fires.

Even so, Socfindo remains vigilant to the threat of fire, maintaining fire watch towers and teams of well-trained personnel across its plantations even though it is very seldom that fire brigades are needed to be deployed to put out fire in the plantation. Socfindo also maintains ongoing education of local communities to ensure local people living in and around the plantations do not use fire for clearing or disposal activities.

Finally, since 30 December 2010, Socfindo has adopted a zero burning policy in developing new Plantations or replanting of aged plantations. Socfindo relies on mechanical means to chip the old stands and the biomass is then left to decompose, providing nutrients to nurture the soil. Even though mechanical means of land clearing may be more expensive it is environmentally sustainable.

IPM & Pesticides

Pests and Disease is an issue in tropical agriculture where crop losses due to pest and disease can be significant. As dedicated tropical plantation company Integrated Pest Management (IPM) which includes pesticide use is a material matter to Socfindo and management of pests and diseases through IPM is one of the core pillars of sustainable agronomy practiced by Socfindo. IPM takes a holistic approach to the management of pests, diseases, weeds and invasive species through the use of a systematic pest management plan, which includes where possible the use of biological and natural agents and only as a last step targeted use of pesticides. Appropriate integrated pest management techniques together with safe use and minimizing of pesticides are key criteria under the new RSPO Principles and Criteria 2018. In addition when their use is necessary, ensuring the health and safety of employees through training and use of PPE is always a core concern for Socfindo.

Socfindo's Integrated Pest Management (IPM) Strategy

Where possible and practicable, Socfindo reduces the use of chemical pesticides in its agricultural operations. It does this through an integrated pest management strategy that focuses on prevention to stop the conditions arising that create pest and disease and through natural agents where possible to reduce and stop infestations before they become a severe issue and where targeted use of chemical pesticides become necessary. Like nature, IPM is complex and ever evolving and pest and disease and their management is affected by a wide variety of on the ground factors. The first arm of defense in Socfindo's IPM plan is prevention through the use of disease-resistant palm varieties (DxP Socfindo MT Gano) and strict plantation protocols which avoid where possible the conditions which allow pest and disease to establish. Application of empty bunches and compost to the field to increase soil health, sowing cover crops, planting of "beneficial" plants, which provide habitat for leaf eating insects predators and support the local ecology and the release of natural predators are some of the measures utilised to fight pests that may cause damage to palm health and yield.

Below set out is a snapshot of some of the current key biological measures that Socfindo are using in its IPM strategy.



One of our assistants releasing a *Tito alba* owl as part of our IPM practices.







One of our assistants releasing Sycanus insects on Crotalaria flower banks.

BENEFICIAL PLANTS


Beneficial plants are still very much part of our strategy, as a sustainable palm oil plantation company. “beneficial” plants provide habitat for leaf-eating insect predators and support the local ecology by serving as a pest trap and promoting ecosystem stability so that pest populations can be suppressed and kept in balance. To this end, useful crops are grown every year, especially in the plantations that need them the most. In general, leaf pests are rare because they are controlled by natural predators. However, we did observe leaf pest outbreaks in some plantations with more extreme weather or, in some cases, during actual seasonal changes.

In 2021 Socfindo added new species in the development of beneficial plants. *Crotalaria sp.* is one of the plants that is very beneficial for the surrounding environment. This plant, which is better known as orok-orok (local name), is a flower species from the Fabaceae family. The main benefit of *Crotalaria* is that it becomes a host for predatory insects, a type of predator that helps prey on caterpillar pests. The predatory insects are sedentary and obtain food sources from within *Crotalaria*. This plant is easily propagated by cuttings and seeds. *Cassia*, *Antigonon* and *Turnera* are also other beneficial plants that attract predatory insects and that are propagated in Socfindo’s estates.

BENEFICIAL PLANTS

	2020	2021	2022
 <i>Cassia cobanensis</i>	45,363	143,141	145,890
 <i>Turnera sp.</i>	7,080	33,260	30,064
 <i>Antigonon sp.</i>	10,493	22,592	21,830
 <i>Crotalaria sp.</i>	-	1,375	6,399
TOTAL	62,936	200,368	204,183



 Sycanus feeding on a caterpillar larva.

BREEDING PREDATORY INSECTS - SYCANUS SPECIES

Sycanus sp. is a predatory insect that can be found in various habitats such as plantations, horticultural crops, food crops and forestry. This predator is polyphagous because it has a wide range of prey such as Lepidoptera, Hemiptera, Diptera and Coleoptera.


SYCANUS SP.

	2020	2021	2022
Sycanus bred	11,243	20,859	24,017
Sycanus released	11,027	20,859	24,017

Sycanus sp. has advantages such as being easy to develop, having a relatively long-life cycle and acting as a predator in all stages of development from immature to adult. In oil palm plantations, Sycanus is a natural enemy for leaf-eating caterpillars and plays an important role in maintaining leaf-eating caterpillar populations. Socfindo has specially bred Sycanus to be placed on plants that will become host plants. With all the benefits it has, Sycanus is able to improve the ecological balance in plantation areas. The success of pest predation by *Sycanus sp.* evidenced by the decline in caterpillar pest populations and the decrease in the use of chemical insecticides in plantations endemic to leaf-eating caterpillar pests. *Sycanus sp.* released on-site as we work to reduce the incidence of leaf-eating pests on certain plantations.

In addition, *Oecophylla sp.* are weaver ants that colonize the canopy of oil palm. They are naturally voracious and efficient control agents, although Socfindo is still perfecting its ability to use these ants as an IPM method.



 A Sycanus insect foraging on a Turnera flower.

NATURAL PREDATORS - BARN OWLS

In oil palm plantations, the hunting ability possessed by owls can be used to control rat pests in plantation areas. In Socfindo rat pest attacks usually occur on plantations that are prone to flooding. At this time, owls are not always enough to overcome rat plague and control must be carried out in combination with rodenticide chemicals that do not belong to groups 1A and 1B. Owls usually use existing nests or take over abandoned nests. To protect the owl population, Socfindo places an owl cage in every plantation area where there are indications of rat infestation to invite the owls to nest and breed.

BARN OWL

	2020	2021	2022
Total boxes (boxes)	44	78	98
Land to boxes ratio (ha/box)	880	501	401
Occupancy	17%	19%	39%



📷 A *Tito alba* owl flying out of its wooden house.

BIOLOGICAL CONTROL - BEAUVERIA BAUSSIANA FUNGUS

Socfindo started to develop biological control of caterpillars using the pathogenic fungus *Beauveria bassiana*. The project started at the Mata Pao plantation in 2020 by building a *Beauveria bassiana* mushroom laboratory as a breeding site. The *Beauveria bassiana* mushroom developed in the laboratory is a mushroom isolate taken directly from the field and has been proven effective in its pathogenesis in caterpillars that attack

BEAUVERIA USED IN MATA PAO AND TANAH GAMBUS

	2020	2021	2022
Beauveria	43,482	8,003	8,763

in 250 g/pack

oil palm leaves in Socfindo's Mata Pao plantation. The application of *Beauveria bassiana* fungus on oil palm blocks with a mild level of attack has been proven to be able to control caterpillar pests. At moderate and severe attack levels this method has not shown good results because this process is a slow process. It takes a lot of time and patience for biological agents to control pest populations.



📷 Beauveria colonising a leaf-eating caterpillar larvae.

SOCFINDO'S COMMITMENTS RELATING TO PESTICIDE USE

Despite best efforts, it is still necessary to use some pesticides in the plantation to effectively control pests and diseases. Some pests such as the bagworm do not currently have effective alternative measures or other chemicals other than acephates in Indonesia that are effective in controlling this pest. To ensure responsible and safe use and minimization of pesticides Socfindo has implemented its pesticide policy which includes:

- Development of an Integrated Pest Management (IPM) plan for all operations which is reviewed annually.
- No Paraquat Use: The active ingredient paraquat has been successfully phased out of all of palm operations

- Pesticides in WHO classes 1A and 1B and Stockholm or Rotterdam conventions are used only when no effective alternatives are available. Their use is authorised in writing by local senior management on a case by case basis, following a due diligence process.
- Ensuring Workers' Safety: All workers, permanent or not, involved with pesticides are trained and equipped adequately and their health is monitored.

Socfindo manages IPM and pesticides in their plantations through strict adherence to these policies and procedures which are consistent with the RSPO management principles and protocols. This involves having a systematic Integrated Pest Management plan, which is the first line of defense to effectively manage pests, diseases, weeds and invasive species. Only once these have been exhausted will pesticides be considered and their use will only be used in accordance with Socfindo's pesticide policy and the stringent guidelines under the new RSPO Principles and Criteria 2018.

Pesticide Use in Socfindo

OIL PALM

PESTICIDE USED

	2020	2021	2022
Herbicide	2.54	2.55	2.66
Fungicide	0.01	0.02	0.01
Rodenticide	0.02	0.06	0.04
Insecticide	0.70	1.20	0.82

kg + l commercial product / planted ha

TOXICITY

	2020	2021	2022
Toxicity	727	761	650.5

LD 50 / ha

The tables show Socfindo's pesticide use in 2022 vs 2021 and 2020. They demonstrate a reduction in pesticide toxicity in 2022 from 2022 due to lesser quantities of chemicals used such as acephates (insecticide against leaf eating caterpillars). Fungicide, rodenticide and insecticide have all decreased in 2022 vs 2021 which may be attributed to results from Socfindo's IPM program specifically higher predatory barn owl population and beneficial plant program. Herbicide however has increased due to larger replanting activities in 2022, together with more rainy days which requires more weed management.

RUBBER

PESTICIDE USED

	2020	2021	2022
Herbicide	1.00	1.30	1.55
Fungicide	0.33	0.93	0.39
Rodenticide	*	*	*
Insecticide	0.01	0.01	0.01

kg + l commercial product / planted ha

TOXICITY

	2020	2021	2022
Toxicity	713	1,004	835.3

LD 50 / ha

The tables show Socfindo's pesticide use for rubber in 2022 vs 2021. They demonstrate a reduction in pesticide toxicity from 2021 overall due to lesser quantities of chemicals such as hexaconazole (against the leaf fungus pestalotiopsis). Both fungicide and insecticide have decreased in 2022 vs 2021 as Socfindo has adapted its spaying procedure as we learn more about the pestalotiopsis leaf-disease. There have been some increases in herbicide in 2022 which are due to larger replanting activity and more rainy days which resulted in more weed suppression required.

Soil Health

PROTECTING SOIL HEALTH IN SOCFINDO

As a plantation company, along with its people, soil is Socfindo’s key asset. For generations Socfindo has focused on long term soil health and soil fertility maintenance (agronomy) which is one of Socfindo’s four pillars in its ongoing R&D program. Socfindo has a host of practices and procedures in place to ensure protection and enhancement of the soil in plantations which are continually being updated and improved through SSPL, its dedicated R&D department. In this report, we will focus on three of these:

- Recycling of biomass.
- Rice husk biochar initiative; and.
- Protection and preparation during replanting.

RECYCLING OF BIOMASS

One of the key concerns for soils like those in Socfindo’s plantations, which have been farmed for generations is the gradual loss of organic carbon in the soil. To protect soil and to improve soil organic carbon, Socfindo recycles 100% of its solid field and mill biomass residues back to the soil improving the soil’s characteristics by creating a closed resource loop and recycling organic carbon back into the soil which would otherwise be lost.

In the field the fronds are disposed in a U shape around the circle and slowly degrade, providing an ideal medium for root development. From the mill process, Empty Fruit Bunch Waste (EFB) are recycled by mulching and reapplying these to the plantations.

In Bangun Bandar, Socfindo operates a long running UNFCCC certified co-composting project which creates organic compost from the mill EFB and the liquid palm oil mill effluent (POME) which is then recycled back and applied in the field. For more details on this co-composting project, please see our GHG & Energy section of this report (Page 72).

All of the organic waste such as EFB, solids and compost are returned to the fields, however their

amount vary according to the yearly production levels. These organic fertilisers are likely to have a lasting positive effect which will contribute positively in recovering the loss of fertility due to sometimes four generations of intensive culture of crops on the same soil. By understanding better the soil issues which are specific to the tropics and to our regional environment, we seek to recover the organic carbon that is needed for the soil to be able to function. In addition, organic fertilisers will likely have an effect on the soil exchange capacity and on the microbial activity, these two parameters being key to a healthy and productive soil. In our rubber plantations, organic waste resulting from the process are very limited, as the product brought to the factories are directly processed as such, without generating bi-products.

Snapshot of Socfindo Biomass Recycling

BIOMASS

	2020	2021	2022
EFB to plantation (MT)	155,756	160,076	160,701
Solids to Plantation (MT)	21,685	22,031	17,013
Compost produced and recycled to the plantation (MT)	12,621	12,988	14,948
POME used in compost process (m ³)	13,531	13,563	13,687



Restoring soil fertility through the application of a rich compost in our Bangun Bandar estate.

RICE HUSK BIOCHAR INITIATIVE

A recent initiative Socfindo has been investigating to improve soil health and potentially also reduce carbon emissions is by utilizing waste agricultural biomass from surrounding agriculture operations for biochar creation and then applying this as a soil ameliorant in its plantations. Already 185MT total of biochar has been added to our experimental blocks in Mata Pao and Bangun Bandar.



 Rice husk biochar.

From Waste to Resource – Rice Husk Biochar

Biochar is a carbon rich solid material obtained from the thermochemical conversion of biomass in an oxygen-limited environment. When making biochar, the unstable decaying plant material is converted into a more stable form before storing it within the biochar itself. Once biochar, an organic material, is put back into the ground it can last for hundreds of years and therefore act as a carbon sink. Rice husk biochar is a carbon-rich solid material converted from organic waste (rice husk) by incomplete combustion or limited oxygen supply (pyrolysis). Incomplete combustion can be achieved with a burner or pyrolizer at a temperature of around 300°C.

Initially Socfindo has focused on utilizing waste rice husks from surrounding paddy fields which are widely available around Socfindo. Socfindo is characterised by being surrounded by paddy fields in most of its estate locations, therefore there is a potential opportunity to work with local communities to convert rice husks into biochar and then incorporating this biochar in the soil while doing our land preparations or on top of the soil in young palms. This program is beneficial to the

surrounding communities as the rice husk waste can provide added value locally with the local community either selling waste biomass or undertaking the rice biochar conversion process.

Agronomic Function

Socfindo is studying the long term effects of the incorporation of the biochar into our plantations blocks. We are hoping to improve the soil quality and fertility (physical, chemical and biological properties of soil), increase nutrient availability, retain nutrients and water and create a neutral environment, especially on soils that have become acidic through many years of chemical inputs such as fertilizers. If the soil characteristic can be improved, chances are that chemical fertilizer uptake will improve and in the long term we may be able to further reduce the use of chemical fertilizers.

SOIL PROTECTION AND PREPARATION DURING REPLANTING

Palms require to be replanted in a cycle approximately every 20-25 years. During this replanting phase the old palms need to be removed, the ground prepared and the new palms replanted. Measures to maintain soil health and protect the soil from erosion, compaction and run off are critical during this time. Along with adhering to the RSPO new planting procedures Socfindo has its own very strict and careful protocols to ensure the protection of its soils which include:

- **Soil Decompaction:** During the land preparation soils are decompacted by ripping and ploughed in order to ensure that our seedlings and cover crop find the best condition to grow.
- **Covercrops:** A lot of effort is given to the establishment of covercrop to ensure there is no exposed soil. Covercrop helps in covering the soil, limiting erosion and improving moisture retention. In addition a well thought out good covercrop will prevent the rise of invasive weeds such as woody growth and grasses which in turn reduces the need for maintenance and chemical operations and further protects the soil.
- **Terracing:** In cases of specific steep terrains, contour terraces are built to prevent soil erosion and improve access for the workforce and evacuation of the production.



GHG & Energy

Climate change is a material issue for Socfindo, both in terms of the impact of the effects of climate change on its business as a dedicated plantation company and its own impact through its Greenhouse Gas (GHG) emissions. Climate adaptation and resilience and managing and reducing its GHG emissions are key parts of Socfindo’s sustainability program in both its palm and rubber operations.

CLIMATE ADAPTATION & RESILIENCE

As a dedicated plantation company, Socfindo is particularly exposed to the effects of climate change. Socfindo’s rubber and palm plantations are not irrigated, relying on natural rain fall therefore rely heavily on stable weather patterns and adequate rainfall without which its productivity and even its existence are threatened. In addition severe weather events either drought or very wet patterns significantly impact crop growth, pest and disease and harvesting all crucial factors to productivity & yield. Recent years are seeing less stable climate with more extreme weather, being either drought or very wet weather patterns, resulting on material impacts on yields. Assessing climate risk and implementing proactive strategies to adapt to the effects of climate change and to climate resilient agriculture are a core part of Socfindo’s long term agronomy strategy. Socfindo is working towards implementing the Task Force on Climate related Financial Disclosure recommendations, which we will

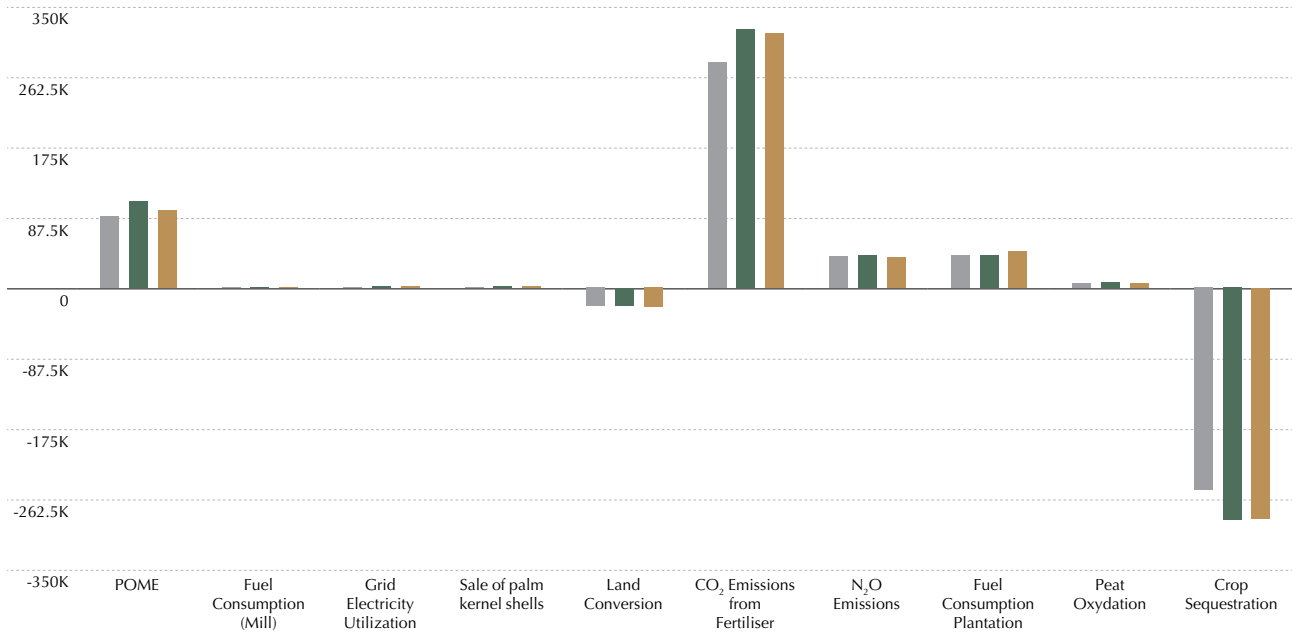
share in future reports. Socfindo’s long term sustainable agronomy practices which focus on soil health along with investment in to cutting edge R&D and its ongoing applied research trials through SSPL are strategies Socfindo implements to adapt to the effects of climate change and build resilience.

GHG MANAGEMENT

Socfindo is committed to a long term step-wise reduction of its GHG emissions overtime. Overall for Socfindo, its GHG emissions profile is linked to its landuse activities such as replanting, effluent from its palm oil mills (POME) and also closely tied to energy management which is why GHG emission and Energy are discussed together.

Socfindo Oil Palm GHG Sources and Sinks (t CO₂)

■ 2020 ■ 2021 ■ 2022



Socfindo GHG emissions

Palm

Socfindo’s management approach for its carbon emissions is firstly through meeting its obligations under the RSPO. This requires annual reporting of its greenhouse gas emissions (sources and sinks) using the RSPO Palm GHG calculator v4.

Looking at Socfindo’s GHG emission profile, it can be seen that the largest source of Socfindo’s GHG emissions in 2021 and 2022 come from replanting activities where Socfindo is currently rejuvenating its palm plantings at a rate of 3 to 4 percent a year and undertaken conversion of some of its old rubber estates to palm which are being carried out in 2021-2023. For a short time the emissions associated with the loss of carbon stock in the old wood will outweigh the sequestration from the newly planted trees. However, the chippings will gradually release its organic matter in the soil, providing a source of nutrient, while over the lifetime of the palms the carbon sequestration will in fact be net positive as the newly planted palms absorb more carbon each year.

The other significant GHG emission sources are from emissions associated from liquid Palm Oil Mill Effluent

(POME) from the mills and peat oxidation associated from the small amount of peatland Socfindo has, which shows just how significant peat is as a source of GHG emissions. In addition, N₂O emissions from Nitrogen based inorganic fertilizers are a material source of emissions and particularly in 2021 and 2022 have risen due to the knock-on effects of the Ukraine war on fertilizer prices and availability and Socfindo having to use more straight fertilizers (like urea) which have a direct impact on N₂O emissions.

GHG EMISSION

	2020	2021	2022
Emission per tonne/finished product	1.52	1.71	1.59
oil palm (t CO ₂ /t CPO)			

Socfindo's GHG emissions per ton of CPO have decreased in 2022 over 2021 and are now close to the level of 2020 which has materially smaller amount of emissions from brown field land conversion (rubber to palm). Whilst these figures do not indicate an overall downward trend, Socfindo is confident that its GHG emissions will reduce in the coming years due to its POME reduction initiatives, the impact of replanting becoming less and other GHG reducing initiatives that Socfindo is currently investigating. Socfindo is working towards being able to set some time bound GHG emission reduction targets in its next report.

Finding a solution to palm oil mill effluent emissions (POME)

For Socfindo reduction of emissions from POME are a problematic area because the only real current market solutions involve adopting biogas technology which captures and converts the methane gas to electricity. Whilst this is a proven technology and works well for some organizations for Socfindo the technology is not a good fit. This is because Socfindo has comparatively very small mills, which means there is no economy of scale to justify the large capital cost for installation of a biogas plant. In addition Socfindo has no need for additional power (nor do the surrounding communities) and the Indonesian State Power provider (PLN) does not provide a guaranteed purchase agreement to purchase the power produced nor any preferential tariff. This makes the cost of biogas cost prohibitive especially given the recent unstable palm prices and uncertain economic environment.

Socfindo has also implemented co-composting as an alternative which has worked well at its Bangun Bandar mill, however this has not been a total solution either due to its inability to use all the POME produced.

Experimenting with POME flocculation

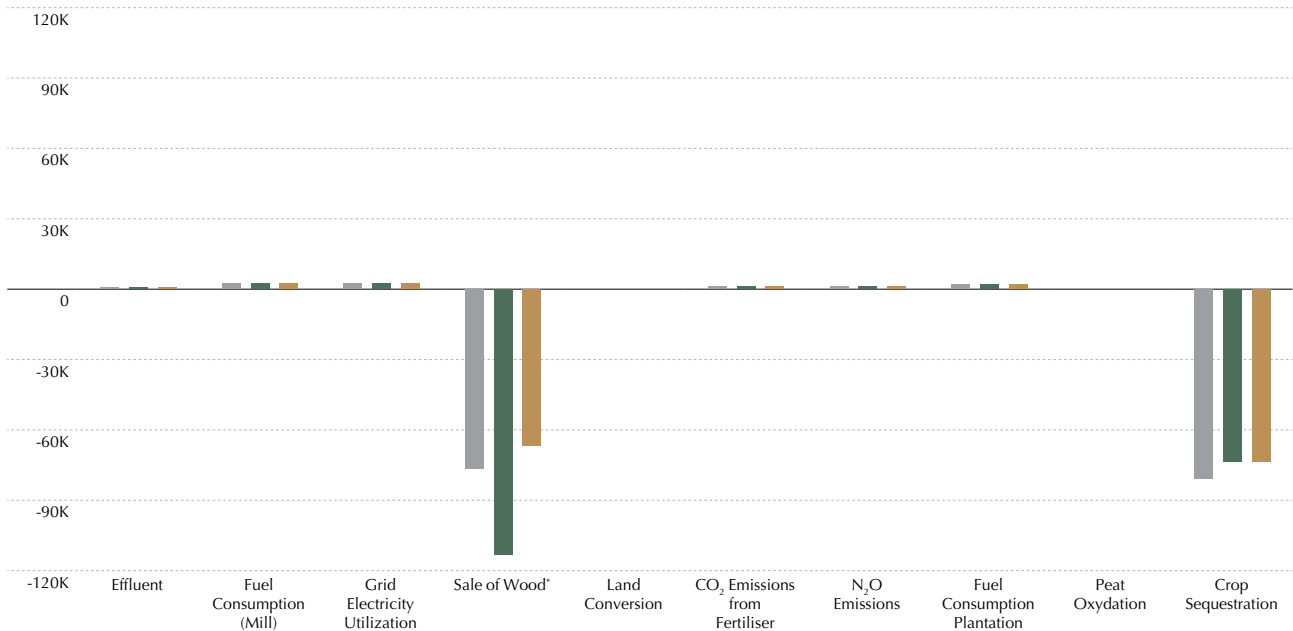
Socfindo is currently trialing POME flocculation as a potential solution for its POME emissions. This technology is based on a specifically engineered container system designed to do the separation of POME into solid waste and water. Using an electrical pump and dosage device, polymer is mixed into the POME at the same time as it is pumped into the dewatering container. The flocculated sludge is retained inside the dewatering container using special filters, while the water content is directed out of the container via the drain valves to be sent to the series of open ponds. The POME solid is usually the part responsible for most of the emissions as it releases methane and CO₂ through the anaerobic decomposition process. However, with this system, the solids are sent either to the field or to our composting system to create a rich organic compost in a process that is aerobic and therefore avoids the carbon emissions which would otherwise be generated.

Co-composting & Composting Program of Activities for Palm Oil Mills in Indonesia

Socfindo is an official UNFCCC Coordinating Entity and since 29 June 2012, Socfindo has had a Clean Development Mechanism (CDM) Program of Activities (PoA 6511) successfully registered under the UNFCCC which allows any co-composting project of palm oil waste (POME, EFB etc) in Indonesia to be registered under provided it meets the eligibility criteria set under the framework PoA. As part of this, Socfindo has also developed a state of the art aerated bunker co-composting Facility at Bangun Bandar which has been registered under this PoA since 2013. This facility composts liquid POME and EFB, thus avoiding a significant amount of emissions that would have otherwise occurred from methane under the traditional ponding system. Currently, this project was successfully verified under the UNFCCC in 2018 and has had 27,565 Certified Emission Reduction Units issued (CERs), representing an avoidance of 27,565 tons CO₂ of carbon. This was the first co-composting PoA in

Socfindo Rubber GHG Sources and Sinks (t CO₂)

■ 2020 ■ 2021 ■ 2022



* Assuming it is for furniture and wood flooring

Indonesia to successfully be issued CERs. Since our last verification in 2018, we have consistently managed our compost activity with the same standard, reducing an estimate of 4,000 Mt CO₂/annum, although this has not been verified due to the lack of buyers for earlier issued credits.

Unfortunately, due to the very low carbon prices and lack of demand, Socfindo has been unable to sell these credits and despite its best efforts has been unable to generate any carbon return for the project. While there is little demand and such low prices for these credits it remains a large financial barrier to being able to scale up and expand these projects given their large capital and ongoing operating costs.

Rubber

For rubber, unlike Palm there is no industry accepted methodology for calculating GHG emissions at this time. Socfindo is confident that with the introduction of the GPSNR certification standard for rubber, a robust standard methodology for the calculation of GHG emissions from rubber emerge and be widely accepted. Socfindo has undertaken and included an estimate¹ of its GHG emissions associated with its rubber operations based on the Palm GHG calculator

(v3) methodology. As industry specific or accepted methodologies become available Socfindo will adopt these and update its methodology accordingly. Despite this Socfindo is continually looking for methods to reduce its Rubber GHG footprint.

Due to the significant sink effect of rubber trees, Socfindo's rubber operations are overall net carbon positive and also because of the fact that the wood cut during replanting is not burned or left to decompose, but rather usually used to make furniture and flooring. In addition the emissions of rubber per ton of product produced have decreased in 2022 vs 2021 due to being able to utilise less fuel and grid electricity use. The largest sources of emissions for the rubber operations remain fuel and electricity use which unlike the palm operations are currently reliant on grid energy and diesel gensets from fuel rather than renewable energy.

GHG EMISSION

	2020	2021	2022
Emission per tonne/finished product	-15	-21	-19
	t CO ₂ /t dry rubber		

1. These values are meant as an estimate only and have not been verified by a third-party.

ENERGY

Breakdown of Energy Use in Socfindo

Oil Palm

Renewable Energy Use

The vast amount of energy for Socfindo's palm operations comes from renewable energy (90%) with Socfindo optimizing the use of its biomass boilers which consume their own biomass waste as fuel (Fibre and Palm Kernel Shell). In 2022 there has been a slight increase in the use of diesel genset due an aging boiler in one of the mills, which has resulted in an increase in the genset and grid electricity use while awaiting the new boiler to be commissioned. Correspondingly there has been a slight increase in the use of power from grid energy and diesel gensets.

BREAKDOWN OF ENERGY CONSUMPTION TYPE

	2020	2021	2022
Genset power	1%	1%	1%
PLN	7%	9%	9%
Renewable	92%	90%	90%
TOTAL	100%	100%	100%

Fossil Fuel Consumption

FOSSIL FUEL USAGE

	2020	2021	2022
TOTAL	2,393,613	2,470,452	2,693,749

in l

FOSSIL FUEL PER PRODUCT

	2020	2021	2022
Fossil fuel per product	3.02	3.16	3.47

l per t FFB

Unfortunately, diesel use for transportation has increased since 2020, leading to an increase in diesel use in 2022 over 2020. The reason for this is that over the last years, we have increased the proportion of replanting work done with our own equipment rather than contracting it out, leading to a stronger quality

control and cheaper operations. In addition, Socfindo has brought in additional mini tractors to mechanise both some of the spraying activities (in doing so we have also reduced the exposure of the workforce to chemicals) and more heavy equipment was used to remove sludge from effluent ponds. In addition to that, the biodiesel proportion in diesel fuel has now reached 30 percent, which does affect the firing power and efficiency of engines running on diesel. Fuel consumption of biodiesel is expected to be higher than standard diesel as the gross calorific value (energy content) of biodiesel is lower than standard diesel.

Rubber

In contrast to palm, Socfindo's rubber operations are reliant on both the grid and fossil fuel for its operations and rubber driers.

Fossil Fuel Consumption

BREAKDOWN OF ENERGY CONSUMPTION TYPE

	2020	2021	2022
Genset power	6%	7%	6%
PLN	94%	93%	94%
Renewable	0%	0%	0%
TOTAL	100%	100%	100%

FOSSIL FUEL USAGE

	2020	2021	2022
TOTAL	648,505	587,557	500,686

in l

FOSSIL FUEL PER PRODUCT

	2020	2021	2022
Fossil fuel per product	66.19	68.74	72.61

l per t dry rubber

Water

Water is a critical global issue of prime importance to Socfindo where adequate water is crucial for yields and continued operation of the business. Socfindo's palm and rubber crops are not irrigated, therefore are 100% reliant on natural rainfall for water and consequently exposed to changes in rainfall patterns as a result of climate change. This is a material impact on Socfindo's operations as changing weather patterns in recent years have resulted in years where rainfall has been less than adequate and this has severely impacted yields and financial performance across the whole North Sumatra and Aceh regions. Unpredictable unusual seasonal variations seem to be the new norm therefore, water conservation, efficient use of water and preserving water quality is materially important to Socfindo.

Water use in Socfindo

Socfindo does not irrigate its palm or rubber crops, which rely on rainwater for their water needs. The main source of Socfindo's water consumption is for industrial uses in its palm and rubber mills.

Water Conservation Initiatives

Water Storage Trenches



📍 Trenches in our oil palm blocks filled with rainwater to mitigate dry spells.

Socfindo's Mata Pao and Sei Liput plantations are located in areas which are experiencing drier weather than historically usual with an average rainfall of less than 1,800 mm per year. In order to be more resilient and adapt to these changing conditions, Socfindo uses water trenches that act as water reservoirs during the dry spells but also allow the excess water to overflow during the rainy seasons. This assists Socfindo to adapt to more extreme weather patterns and to be more climate resilient.

Water Capture in Rubber Plantations



📍 Capturing rainwater at a Latex Collection point.

Socfindo has initiated a water capture program, especially in its rubber plantations by capturing rainwater for operational activities, in the latex collection area. The water usage in the latex collection area is quite large, where 90% of activities use water for washing buckets and latex collection tanks. Socfindo's plantation management took the initiative to retrofit the latex collection facility collection with gutters and a rain water storage collection facility. With this facility, the use of borehole water can be reduced by up to 60% by incorporating rainwater in latex collection.

WATER USE PER PRODUCT

	2020	2021	2022
Oil Palm	1.04	1.03	0.99
Rubber	20.37	20.84	19.88

t water per t product (FFB or dry rubber)

TOTAL INDUSTRIAL WATER USE

	2020	2021	2022
Oil Palm	823,461	802,070	778,907
Rubber	199,572	178,084	137,106

m³

Socfindo has been able to achieve a material reduction in its water use across the board in both its palm water efficiency (water per ton of FFB) as well as its rubber water efficiency (water per ton of dry rubber). The total water consumed for industrial processes has also reduced. This reflects the success of its water conservation initiatives in its mill, in particular recycling water from water condensate for dilution purposes in the mill.

Water Discharge

All Socfindo's discharges are regulated and monitored by the government. Socfindo's treated POME effluent discharges are required by law to have a BOD lower than 100mg/l for oil palm and lower than 60mg/l for rubber as per Minister of environment regulation 5/2004. All Socfindo's discharges of treated POME effluent during the reporting period are below the legal requirement.

AVERAGE BOD LEVEL

	Way of Discharge	2020	2021	2022
Oil Palm	Into water body	77	82.6	77
Rubber	Into water body	43.6	41.5	37.1

mg/l

Waste

The production of solid waste and its responsible disposal is a material issue for Socfindo and for Indonesia where in many areas there does not exist municipal waste collection and disposal of waste by dumping or burning is a common disposal method particularly in rural areas. Even where municipal collections are in place, often infrastructure for upfront separation of classes of waste are lacking resulting in most wastes ending up in landfills. Finally single use plastic use is still common amongst most people, therefore awareness of the consequences of single plastic use needs to be raised to make people aware and to effect behavioral changes to avoid their use.

Reducing Single Plastic Use

To implement this no single plastic waste within Socfindo, Socfindo management has continued a series of efforts carried out by management including outreach of awareness and education to create the habit of no single plastic waste within Socfindo. In head office, most of the workers now bring water tumblers and food containers from home and guests who come to visit are no longer provided with bottled water and glasses and a water dispenser. In addition, in the mills, management has also provided locker rooms for workers for personal items, including tumblers and food containers. Provision of tumblers/glasses and water dispensers aims to encourage workers from buying bottled water outside. The effort to reduce single use plastic is a long term initiative, which aims to encourage and get buy in from Socfindo employees by providing the alternatives to single plastic use and to build habit change.

Solid waste in Socfindo

Organic Waste

All solid organic biomass residues from the plantation and from the process of extracting Crude Palm Oil from FFB are recycled to the plantation (eg. EFB) or used as biomass fuel to create energy in the mill (eg. Kernel shell and fibre). Socfindo will continue its policy of recycling and utilizing 100% of its solid organic biomass.

Hazardous Waste

Hazardous waste is separately disposed of from other non-organic solid waste and is carefully reused, recycled or disposed of according to law.

HAZARDOUS WASTE OIL PALM

	2020	2021	2022
Batteries	1,882	1,749	2,132
Medical waste	148	160	125
Used engine oil	8,700	12,857	12,951
Chemical containers	13,123	13,575	9,838
Used filters	1,936	2,103	2,422
Other	709	992	1,748

in kg

HAZARDOUS WASTE RUBBER

	2020	2021	2022
Batteries	285	296	320
Medical waste	11	17	10
Used engine oil	1,039	1,240	1,508
Chemical containers	55	17	388
Used filters	85	166	159
Other	6.00	64	86

in kg

Non Organic Solid Waste

All non-organic solid waste from Socfindo's operations that is not hazardous and which cannot be re-used or recycled are legally disposed of by landfilling. Despite its best efforts it has proved difficult to implement a system to accurately estimate the quantity of this waste. Socfindo is still working out a long term workable system for this.

No Disposal of Waste by Open Burning

Burning of solid waste is a common method of disposal in Indonesia, particularly in more rural areas where there is no municipal waste collection. This in turn is a significant source of local air pollution. Socfindo is working on this challenge first through its own strict policy of no disposal of solid waste by burning and second through development of a wider active socialization program across Socfindo's employees, their families and the community in order to avoid burning of domestic waste in landfills as much as possible

Socfindo Waste Reduction Initiative

The ecobrick program was designed to address plastic waste issue, especially from domestic household activities. This initiative started in several Socfindo plantations in mid-2020, namely: Mata Pao, Bangun Bandar and Lae Butar estates. The activity is coordinated by the plantation gender committee with the contribution from the workers spouses, where the activity begins with separating plastic waste, washing and drying it and finally putting it in plastic bottles.

This initiative still continues and during the reporting period, the following amount of plastic waste was used as ecobricks for 2021-2022:

RECYCLING PLASTIC

	2021	2022
Ecobrick Initiative	11 kg	112 kg

Paving Block Initiative

A youth organization in Bandar Pulau Village, which borders one of Socfindo's plantations, initiated the process of making paving blocks from household plastic waste. This organization, called the Garbage Bank: Asahan Youth Cares for Waste, started operating in November 2021. It began with an educational process for the villagers around Bandar Pulau to separate plastic and organic waste, collect it, then hand it over to the Garbage Bank team.

Socfindo considers that this activity needs to be supported because of its focus on waste management which is a global issue of environmental pollution. In addition, this activity has economic value from both the producer and waste management side. Socfindo contributes in providing waste transport units and paving block pressing materials.

The amount of plastic processed into paving blocks was 7,200 kg which was sourced from the households of several villages in Bandar Pulau and the number of paving blocks produced was approximately 750 pieces which have been sold to the Islamic Boarding School in Kisaran city. Until now, the garbage bank is still in the process of fulfilling order requests for 500 pieces of paving blocks from several users and the orders will continue to grow. Socfindo intends to be further involved in this program, including:

- a. Some of the plastic waste that was previously disposed at the local landfill was transferred to Garbage Bank: Asahan Youth Cares for Waste.
- b. Educate the villagers around Socfindo's plantations and villages outside the plantations about alternative uses of plastic waste which also have economic value.
- c. Adding supporting infrastructure that can speed up and simplify the processing of plastic waste into paving blocks.



Re-using plastic and moulding paving blocks.

7200 kg
Plastic Recycled

MATERIAL POLLUTANTS

In addition to greenhouse gas emissions there are other emissions / pollutants which if not managed carefully can harm or cause disturbance to the local environment and communities. For example dust, noise, odor, particulate matter (PM) if not carefully and thoughtfully managed can impact local communities wellbeing and the local environment. These in turn can become the source of social issues. Socfindo has always taken care to ensure compliance with the local environmental regulations and to reduce any adverse impact on the environment and local community. This approach is part of the basic foundation of being a responsible member of the community.

A new regulation by the Ministry of Environment concerning genset emission and ambient air standard was released in 2021 for implementation in 2022.

PARAMETER (AVERAGE SOCFINDO OIL PALM AND RUBBER)

		2022	Compliance Standard	Unit
Boiler	Nitrogen Oxides (NOx)	74.95	800	mg/Nm ³
	Sulfur Dioxide	5.83	600	mg/Nm ³
	Particles	69.34	300	mg/Nm ³
Drier	Nitrogen Oxides (NOx)	2.39	1,000	mg/Nm ³
	Sulfur Dioxide	1	800	mg/Nm ³
	Particles	27.2	350	mg/Nm ³
Genset	Nitrogen Oxide (NOx)	632	1,850	mg/Nm ³
	Particles	83.75	95	mg/Nm ³
Ambient Air	Dust (Total Suspended Particles)	59.67	230	µg/Nm ³
	NO ₂	55.4	200	µg/Nm ³
	Sulfur Dioxide	39.38	150	µg/Nm ³
	Noise	62.06	70	db
Genset	Amonia	0.22	2	ppm
	Hydrogen Sulfide	0.01	0.02	ppm

📷 A typical Socfindo village scene where kids and parents alike can enjoy a peaceful environment.



PEOPLE



Socfindo Family

At the heart of Socfindo’s long standing success are good people and their families and without their continued dedication and support, Socfindo could not continue to exist. Socfindo’s foundation is built on its people and their families, the “Socfindo family.” Looking after these employees, ensuring their hard work is rewarded and that Socfindo is a healthy, positive and engaging place to work, is Socfindo’s most important priority.

Solidarity During Covid-19

Socfindo is proud that during the Covid-19 pandemic of 2020-2021, despite facing significant interruption of economic activity and uncertainty due to lockdowns, physical distancing and restrictions in many activities, it managed to go through this challenging and uncertain period and still be able to provide stability and an economic foundation for its employees and their families.

An Intergenerational Workplace

Socfindo prides itself on being a great place to work at, in taking care of its employees and in hiring people locally when possible for the long-term. An interesting phenomenon in Socfindo is the large amount of intergenerational employees, where family members belonging to an older generation also work or used to work at Socfindo. Socfindo has a staggering 3,178 employees who are second generation employees (i.e. a family member from their parents’ generation worked at Socfindo), 591 employees who are third generation (i.e.

a family member from their grandparents generation worked at Socfindo) and 18 employees that are fourth generation employees (i.e. they had a family member from their great grandparents working at Socfindo). This is something that Socfindo is incredibly proud of and it indicates that parents are considering Socfindo as being a decent place for their children to work in.



📷 An intergenerational family at Socfindo.

NUMBER OF INTER-GENERATIONAL EMPLOYEES IN 2022

2nd Generation	3,178
3rd Generation	591
4th Generation	18



📷 One of our employees at a pressing station, in our palm oil mill.

Making Socfindo a Decent Place to Work at

Socfindo has always worked hard to make itself a decent place to work at for employees and their families, not just through its remuneration and benefits (which it also does) and also through the many additional actions that Socfindo does to enhance the "Socfindo Family." These programs and facilities are ever changing with people's needs but a snapshot of what is currently going on for employees and their families is set out below.

SUPPORT FOR EDUCATION

Procurement of Laptops for Early Childhood Education (PAUD)

Early childhood education is a form of education that focuses on laying the groundwork for physical growth and development, intelligence, socio-emotional, language and communication. In this program, we support a team of educators who are based in the kindergartens in our estate and divisions by providing them with laptops to forge an interest and increase interactivity when fostering the young children.

RELIGIOUS CELEBRATIONS

Faith continues to play a central role in the lives of most Indonesian families, with Muslim and Christian faiths both being well represented in the Socfindo Family and wider community. Every year Socfindo families gather from all estates for the religious celebrations of Maulid and Christmas. These events are the occasions of reflecting on the past year and looking forward to the new one while being thankful of working for the company in a peaceful, inclusive and tightly knit community.



📹 Health awareness activity with kids at a kindergarten.

HEALTH AWARENESS AND EDUCATION PROGRAMS

In addition to its normal medical and health program which is run by dedicated staff through each plantation clinic, each year a senior team from Socfindo's head office led by its doctor, senior human resources representatives as well as the spouses of Socfindo's senior management visit the plantations with a focus on health and welfare of the families of employees and the wider communities they belong to. This team will visit every village in the plantation and around the plantations, engaging with the families of employees and their villages. It provides a unique opportunity for direct connection between the spouses of employees, their families and communities to interact and discuss issues directly with the team with the focus on issues related to the health and wellbeing in the wider family and the communities they belong to. The program will also include targeted education on specific health prevention and wellness issues for schools and families.



📹 Practising embroidery during a workshop at the Cocoon House.

SUPPORT FOR YOUNG WOMEN AND STAY AT HOME MUMS

Procurement of sewing and embroidery machines

In 2022, the Rumah Kepompong added 2 embroidery machines following the success of the previous sewing machines. A free training was held for ten days, after which, the participants could practice the embroidery skills that had been taught at the Rumah Kepompong.

The funding for teachers in remote areas

Socfindo realises that quality education is very important in preparing future generations. In areas deemed too "remote" in some of our plantations where there are few facilities, Socfindo supports some of the teachers by providing funding for educators to be more independent and professional in carrying out their profession as a teacher. This funding is aimed to the teacher who work in eight schools located in North Labuhan Batu district.

PLAYING SPORTS AT SOCFINDO

Socfindo held an inter-division sport league which was held on the company's sport facility. Sports that are contested are football, volleyball and badminton.

The aim of this event was to foster a spirit of sportsmanship, establish togetherness and strengthen relations between employees. Furthermore, this event is also as a recreational event for employees and the local community alike who had a hobby of playing football which has been stopped due to the pandemic. 6 of 11 estates took part the sports competition in 2022.

All the players are very enthusiastic in taking part in the competition which unfortunately due to Covid-19 has been unable to come together and participate for a long time.

Not only do the employees and the local communities attend these events but they also come with their families and together support and watch the matches. As well as a sports event is also a social event and it is a great day out for all to come together and enjoy a day out.



📷 The players are ready to play for a football competition in Aek Pamienske estate.

Equality

Ensuring a Decent Place to Work

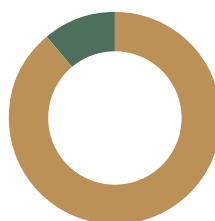
Socfindo is committed to building a workplace where every member feels safe, respected and valued, are treated equally and have an equal opportunity to advance and progress to reach their inherent potential regardless of their ethnicity, religion, gender, age, disability, marital status or sexual orientation. Equality has been identified by Socfindo and its stakeholders as a material parameter demonstrating its continuing importance.

Snapshot of Socfindo Workforce

Below is a summary of our employees as at December 2022 which includes a breakdown by gender, origin, age and position.

BREAKDOWN EMPLOYEE BY GENDER IN 2022

Female	962
Male	7,862
TOTAL	8,824



GENDER PROPORTION

Male	89%
Female	11%

DETAILED BREAKDOWN OF GENDER

Per Governance Bodies	Male	Female	18-29	30-50	>50	Total
Head of department and groups	15	1		4	12	16
Rest of organisation	7,847	961	919	6,495	1,394	8,808
TOTAL	7,862	962	919	6,499	1,406	8,824

Instances of Discrimination

There have been no incidents of discrimination and corrective actions taken for 2021-2022.

Equal Opportunity

Socfindo have and will continue to recruit, employ and promote employees solely based on merit. Socfindo is committed to diversity which is formally expressed in its Anti-discrimination and Equal Opportunity Policy (see <https://www.socfindo.co.id/documents/eng/Policy-Non-Discrimination-Equal-Opportunity.pdf>). In addition within Socfindo, the pay ratios for men and women are the same – there is no differentiation in remuneration based on gender.

Gender Equality

Socfindo is committed to ensure that Socfindo's female employees are given an equal opportunity to succeed, develop and progress so they reach their inherent potential. Given the nature of the work involved, the palm and rubber industry has been traditionally a male dominated industry and Socfindo today still has a male dominated workforce. Whilst we promote the employment of women at Socfindo, we also recognise that some work on our plantations remains male dominated due to the heavy physical nature of the tasks such as manual harvesting of fresh fruit bunches, crop collection and some physical jobs in the mills. Socfindo has recruited female workers for other roles such as finance and accounting, marketing, sustainability and lab analyst. In order to assist woman in the workforce, Socfindo has implemented dedicated places for breast feeding in each of its plantations and head office. Socfindo also provides day care and kindergarten facilities for more than 800 young children of employees and of the local communities who are under school age to ensure young children have a safe place to go whilst their parents are working and to allow female employees with young children the opportunity to continue to work if they wish. Socfindo


has also implemented a program for employees who are new mothers. The program provides targeted education relevant for new mothers such as child and family health, parenting as well as assistance in the plantation through the provision of breast-feeding places, day care and kindergarten.

Gender Committees

Socfindo has established gender committees which as one of its roles, is tasked with assessing the needs of its female employees. Socfindo has gender committees in each plantation, consisting of 15 to 30 members. All the members are chosen by our own employees on the estates. To support the committees in implementing gender awareness in the field, Socfindo provides procedures of social grievance management and organises implementation socialisation campaigns on policies related with gender equality.

The gender committee will hold meetings on various topics for members or employees for example education on the procedure to file a complaint, socialisation on their rights and obligations, female health issues, investigation into new mother's needs or update of new policies. In addition to these activities, gender committees are also involved in investigating, adjudicating and resolving any instances of harassment. For more details on this aspect, please see harassment part of Labour Rights section.



 The female workers enjoying a break in the field.

Remuneration & Benefits

The foundation of Socfindo’s success is built upon the hard work and efforts of its employees and their families and Socfindo’s number one priority is to reward this commitment and to create a decent, fair and fun place to work. At the heart of creating a decent and fair place to work is ensuring employees are compensated fairly for their contribution so that they, their families and the communities they belong to can prosper together as Socfindo moves forward. A cornerstone of Socfindo’s long term success is to competitively reward hard work and performance so that it can retain the talent upon which the success of the organisation is built on. Below is a snapshot of the remuneration and benefits Socfindo provides its employees.

Remuneration

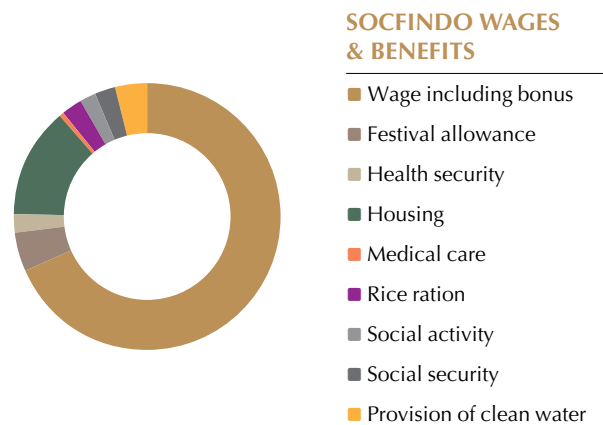
Socfindo does and always has paid a decent living wage either meeting or exceeding national wage standards. Employees at Socfindo receive on top of their salary, a number of in-kind benefits. This approach is in line with the 2019 RSPO Guidance for Implementing a Decent Living Wage¹. All salaries and employment conditions for staff and workers, including temporary workers, meet legal minimum wage standards in their respective regions. All men and women are paid equally, irrespective of gender, across all employee categories.

Beside provides a comparison of Socfindo’s remuneration vs the national monthly minimum and provides a breakdown of additional in-kind benefits. Even during the difficult economic conditions due to Covid-19, Socfindo did not reduce any of these benefits remaining committed to its employees.

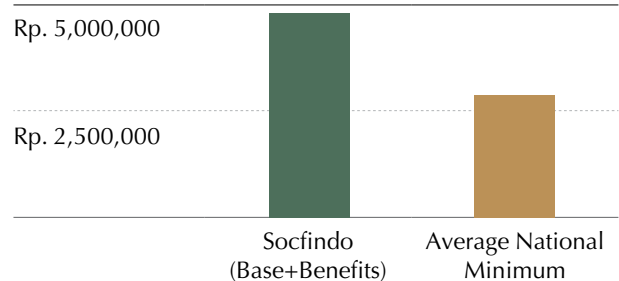
PARENTAL LEAVE IN 2022

	Male	Female
Employees entitled to parental leave	38	450
Employees that took to parental leave	38	450
Employees that returned to work after parental leave	31	450
Employees that returned to work after parental leave ended, that were still employed 12 months later	31	450

1. See <https://rspo.org/resources/archive/907>



SOCFINDO WORKERS WAGES & BENEFITS IN 2022



Other Benefits for Socfindo Employees

In addition to the direct in-kind benefits to employee payments provided to every worker, Socfindo invests significant resources to enhance the wellbeing and welfare of its employees, their families and their communities. Some of these commitments are shown below:

- Day care and kindergarten facilities for children of employees.
- Education, welfare and scholarships.
- School transport.
- Additional medical related expenses.
- Noncontributory and non-funded retirement plan.
- Employee housing maintenance and refurbishment.
- Infrastructure projects, buildings, community halls, places of worships.



Training

Training and development of human resources are consistently ranked as a matter of high importance by internal stakeholders and the community and is a core material parameter for Socfindo. This demonstrates the desire amongst people to better themselves and realise their potential. Socfindo and its community recognise that developing human potential will benefit all. Investing in training and personal development is a win-win for individuals, the organisation and the wider community as a whole. Investing into its employees through training and providing opportunities for growth within the company are a key method by which Socfindo develops and retains talent.

Socfindo Training Program

Socfindo consistently invests into Training for its employees. Socfindo provides regular and relevant training to ensure employees are trained for their assigned roles. We also invest in capacity building and technical skills programs and offer development opportunities that help employees achieve their career goals while also contributing to the company’s goals. Socfindo has in place a documented training program

managed through its human resources department. Each department selects its training and which is then assessed for its effectiveness. The program is reviewed each year to ensure training is kept relevant and meets the needs of employees and the organisation. The program is made up of both internally and externally run training.

TRAINING	STAFF			NON STAFF		
	2020	2021	2022	2020	2021	2022
Average number of trainings hours/employee/year	12.8	38.8	34.6	1.3	1.8	1.4
Number of employees who received trainings	165	158	181	1,867	2,168	1,837
Number of trainings hours provided	2,359	7,174	6,298	11,858	16,110	11,804
Number of external trainings received	18	30	47	15	21	26

There has been a significant increase in the number of trainings in 2021 and 2022 across the board compared with 2020, with a particular increase in the number of external trainings. This is a reflection of Socfindo being able to start increasing again the number of trainings and due to some of the restrictions of Covid-19 being lifted. Socfindo was able to carry out a number of training programs and a snapshot of some of these are set out below:

- Finance, audit and admin: regular annual specific workshops.
- Best management practices in agronomy: from SOPs reviews to chemical handling and disease workshops.
- Research, laboratories and breeding: trainings included the use of new research equipment and techniques.
- CSR & smallholders: we hold a number of seminars for smallholders on oil palm & general plantation management.
- Emergency and fire drills: annual training to maintain good standard of procedures and equipment checking.
- Gender: socialisation on gender issues.
- Medical and health awareness.
- Technical and technology processes.
- Human resources: workshops on leadership and management.
- IT: Workshops to keep up to date with latest technology.
- OSH: from first aid training to road safety trainings.
- Training on standards and certifications: ISO, ISPO, RSPO, etc.
- Water and environmental management: HCV management, etc.

Performance Review

100% of Socfindo's staff (both male and female) receive a regular performance and career development review.

PERCENTAGE OF STAFF PERFORMANCE APPRAISAL BY GENDER

	2020	2021	2022
Female	100%	100%	100%
Male	100%	100%	100%



Annual training for emergency and fire drills.



Effective communication training to improve staff's soft skills at head office.

Occupational Health & Safety

Protecting the health and safety of its employees is Socfindo's top priority. It is also one of the highest ranked materiality parameters reflecting its importance to Socfindo employees, families and the wider community. Socfindo is committed to providing a safe and healthy workplace for all its employees and its Occupational Health and Safety (OHS) at all times complies with all national laws and regulations as well as ILO guidelines.

Keeping a Safe Workplace

Socfindo ensures employee health and safety by careful management, strict and thorough safety processes and protocols and continual training of workers to instill a safety culture, so habits like wearing the required protective equipment at all times and following standard safety regimes become second nature and are the status quo. This is a constant and ongoing process. Due to the restraints of Covid-19, in particular physical distancing requirements annual medical check ups were unable to be undertaken. This has now been recommenced in third quarter of 2022 for high risk employees and will resume for all employees in 2023



Occupational Health and Safety Plan

In order to achieve Socfindo's commitment to provide a safe and healthy workplace for all of its employees and to decrease work accident and illness, Socfindo has in place an occupational health and safety plan which follows Socfindo's normative management approach: Framework, Implementation and Review. The continuous improvement loop is ensured by regular and systematic reviews of this plan. Socfindo's occupational health and safety's framework is in full compliance with the national regulation PP No.50/2012. Socfindo's implementation programme includes:

- Raising awareness through communication, consultation and participation (both internal and external parties);
- Hazard identification and risk assessment; and
- Incident investigation every time a work accident and emergency condition occurs. Results of this investigation are included back into hazard identification and control in order to prevent or minimize the risk of reoccurrence.

In addition, Socfindo has an annual audit program conducted by internal and external auditors. Audit programs are carried out as part of a process to maintain consistency in the system, implementation and to inform management to ensure continual improvement.

Safety Committee

Socfindo also has a dedicated Health and Safety committee known in the national regulation as “Panitia Pembina Keselamatan dan Kesehatan Kerja or P2K3” in each estate. The safety committee helps management to identify safety issues and find solutions. The safety committee routinely conduct meetings to facilitate dialogue between management and workers about safety. The existence of a safety committee in Socfindo is legally stipulated by the manpower agency so that safety committee regularly submit their reports to the government agency.

Work Related Injuries

Socfindo is pleased to report that there have been no fatalities in 2021 and 2022 and that there has been a reduction in work related injuries. However, despite best efforts we regret to report there were four serious work injuries in 2022 as follows;

- A worker at one of our mills had an accident chopping palm fruit and cut his foot;

- A mill worker undertaking repairs on machinery got his hand stuck and a finger was required to be amputated;
- A worker slipped from a dump truck and fell fracturing both arms;
- A dump truck door was closed on a worker’s hand fracturing three fingers in one hand.

Socfindo takes any safety incidents or accidents very seriously. Each accident is thoroughly investigated and the necessary actions such as increasing safety procedure awareness are taken to prevent recurring situations. Every 6 months Socfindo undertakes HIRADC (hazard identification, risk assessment and determination control) and safety and risk education to all workers. We also routinely conduct safety talk and briefing to all workers and training programs are also carried out regularly to our workers.

Work Related Ill Health

Socfindo is pleased to report that in 2021 and 2022 there were no work related ill health cases or fatalities.

WORK RELATED INJURIES

	2020	2021	2022
Total manhours	19,092,947	18,383,602	17,925,837
Work related injury	64	48	39
High consequence work injury	1	-	4
Fatality	2	-	-
Lost days	2,610	2,986	1,806
Accident frequency rate (Lost time accident based on 200,000 hours worked, also known as injury rate)	0.67	0.52	0.44
Accident severity rate (based on 200,000 hours worked)	40.78	62.21	46.31
Rate of high consequence work related injury (based on 200,000 hours worked)	0.01	0	0.04
Fatality rate (based on 200,000 hours worked)	0.02	0	0
Work related ill health	0	0	0
Work related ill health fatality	0	0	0


Safe Pesticide Handling

Specific focus is given to the safe handling of chemicals and pesticides and as part of its Pesticide Policy, all workers, permanent or not involved with pesticides are trained and equipped adequately and their health is monitored. All workers who handle pesticides must first go through a strict and rigorous training in safe pesticide use and receive pesticide handling and use certification. Personal protection equipment must be used at all times and workers who work with pesticides receive regular free medical checkups to carefully monitor for unforeseen effects on their health. Finally, pregnant women and new mothers that are breastfeeding are not allowed to handle chemicals and will be reassigned to more suitable work for these periods. There have been no instances of accidents or illnesses due to the handling of chemicals and pesticides during the reporting period.

Occupational Health Services

Socfindo operates a clinic headed by a medical doctor. It serves as a health service center and has a license to conduct occupational analysis. In remote divisions on the plantations, our nurses can deliver basic health care, while in case of specific needs, Socfindo facilitates transport or evacuates to its central clinic or nearest hospital.



 Mechanising spraying activities in the field.

Labour & Human Rights

Labour Rights

Socfindo prides itself on being a decent place to work, respecting all workers' rights and strictly complying with all labour laws and national legal requirements in relation to the workplace. Socfindo also fully supports and adheres to the principles of the International Labour Organisation's (ILO) Declaration of Fundamental Principles & Rights at Work.

Unlike many organisations, Socfindo does not have "guest" workers from outside provinces or other countries. All workers in Socfindo are from Indonesia and are locally recruited in the provinces of North Sumatra or Aceh where Socfindo's operations exist. Socfindo does not use third party agencies in the recruitment of workers. As part of its Fair and Decent Work Policy (see <https://www.socfindo.co.id/documents/eng/Policy-Decent-Living-Wage.pdf>), Socfindo strictly prohibits the retention of identity documents, payment of recruitment fees, contract substitution, debt bondage and forced labour.

Freedom of Association and Collective Bargaining

Socfindo is committed to allowing Freedom of Association and collective bargaining and has a publicly available Freedom of Association Policy (see <https://www.socfindo.co.id/documents/eng/Policy-Freedom-of-Association.pdf>) which has been socialised and made available to all employees within the organisation. In Socfindo, workers are free to join unions or collective groups of their choice. All Socfindo workers belong to a union or collective group and collective agreements exist between workers and the company.

WORKERS THAT ARE AFFILIATED TO A LABOUR UNION

	2020	2021	2022
Percentage	100%	100%	100%

No Forced Work

As part of its Fair and Decent Place to Work Policy (see <https://www.socfindo.co.id/documents/eng/Policy-No-Forced-Work.pdf>), Socfindo has a strict policy of no forced work. This applies both within its own organisation and with its suppliers and contractors. In addition, this policy guarantees employees' rights to resign and prohibits penalties for the termination of employment and the with-holding of wages.

No Involuntary Overtime

Socfindo strictly complies with all national regulations relating to the working of overtime and prohibits involuntary overtime. All overtime is voluntary at Socfindo, with all workers consenting in writing before working overtime.

Preventing Harassment & Violence

Socfindo has zero tolerance for harassment in any shape or form as expressed in Anti-discrimination and Equal Opportunity Policy (See <https://www.socfindo.co.id/documents/eng/Policy-Prevention-of-Violence-Harassment.pdf>). This policy is publicly available and has been socialised and implemented throughout the entire Socfindo organisation.

During the reporting period, socialization refresher training was undertaken for all workers to understand the kinds of harassment that may potentially occur in the plantations and to understand how to submit a complaint and the channels available in the situation harassment is experienced.

Procedure for Reporting Harassment

To further protect all of its employees against harassment, Socfindo has implemented a specific grievance procedure where any employee may report an instance of harassment which includes sexual harassment, intimidation or violence of any kind. This procedure includes special measures to protect the confidentiality of the victim and a specific channel which involves both the gender committee and senior management in investigation, adjudication and resolution as required. Please see our grievance section here <https://www.socfindo.co.id/contact-us/grievance>.

Instances of Harassment

During this reporting period, there have been no reported instances of harassment, intimidation or violence within Socfindo.

Protecting Children

NO CHILD LABOUR

Socfindo has a zero tolerance for child labour. To protect children, Socfindo does not employ nor allow any work to be undertaken by any individual under the age of 18. This strict no child labour policy is enforced both internally and in all its contracts with suppliers.

PROCEDURES TO VERIFY AGE PRIOR TO HIRING

Socfindo employs careful screening procedures prior to hiring to verify the identity and age of an individual to ensure Socfindo does not unwittingly employ minors under the age of 18. This includes confirmation of an individual with their original National Photo Identification Documents (Indonesian Personal

Residency ID) as well as checking degrees and family card. Copies of these documents are made and kept on the company's register file and records.

DAY CARE FOR YOUNG CHILDREN

To ensure young children have a safe place to go to whilst their parents are working, Socfindo provides day care and kindergarten facilities for children of employees who are under school age.



 Children in a Socfindo day care facility.

Socfindo Human Rights Policy

Socfindo recognises that human rights are universal and is committed to respecting and upholding human rights in the communities in which it belongs. In addition to strictly complying with all national regulations relating to human rights, as a formal recognition of its commitment to human rights, Socfindo has in place a documented human rights policy. This policy commits Socfindo to upholding the fundamental human rights as expressed in the International Bill of Human Rights and the principals concerning fundamental rights set out in the International Labour Organisation's declaration on fundamental principles and rights at work. This policy has also been extended to suppliers who are required to uphold these human rights as part of their contractual obligations.

Socfindo manages human rights through compliance with all national laws and regulations, through implementing and enforcing its human rights policy, its grievance procedures and processes and through meeting its obligations under the RSPO which also includes following the RSPO human rights working group guidance.

Protection of Human Rights Defenders and Whistle Blowers

Socfindo will not tolerate violence or intimidation of any kind against any individual including human rights defenders and whistle blowers. Socfindo has put in place a formal human rights defenders policy (see <https://www.socfindo.co.id/documents/eng/Policy-Human-Rights-Defenders.pdf>) as part of its wider human rights policy which has also been implemented and communicated throughout the entire organisation as well as all key stakeholders including suppliers. This policy includes a strict prohibition on any retaliation against human rights defenders and whistle blowers. In addition, Socfindo has in place special grievance procedures to protect human rights defenders and whistle blowers in the situation where they have laid a complaint or grievance with the company. For more details, please visit our grievance section here <https://www.socfindo.co.id/contact-us/grievance>.



📷 Advancing workers' rights workshop held in collaboration with ILO in Bangun Bandar estate.

Human Rights Training

Socfindo undertakes regular human rights training within its entire organization (staff and non staff) as well as with external suppliers. This is an important method by which human rights are implemented into Socfindo as an organization.

HUMAN RIGHTS TRAINING

	INTERNAL			EXTERNAL		
	2020	2021	2022	2020	2021	2022
Participants	575	835	925	180	162	220
Hours	1,725	2,513	2,787	360	324	440

Free, Prior & Informed Consent

Free Prior and Informed Consent (FPIC) is an important process in a multicultural country like Indonesia where land ownership is complex and there can be competing land titles and overlapping customary rights over land from different indigenous communities and local communities. Socfindo always respects the rights of indigenous populations and local communities' FPIC. This recognises indigenous peoples' inherent and prior rights to their lands and resources and respects their legitimate authority to require that third parties enter into an equal and respectful relationship with them, based on the principle of informed consent. Socfindo's current plantations most often have preceded the development of the communities around them, making them an integral part of their environment. Socfindo is therefore fortunate to not have any land or customary rights issues in the land the plantations they occupy.

Any future expansion of plantations by Socfindo shall follow a comprehensive FPIC process, as per Indonesian law and its ISPO and RSPO commitment, which ensures full respect for all local communities and indigenous peoples' legal and customary rights to their territories and lands in accordance with Indonesian law and best practice, ISPO and RSPO FPIC practices.

Grievance

Socfindo has established and published internal and external grievance procedures to ensure that in the event there is a complaint, an issue between parties or a suspected noncompliance with established norms, these may be reported, investigated and resolved through pre-determined processes which are fair, transparent and can provide an effective resolution. All grievance procedures have been socialised to both internal and external stakeholders and are understood by all potentially affected parties. All complaints upon being received are entered into Socfindo’s system and tracked at all stages until effective resolution. Historical records of grievances are stored.

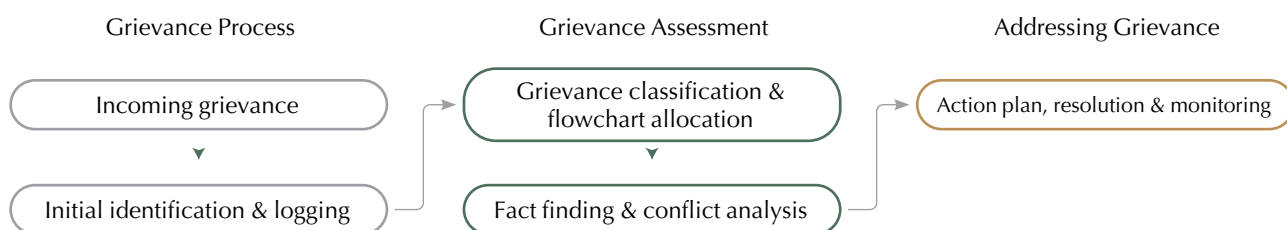
Grievance Process In Socfindo

SUBMITTING A GRIEVANCE

The first step in the grievance procedure pathway is submission of a grievance. In accordance with natural justice principles, Socfindo requires a grievance to be submitted in writing, however there are multiple points where a grievance may be submitted, depending on the nature of the grievance and the stakeholder concerned. All pathways allow for both online or in person submissions to convenient well known pre-defined

locations or persons. There is also assistance available for any stakeholder who may require support in filling out a written grievance. Grievance form is standardised and thus the same regardless of the method and location of submission. Once the grievance form has been submitted, the grievance automatically enters Socfindo’s grievance procedure system.

Simplified Grievance Procedure Flow Chart



GRIEVANCE- SPECIAL PROTECTION CATEGORIES

Socfindo has in place systems to screen submitted grievances, to classify the nature of the grievance and determine if it is of a type that will trigger special protections. This is a crucial step as there are certain kinds of grievance which require special protections for the complainants. These include specifically:

- Complaint involving human rights defenders and / or whistle blowers.
- Complaint involving any allegation of sexual harassment, harassment of any kind or violence or intimidation.

In the case that a grievance is classified in one of the above categories, in addition to having their own

special grievance procedure pathway, automatic protections are triggered for the complainant including:

- Measures to protect and ensure the confidentiality of the complainant; and
- In the case of any potential violence and or retaliation, protections for the complainant and all measures possible taken to reduce tensions and to ensure safe nonviolent resolution.

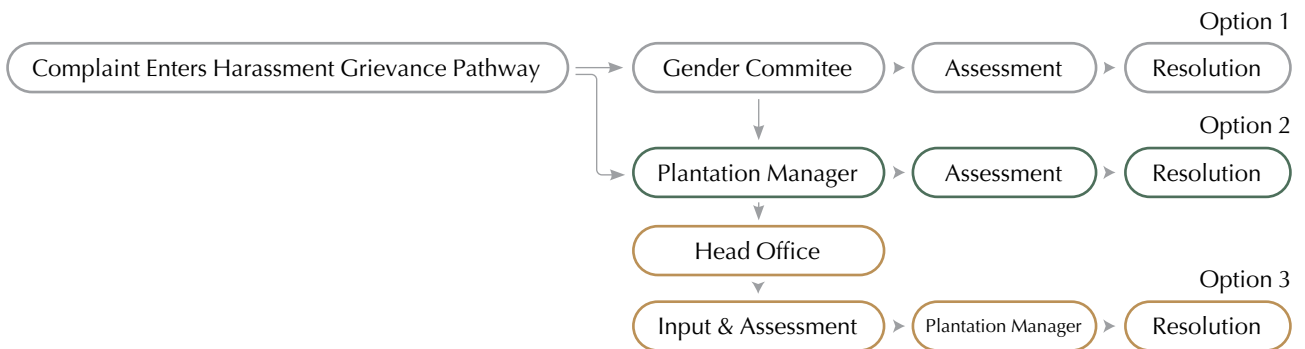
In addition, in the event that any complaint could potentially rise to a violation of any national laws or regulations, Socfindo shall contact the relevant authorities as per its legal obligations.

GRIEVANCE PROCEDURE PROCESSES

After initial classification and assessment, a grievance will enter into one of the grievance procedure pathways as summarised below.

Option 1 is favoured when possible, allowing for an efficient resolution. However, the system also allows for an escalation of process (in case the issue cannot be solved locally by the gender committee (see second and third option). Confidentiality protection applies in all cases involving sexual harassment, intimidation and violence, triggered during assessment phase.

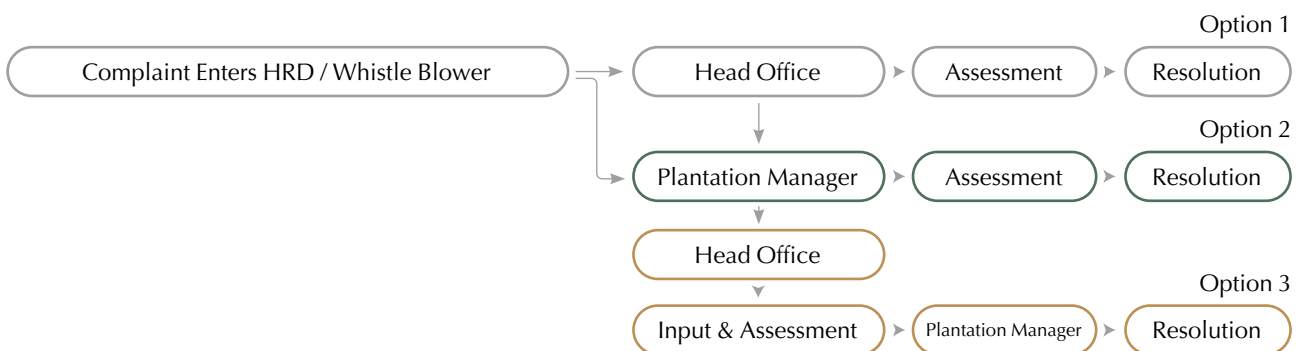
Flow Chart for Sexual Harassment, Intimidation and Violence



PATHWAY FOR HUMAN RIGHT DEFENDERS AND WHISTLE BLOWERS

The system allows for an escalation or transfer of process (in case the issue cannot be solved locally or in the case of conflict of interest and/or for protection of confidentiality). Protection measures are taken in case of potential violence threat or harm, triggered in the assessment phase. Confidentiality protection applies in all cases involving human rights defender or whistle blowers, triggered during assessment phase.

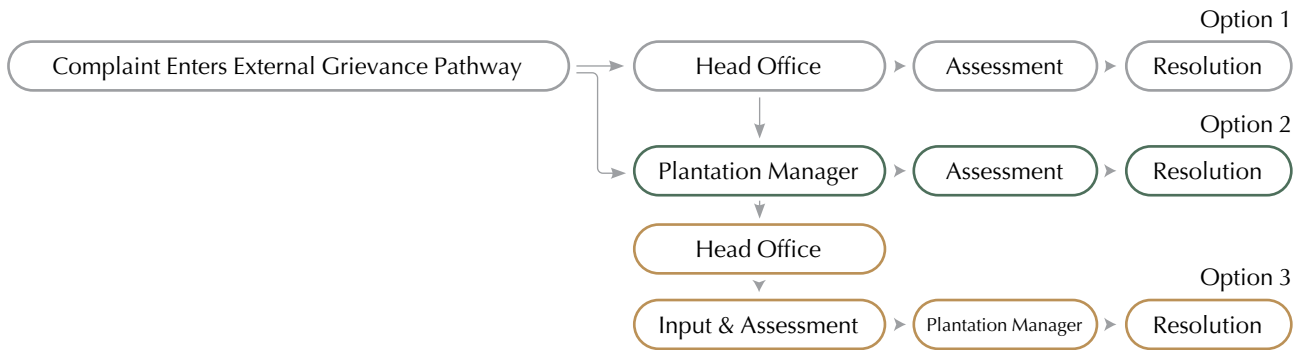
Flow Chart for Human Right Defenders and Whistle Blowers



PATHWAY FOR COMMUNITY AND OTHER THIRD PARTY STAKEHOLDERS

The system allows for an escalation or transfer of process (in case the issue cannot be solved locally or in the case of conflict of interest).

Flow Chart for Community and Other Third Party Stakeholders



TRACKING GRIEVANCE

All complaints upon being received are entered into Socfindo’s system and tracked at all stages until effective resolution. Historical records of grievances are stored.

There have been 12 grievances reported during the reporting period; 5 in 2021 and 7 in 2022 all of which have been satisfactorily resolved. Six were internal grievances, four involved neighboring communities and two were seed product customers.



Discussion on the theme of workers' rights in Indonesia palm oil sector held in Bangun Bandar estate.

Smallholders

Socfindo's Smallholder Initiatives

Most of the smallholders in the area where Socfindo operate sell their fruits to independent mills, which have sprouted in North Sumatra, to a point where there is now an abundance of mills with a processing capacity that is yet to be filled. Socfindo mills on the other hand being small in capacity per industry standard, were designed long ago based on the initial land base and are therefore operating at full capacity. Despite this, Socfindo recognises the importance of assisting smallholders to increase their yield, improve practices and gain access to premium prices through sustainability certification like RSPO, thereby improving incomes and livelihood for Indonesian rural communities.

Socfindo's Smallholder Program

Socfindo's Smallholder Program was launched to improve the standard of living of independent smallholders through increased productivity by applying good and sustainable agricultural cultivation practices so as to increase the production of Fresh Fruit Bunches (FFB) and social and environmental protection. Seminars and field sessions are organised, where Socfindo invites smallholders from local districts to visit its plantations to get a better understanding of good agricultural practices, sustainability initiatives and environmental protection. The smallholders are given training sessions in safe handling of pesticides with appropriate Personal Protective Equipment (PPE).

Socfindo also maintains nurseries with specific advanced material selling three months seedling specifically aiming for the smallholder market. Socfindo has signed cooperation contracts with farmer groups located around the estates, totaling 128 MOUs covering 7,191 farmers with an area of 11,811

hectares spread throughout the plantation units of PT Socfindo. In the long term, this program will aim to empower local farmers to obtain sustainability system certification and work towards gaining premiums from selling certified palm oil. Socfindo has carried out a number of trainings for these smallholders during the reporting period, a snapshot of is set out below:

SMALLHOLDER PARTNERSHIP KEMITRAAN (OUTSIDE OF THE RSPO INITIATIVE OF SEI LIPUT AND AEK LOBA)

	2020	2021	2022
Numbers of farmers	2,692	5,458	6,330
Numbers of farmers training	41	123	483

Sei Liput & Aek Loba Smallholder Association RSPO Certification Program

In addition to the Smallholder activities set out above for the last two years, Socfindo has run a mentoring program for independent smallholder associations to obtain their RSPO certificate. This program commenced at Socfindo's Sei Liput estate and then followed in Aek Loba estate. The smallholder assistance program for RSPO certification is part of the Socfindo program to assist and contribute to the development of the region where our estates are located and is a way of acknowledging our mutual beneficial relationship. This program is expected to greatly impact the smallholders targeted and their wider communities through skill sharing, economic benefits from better yields and increased premium. It should also add value to their land as it will be part of a greater so-called "verified sourcing area."

SMALLHOLDER CERTIFICATION PROGRAM (SEI LIPUT AND AEK LOBA)

	SEI LIPUT	AEK LOBA
Certification objective	RSPO & ISPO	RSPO
Numbers of farmers represented by the associations	500	361
Numbers of hectares covered	1,279	498

SEI LIPUT

Sei Liput smallholders have formed a smallholder association recognised as a legal organization by the Ministry of Justice and Human Rights. Socfindo has collaborated with FKL (Leuser Conservation Forum) and IDH (Green Trade Initiative) on preparing the RSPO certification process for the smallholders. The number of farmers who are planned to take part in the initial RSPO certification is 346 people with a land area of approximately 426.74 ha.

Socfindo's assistance has consisted in:

- Surveying the land boundaries;
- Conducting trainings;
- Compiling work procedures;
- Implementing and monitoring and we also conducted internal mock audits.

Currently, the smallholder association is completing the requirements for the registration as an RSPO member and are forecasting their initial audit in mid-2023.



AEK LOBA

At the end of 2022, the smallholder association in Aek Loba plantation has been recognised by the Ministry of Justice and Human Rights. Currently, the process being carried out by the association has started with the mapping of the farmers land. This work takes much time and effort and the association has set up and trained a specific team to tackle the challenge of digitalising the land of their 361 members.

This activity is the required first initial step prior to subsequent assessment such as Land Use Change Analysis (LUCA) and HCV assessment. It is also necessary to get required documents such as Cultivation Registration Certificate and Land ownership certificate.

In addition, the Aek Loba farmer association has started capacity building exercises focusing on best management practice, safety and environmental management. Once the association has completed these trainings, they will be able to enter in the next phase consisting of the assessing their policies and addressing membership procedures. We are planning for a potential initial RSPO certification in mid-2024.



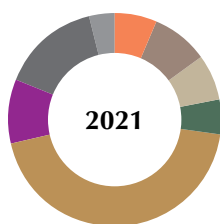
📹 Smallholder training on best management practices (BMP).

Community Development

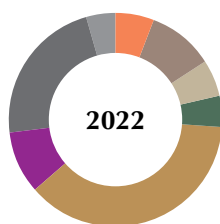
Socfindo has always invested into and supported the sustainable development of its communities. Below are some of the initiatives recently undertaken to support community development.

Community Support Program

Socfindo has a long standing and well-established process whereby each year individuals in the community and their representatives can submit proposals for community development and initiatives for the benefit of the community and or its individuals. Socfindo has a specific budget for these projects each year and together with the community will select the projects which will deliver the most benefits. Through its plantation management, Socfindo has an ongoing informal dialogue with community representatives and leaders. As an important part of their role, plantation managers are in regular contact with community representatives and leaders and are regarded as important leaders in the communities themselves, often joining local celebrations, events and assisting to resolve disputes in the community. Through this informal channel and its more formal community consultations, Socfindo is able to tailor its community development program to meet the actual needs of the local communities it is a part of. It is important to note that each plantation’s program may be different depending on the needs of the community.



Rp. 4,844,874,790



Rp. 6,777,019,704

SUMMARY OF COMMUNITY PROGRAMS

ACTIVITY

- Community development
- Infrastructure
- Economic
- Religion
- Education
- Smallholder partnership
- Health Care
- Sports

Community Impact

SUPPORTING LOCAL ENTREPRENEURS

Hatchling and Livestock

This program is a continuation of the company's community development program from the previous reporting period. The farmers who have received the assistance previous year are still running their businesses today. Socfindo aims to further develop the fish seed businesses for other village communities. There are several village community groups located around the Aek Pamienke plantations, Tanah Besih, Seumanyam, Seunagan, Negeri Lama who were provided with fish seeds and livestock assistance by the company. As part of this program, we are also targeting communities whose members have physical and mental disabilities. In Indonesia, these communities, whose people would otherwise be marginalised, are formed to support their members in achieving a decent life. We have such a community close to one of our estate, who we support in their farming project, by providing them catfish hatchlings.



📷 A fish farmer who was provided hatchlings throwing his net.

Mushroom Farming and Training



📷 Production mushroom at Socfindo conservation.

One of Socfindo's partner mushroom farmers is Mr. Edi Perianto, the owner of the mushroom farm house. Socfindo facilitated the training of Mr. Edi, by hosting a shitake mushroom workshop for community members. This should enable the mushroom farm house to develop more types of mushroom cultivation which may inspire his community to develop new and alternative sources of income in their rural areas.

Procurement of Sewing and Embroidery Machines



📷 The newly embroidery machines at the Cocoon House being put to good use.

In 2022, the Rumah Kepompong added 2 embroidery machines following the success of the previous sewing machines. A free training was held for ten days, after which, the participants could practice the embroidery skills that had been taught at the Rumah Kepompong.

Assistance to Our Partner Smallholder



📷 Heavy equipment assistance on some of our communities' roads.

In addition to the specific smallholder certification programs in Sei Liput and Aek Loba, around each estate, Socfindo has a network of smallholders who the company assist and partners with. Training and infrastructure assistance are provided by the company with the objective of raising their productivity and build up their competency. We also focus on assisting with administrative procedures such as the facilitation of smallholder land certificates by getting the geolocations of the farms in collaboration with national land agency.

The land certificate is an important document that may serve as collateral in obtaining credit facilities from banks for example when smallholders are looking at financing their replanting activities.

Another example where the company facilitates best management practices is by assisting in taking soil samples and doing leaf diagnostics, so that adequate fertilizer recommendations can be made.

EDUCATION

Scholarship



📷 Students ready to start the day at school.

The Philippe Fabri Scholarship award scheme was established in 2004 with the aim of awarding students of Socfindo non staff personnel who achieve good academic performance. In 2021, 100 students (senior high school and university) were benefited from the scheme for a total amount of Rp. 305,001,000 and in 2022, 94 students for a total of Rp. 286,496,000.

Caring for the next generation



📷 Kids playing in the plantation playground.

Socfindo has welcomed and supported 677 children in its kindergartens, of which more than 30% were members of our local communities without any formal ties with the company. In 2022, we also hosted 178 young children in our pre-school facilities.

SUPPORTING ART AND CULTURE

Procurement of “Kuda Lumping” Art Equipment



📷 Supporting the cultural activities around our plantations, seen here, a Kuda Lumping mask.

“Kuda Lumping” is one of Indonesia's traditional arts originating from the island of Java.

The art of Kuda Lumping needs to be preserved by maintaining its authenticity and should not lose its values as an ancestral art. Many members of the communities around the company's estates are traditionally of Javanese descent and Socfindo participated in reviving the kuda lumping art by procuring lumping horse art equipment for the art association in Martebing village.

HEALTH

Herbal Infusions Training



📷 Herbal plants being planted for future Jamu preparations.

As a spin off from the main Socfindo Conservation garden initiative in Bangun Bandar, family medicinal garden were set up in each of Socfindo's estates. In these gardens, the spouse association runs specific workshops where they train the local communities on the subject of using therapeutic herbal infusions. These preparations are part of the traditional Indonesian culture but tend to fade out with times as a result of people migrating to cities and being disconnected with their home traditions.

For more details on the community programs related to health undertaken by Socfindo Conservation, please see here <https://www.socfindoconservation.co.id/>.

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GLOSSARY

Biochar

The lightweight black residue, made of carbon and ashes, remaining after the pyrolysis of biomass. Biochar is defined by the International Biochar Initiative as "the solid material obtained from the thermochemical conversion of biomass in an oxygen-limited environment".

Biodiversity

The diversity (number and variety of species) of plant and animal life.

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.

Certified Emission Reductions (CERs)

A unit issued for GHG emission reductions from CDM project activities or PoAs (non-A/R) in accordance with the CDM rules and requirements, which is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol.

Clean Development Mechanism (CDM)

A mechanism under the Kyoto Protocol, the purpose of which, in accordance with Article 12 of the Kyoto Protocol, is to assist non Annex I Parties in achieving sustainable development and in contributing to the ultimate objective of the Convention and to assist Annex I Parties in achieving compliance with their quantified emission limitation and reduction commitments under Article 3 of the Kyoto Protocol.

Coordinating Entity

An entity authorised by all participating host country DNAs involved in a particular Programme of Activities and nominated in the Modalities of Communication statement as the entity that communicates with the Board and the secretariat, including on matters relating to the distribution of CERs, tCERs or ICERs, as applicable.

Certified Sustainable Palm Oil (CSPO)

The term is commonly associated with palm oil that has been certified by the Roundtable on Sustainable Palm Oil (RSPO).

CDM Programme of Activities (PoA)

A voluntary coordinated action by a private or public entity which coordinates and implements any policy/measure or stated goal (i.e. incentive schemes and voluntary programs) that leads to GHG emission reductions or net anthropogenic GHG removals by sinks that are additional to any that would occur in the absence of the PoA, via an unlimited number of CPAs.

Co-composting

In the context of this report, Co-composting refers to environmentally sound aerobic co-composting of a portion or all of a Palm Oils Mill's solid biomass waste, in particular empty fruit bunches (EFB) together with the liquid Palm Oil Mill Effluent (POME) to produce organic compost which can be recycled and reapplied to the plantation.

Empty Fruit Bunches (EFB)

The bunch that has been emptied of its fruits, a by-product of the milling process.

Fresh Fruit Bunches (FFB)

Bunch harvested from the oil palm tree. The weight of the fruit bunch in Socfindo varieties usually ranges between 4kg to 20kg depending on the age.

Free Prior and Informed Consent (FPIC)

FPIC is the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use.

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.

High Carbon Stock (HCS)

The HCS approach is a methodology to avoid deforestation in land development. The approach stratifies the vegetation into different classes using analyses of satellite images and field plot measurements. Each vegetation class is validated through calibrating it with carbon stock estimates in the above-ground tree biomass. The methodology distinguishes HCS forest areas for protection from degraded lands with low carbon and biodiversity values that may be considered for development.

Ganoderma Disease

Ganoderma boninense is a fungus responsible for basal stem rot, which is the most worrying disease in the oil palm plantations of Southeast Asia, where it can cause over 80% mortality.

Greenhouse Gas (GHGs)

A greenhouse gas listed in Annex A to the Kyoto Protocol.

GPSNR (Global Platform for Sustainable Natural Rubber)

The he Global Platform for Sustainable Natural Rubber is an international, multistakeholder, voluntary membership organisation, with a mission to lead improvements in the socioeconomic and environmental performance of natural rubber value chain.

IFCC (Indonesia Forestry Certification Cooperative)

The standardising and governing body for the Indonesian Forest Certification Scheme. It promotes sustainable forest management through forest certification and labeling of forest-based products that originate from certified forests.

Indonesian Sustainable Palm Oil Organisation (ISPO)

The Indonesian Government under the Ministry of Agriculture established a mandatory certification scheme in 2011, namely the Indonesian Sustainable Palm Oil Principles & Criteria (ISPO) to ensure that all producers live up to specific environmental, economic and social standards when operating in Indonesia. For more information on ISPO, please visit: www.ispo-org.or.id/index.php?lang=en.

Integrated Pest Management (IPM)

A pest management system that in context of the associated environment and the population dynamics of the pest species utilises all suitable techniques and methods in as compatible a manner as possible and maintains the pest population at levels below those causing economically unacceptable damage and loss.

International Labour Organisation (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.

Palm Kernel (PK)

Seed of the oil palm fruit, which is processed to extract palm kernel oil and other by-product.

Palm Oil Mill Effluent (POME)

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

PEFC (Program for the Endorsement Forest Certification)

The Programme for the Endorsement of Forest Certification is an international, non-profit, non-governmental organization which promotes sustainable forest management through independent third party certification.

Roundtable on Sustainable Palm Oil (RSPO)

The RSPO is a not-for-profit that unites stakeholders from the 7 sectors of the palm oil industry: oil palm producers, processors or traders, consumer goods manufacturers, retailers, banks/ investors and environmental and social non-governmental organisations (NGOs), to develop and implement global standards for sustainable palm oil. For more details on the RSPO, please visit: www.rspo.org/about.

Smallholder

Smallholders are “farmers growing oil palm, sometimes along with subsistence production of other crops, where the family provides the majority of labour. The farm provides the principal source of income and where the planted area of oil palm is below 50 hectares in size.”

United National Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty adopted on 9 May 1992 and opened for signature at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992. It then entered into force on 21 March 1994, after a sufficient number of countries had ratified it. It develops a global response to stabilising greenhouse gas concentrations in the atmosphere.

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