

# Empowering Sustainable Agriculture, Managing Natural Resources, Safeguarding and *Enhancing Biodiversity*

Barn owl at Mamor Estate.

IOI seeks a model of sustainable agriculture that balances high productivity with strong conservation. With an oil yield generally higher than the national average, we reduce land use and contribute to climate change mitigation while ensuring food security. We are committed to a "no deforestation" policy, protection of peat areas, and rigorous environmental assessments. To manage our finite natural resources, we practise the 7Rs of Circularity to reduce our impact to the environment, especially by utilising our byproducts or biomass for value added purposes. We uphold high conservation values, enforce a strict zero-burning policy, and implement Integrated Pest Management ("IPM") to control pests naturally. Innovative regenerative practices like using beneficial cover crops to keep soil rich in nutrients naturally, and palm biomass as organic fertilisers further underscore our dedication to safeguarding our biodiversity and ecosystems.



Rehabilitation work at our conservation area

# Regenerative and PRECISION AGRICULTURE



One of the beneficial plants (*Turnera Subulata*) found in our plantations

## MANAGEMENT APPROACH

At IOI, elements of regenerative and precision agriculture are integrated in its best agricultural practices. Specifically, we have policies, guidelines, operating procedures such as the IOISP, Agrochemical and Environmental Management Guidelines, etc., to protect, conserve the environment and its ecosystem within. At our estates, in line with RSPO's Principle and Criteria, terrain management is carried out by minimising the area of exposed soil by planting cover crops and prohibiting planting in steep terrains. Reducing the area of exposed soil minimises soil erosion and nutrient runoff, particularly during the monsoon season; while preserving steep areas reduces the likelihood of landslides. Cover crops also increase carbon sequestration, water retention, and provide microhabitats for soil-dwelling organisms to flourish which is crucial for nutrient cycling.

IOI's regenerative agriculture practices also emphasise circularity and waste reduction through the land application of POME and EFB, recycling OPT and more. Soil and plant samples are collected by our research teams when required to monitor soil health and identify nutrient deficiencies in our crops. Fertilisers are applied only when required to not only reduce waste and cost but to minimise impacts on the environmental ecosystem. As an additional measure against possible fertiliser leaching into our waterways, our operations have also designated non-chemical buffer zones around water bodies. Whenever possible, as part of circularity, POME and EFB are repurposed to be used as an alternative and natural source of fertiliser.

Where pesticide use are concerned, IOI follows strictly our commitment stated in the IOISP regarding prohibition of use of Class 1A or 1B pesticides categorised by the World Health Organisation, chemicals under the Rotterdam Convention and Stockholm Convention while the use of Class I agrochemicals is permitted only under strict supervision and authorisation during acute events like pest outbreaks. This is to minimise harm towards soil organisms that is vital in promoting soil health. Ultimately, overall good soil health must be protected without compromising IOI's goals of a healthy, high yielding oil palm trees.

**At our estates, in line with RSPO's Principle and Criteria, terrain management is carried out by minimising the area of exposed soil by planting cover crops and prohibiting planting in steep terrains.**

The practice of IPM is another way IOI reduces our dependencies on pesticides. For example, barn owls are used to control rodent population which may impact crop yield if left unchecked. Our estate plants beneficial plants like *Cassia cobanensis*, *Antigonon leptopus* and more to attract natural predators to pests. Climate change may introduce a destabilising effect on the population of pollinators and natural predators. To counter this, IOI plans to cultivate beneficial insects and releases them as part of the IPM to reduce the population variability caused by climate-related events. Such measures serve as an insulator to external shocks, increasing ecosystem resilience. Under our IPM approach, we aim to release 200 beneficial insects annually, target a 70% barn owl occupancy rate and increase the box-to-land ratio to 1:15 ha over three years. Ultimately, we hope to improve biodiversity indices by 25% within three years with our ongoing annual ecosystem health monitoring.

## ACTIVITY DRIVEN PERFORMANCE AND IMPACT

### Crop Diversification

Under our 5 key strategic priorities, IOI recognises the importance of biodiversity and its ecosystem to our business. Therefore, crop diversification, as part of our regenerative agriculture practices, has become a focus area to enhance biodiversity within our operations. This approach reduces the environmental impact of farming by fostering a more balanced ecosystem and decreasing the need for synthetic fertilisers and pesticides.

As of FY2024, we have planted 3,131 hectares of coconuts, 568 hectares of bananas, 49 hectares of pineapples, and 87 hectares of durians. Additionally, we plan to further expand our operations by intercropping coconuts with fast-growing, high-value fruit crops like pineapple. To achieve the target, we have also established nurseries to ensure we produce sufficient planting materials by capturing existing crop diversity and developing new and improved materials for the future expansion of the Group.

**3,131** hectares of coconuts

**568** hectares of bananas

**49** hectares of pineapples

**87** hectares of durians

### Organic palm oil

IOI has developed a successful project in the Pamol Kluang region dedicated to producing organic palm oil. We are the first organic certified oil palm plantation in Southeast Asia. This initiative represents a significant step toward a more sustainable and environmentally friendly agricultural practices.

In this project, our approach focuses on enriching soil biodiversity and health, which is essential to maintain fertile and resilient soil. The use of inorganic fertilisers and pesticides have been replaced with natural alternatives, including mulched biomass residues, beneficial plants, etc. By incorporating diverse plant species and natural methods, we aim to disrupt disease cycles and reduce pest outbreaks, which are critical for minimising the need for chemical interventions. Additionally, these practices help decrease our overall reliance on synthetic chemicals, thereby reducing their environmental impact and promoting a healthier ecosystem.

Furthermore, our organic palm oil fields have demonstrated remarkable ecological benefits, including a 60% increase in barn owl population over the past two years. This increase

highlights the successful implementation of IPM strategies within our newly certified organic fields. The presence of barn owls is a positive indicator of the health of the ecosystem and the effectiveness of our pest management techniques. This achievement not only contributes to biodiversity but also enhances the overall sustainability of our operations.

Last but not least, we achieved a significant milestone in February 2024 – 1,128 hectares of organic oil palm was both RSPO and organic-certified. These certifications further validate our process and underscore our commitment to sustainable and environmentally responsible agricultural practices.

### Palm Biotech and Research

Aligning with our efforts to increase the use of beneficial plants and animals, IOI Research Center is introducing a new plant species (*Crotalaria sp.*) in selected study areas of our estates. In FY2024, the center also published numerous research papers relating to predatory insect behaviors, experiences in mass rearing of beneficial insects and barn owl relocations.

IOI Research Center and IOI Palm Biotech currently leads our efforts to achieve our strategic priority of increasing yield through research. As a result, we have developed a commercial DXP palm hybrid derived from Deli x AVROS with improved characteristics that exhibit precocious traits. The pilot material starts to produce harvestable fruit bunches after 2 years of planting. In contrast, conventional palms of similar age can only be scout-harvested as some fruits remain immature.

Referencing our target of using elite clonal palms in 50% of our replanting materials, thus far, we have achieved a utilisation rate of 33% in Peninsular Malaysia and 15% in Sabah. Our elite clonal palms have successfully increased the oil OER of our FFB. In FY2024, our Baturong mill recorded the highest average OER of 25.18%, while Morisem mill recorded an OER of 23.48%. Both these mills have over 38% clonal palms planted in their source estate groupings. We expect the proportion to increase depending on our production of clonal palms and replanting requirements. Apart from that, our biotech center is also working to achieve high quality banana ramets as part of our crop diversification strategy.



Sample preparation at IOI Palm Biotech

# Circular Economy and MANAGING NATURAL RESOURCES

One of IOI's strategies to achieve net zero is to practice circular economy. This more systematic approach is designed to preserve and enhance natural capital, optimise resource yields, and minimise system risks by managing our natural resources and promote renewable flows. Apart from that, our waste, water and soil management also complement the practice of circular economy. Waste materials were converted into fertilisers for soil management or raw materials for other industries, while wastewater was recycled and reused in production. The benefits are twofold: Our exposure to environmental risks (soil degradation, water stress, etc.) and negative impacts on the environment can be reduced.

## IOI'S APPROACH TO CIRCULARITY – 7RS OF CIRCULARITY

Throughout IOI's operations, we implement circularity practices in the form of 7Rs: Rethink, repurpose, recycle, reuse, reduce, recover and repair. Doing so allows IOI to ensure optimal use of natural resources and achieve high resource efficiency.

### Rethink

- Using EFB for mulching in the plantations instead of being disposed as waste
- Installing biogas facilities to process palm oil mill effluent and converting methane emissions into electricity
- Adopting new process technology e.g. physical ultrafiltration vs. chemical pre-treatment to reduce chemical waste
- Using a thermal oil system for heating instead of water heating systems in IOI Palm Wood
- Using solar thermal systems to heat water instead of fossil fuel for heating

### Repurpose

- Working with third party customers to use byproducts for the generation of biogas, fertilisers and grease to reduce bio-waste disposal
- Convert unused OPT into eco-friendly, sustainable and high-performance palm wood panels for furniture and building industries
- Repurpose used tires by transforming them into creative and functional landscaping features, enhancing the aesthetic appeal and liveability of workers' housing areas
- Joint venture established between IOI Paper Pulp Sdn Bhd. And Nextgreen Global Berhad to develop zero-waste paper pulp plant with EFB as the raw material

### Recycle

- Recyclable items (e.g., paper and plastic) were sent for recycling
- Collaboration with Tetra Pak to recycle used beverage cartons in plantations
- Recycling of effluent wastewater through the reverse osmosis process to recoup water for non-critical use

### Reuse

- Worked with third-parties to reuse wastes as feedstocks for the cement industry and feedstocks for biogas production
- Reused water from operations to feed into cooling towers that function as coolants to reduce the temperature of the processes in the manufacturing plant
- Reusing empty fertiliser bags for waste collection purposes
- Distribution of used computer to Humana schools in Sabah

### Reduce

- Sludge dryer has been installed to reduce water content in sludge by more than 60% thus reducing sludge waste quantity
- Employees are encouraged to bring their own food and drink container when purchasing food in the cafeteria

### Recover

- Installing heat exchanger to recover heat from the HRSG continuous blowdown to heat up reverse osmosis water
- Recover waste heat from thermal oil heater economiser and generate chilled water for packing plant through the use of a vapor absorption chiller
- Rainwater harvesting at housing area for cleaning, gardening, or non-potable use

### Repair

- Only obsolete equipment or equipment beyond repair were disposed
- Regular maintenance and timely repair of machinery and vehicles to ensure operational efficiency and reduce downtime

## WASTE MANAGEMENT

### MANAGEMENT APPROACH

IOI's waste management plan and strategies are guided by the IOI Environmental Management Guidelines. In IOI, effluent management is a crucial element to ensure continuous compliance with national legislation and is also part of IOI's CCAi strategy to reduce GHG emissions from POME. POME and palm oil refinery effluent ("PORE") generated from the production and refining of palm oil, must be treated in accordance with local environmental regulations. In addition to pollution prevention measures, operating units are required to capture and remove the GHGs generated from the POME as part of our strategy to achieve our net zero target.

Scheduled waste is routinely audited during RSPO, MSPO, and OHSAS audits. Internally, the Safety, Health, and Sustainability teams also conduct routine inspections to ensure compliance with the Environmental Quality (Scheduled Wastes) Regulations 2005 in Malaysia and comparable regulations in the countries where IOI operate. Operating units at IOI have pollution prevention plans in place, specifically for securing scheduled waste such as solid and liquid waste, spent hydraulic and lubricant oil, and used chemical containers. These wastes are stored appropriately and disposed of through a licensed agent approved by the local environmental authority at regular intervals, as required by regulation.

Transparency in tracking and declaring waste generated is demonstrated through reporting on the DOE portal, the Electronic Scheduled Waste Information System ("eSWIS"). Several dedicated assistants at the operating units have also undergone Certified Environmental Professional in Scheduled Waste Management ("CEPSWAM") training, becoming competent persons certified by the DOE in waste management. For non-hazardous waste or by products, we always encourage maximising the 7Rs of Circularity concept to minimise waste entering landfills or increase value-added use.

## ACTIVITY DRIVEN PERFORMANCE AND IMPACT

### Plantation and Resource-based Manufacturing Division

In the plantation, the practice of 7Rs to manage our waste resulted in a recycling rate of 98% of non-hazardous waste which is marginally higher than the FY2023 of 97%. The main non-hazardous waste generated in the plantation are largely biomass in nature, for example OPT, PKS, EFB, fronds, POME residues, etc. While they are largely used as organic fertiliser and energy source in the estates, we have also found higher value-added use for them. This is being discussed in the following section.

Meanwhile, oleochemical waste plays a crucial role in Oleo's sustainability KPIs. We monitor scheduled waste, solid waste, and wastewater, striving to reduce these to meet our targets. In fact, the recycling rate of non-hazardous waste for FY2024 is 56% compared to 39% for FY2023. This is due to the oleochemical operations adopting several approaches to recycle and manage their non-hazardous waste such as utilisation of advanced process technologies to reduce chemical waste generation. For example, we are implementing ultrafiltration as an alternative to traditional chemical pre-treatment methods. We are also working with third-party customers to convert side-stream products into biogas, fertilisers, and grease, thus minimising bio-waste disposal. Additionally, we have installed a vapor absorption chiller that recovers waste heat from the thermal oil heater economiser to generate chilled water for our packing plant. This system contributes to our wastewater recovery efforts by utilising effluent from the effluent treatment plant and cogeneration facilities.



OPT Preparation at IOI Palm Wood, Segamat, Johor

## CIRCULAR ECONOMY AND MANAGING NATURAL RESOURCES

### Palm Wood

Every year OPT are being felled from the routine replanting of unproductive oil palms. This waste byproduct or biomass are either burned for energy in the mills or chipped to be decomposed in the field. Such practices emit GHG such as methane and carbon dioxide, contributing to the ongoing climate crisis. Decomposing OPT has also been reported to attract rodents, rhinoceros beetle and promote fungal growth like *Ganoderma* which could affect the newly planted seedlings, and cause basal stem rot.

IOI Palm Wood Sdn Bhd (“IOIPW”) presents an innovative solution that adds value to this vast byproduct waste by repurposing this biomass into palm-based wood panels. This circular approach to managing waste helps us reduce emissions from the natural decomposition of OPT and mitigate plant disease outbreaks by harvesting the OPT. In addition, the utilisation of this repurposed OPT can serve as an alternative wood source to that derived by harvesting our forests.

The branded ‘OnCore’ palm wood, can be sold and used for the construction and furniture industry. This process, also locks sequestered carbon into the products, aiding our journey towards net zero. As consumers are pivoting towards more sustainable materials, the global demand for timber and related products is also expected to rise. IOIPW is well positioned to leverage on the supply gap via its supply of OnCore panels, this is in line with the strategic priority of expanding IOI’s non-CPO segment. Since commencing production in 2023, IOIPW has completed multiple local and international orders, which is a testament to market demand for sustainable, palm-based wood products.

### EFB as Raw Material for Pulp and Paper Production

Conventionally, EFB was treated as a waste product to be mulched and applied in estates as organic fertiliser. In pursuit of continual innovation, IOI Paper Pulp Sdn Bhd established a joint venture with Nextgreen Global Berhad to transform EFB into paper pulp. Doing so allows IOI to convert waste into valuable raw materials while avoiding emissions generated from decomposition of EFB in the field. This proposed development marks the first large-scale, zero-waste paper pulp facility with EFB as the raw material and is expected to have a production capacity of 150,000 metric tonnes of paper pulp per annum. Thus, the joint venture is well-positioned to provide an alternative to timber-based paper pulp products like tissue paper, premium packaging paper, pulp moulded packaging and more in light of increasing demand for sustainable materials.



Operation at IOI Palm Wood

### Collaboration with Tetra Pak to Collect and Recycle Used Beverage Cartons (“UBC”)

IOI has partnered with Tetra Pak since October 2022 to enhance the recycling and sorting of UBC across its operations in Peninsular Malaysia. It was the first-ever collection effort of its kind within the plantation industry with the specific aim to promote circularity, reduce landfill waste, lower greenhouse gas emissions, and foster a culture of recycling. This collaboration was formalised through a Memorandum of Understanding (“MoU”) that was signed on 26th April 2024. The MoU also represents a significant milestone for IOI by expanding the programme from Peninsular Malaysia to Sabah.

This multi-faceted approach to recycling includes organising beverage carton recycling awareness programmes, integrating UBC collections into the existing recycling programme, and organising a UBC Collection Competition within IOI Plantation’s 31 operating units across Peninsular Malaysia. The programme’s designated collection partner, KPT Recycle, plays a pivotal role in facilitating the collection process of UBCs.

Through this project, over 18,000 UBCs were collected with recycling proceeds distributed to participating employees as an incentive. The project not only intends to provide an additional income stream for employees, but also to cultivate a habit of recycling and culture of waste reduction among employees. This collaboration highlights IOI’s efforts for a just transition, across different levels of the management to ensure that our people could also benefit in our journey to a low-carbon economy.

The event also witnessed the prize-giving ceremony for the winners of the UBC Collection Competition organised during the campaign. From March to September 2023, a total of 18,397 UBCs were collected from over 2,700 participating

employees among the 31 operating units of IOI Plantation in Peninsular Malaysia. The competition featured two categories: intra-region and inter-region, with 15 individual winners for the intra-region category and three estate winners for the inter-region category.

This collaboration between IOI and Tetra Pak underscores IOI’s commitment to sustainability and circularity. By fostering a culture of recycling and actively engaging its employees and stakeholders, IOI continues to make significant strides in environmental preservation and resource conservation.

## WATER MANAGEMENT

### MANAGEMENT APPROACH

In terms of the governance of water-related matters, the Group’s water stewardship falls under the purview of our BSC and senior management team. We have annually-reviewed water management plans covering all operations. As water-related risks are interlinked with climate change, our water risk assessment is integrated into our wider, climate-related physical and transition risk assessment. These practices allow flexibility in the mitigation and adaptation of climate-related impacts on water availability and quality.

As a proof of commitment towards water stewardship, we recently launched the IOI Group Water Policy. The policy is centred around 3 fundamental pillars of compliance, performance and transparency.

Key points of the policy include:

- Compliance to water-related legislations and requirements
- Conduct water risk assessments to identify risks and opportunities
- Continuous improvement of water stewardship through the adoption of water-efficient technologies and processes
- Communicating our water policy and its revisions to all operations and supply chain
- Communicating our performance on water-related metrics

### ACTIVITY DRIVEN PERFORMANCE AND IMPACT

Through our climate-related physical risk assessments, none of our sites are currently at risk of water stress. However, this risk is expected to gradually increase in importance due to climate change. Through our climate-related risk assessment, we identified manufacturing facilities in Sandakan and Johor that will be more vulnerable to water stress in the coming years. Thus, these facilities have been equipped with water recycling systems, rainwater harvesting systems and contingency plans in case of water shortage.

In FY2024, we recorded an average water intensity of 3.57m<sup>3</sup>/MT product, a decrease from 3.97m<sup>3</sup>/MT product. The average water intensity was calculated according to GRI’s recommendations. Due to the nature of measurement and instrumental limitations, the value includes slight variance due to environmental factors. Moving forward, we intend to improve the accuracy of water-related measurement methodologies for more precise benchmarking and target setting. In efforts to reduce our water withdrawal, we will continue our efforts to embark on water conservation initiatives as communicated in our IOI Group Water Policy.

Extended periods of droughts and heatwaves negatively impacts plant vitality and yield. To counter this, we practice land irrigation of palm oil mill effluent and EFB mulching, enabling us to increase soil moisture retention while reducing chemical fertiliser use. We encourage the growth of cover crops to minimise exposed soil in our estates. Not only does this reduces soil erosion and water pollution in water bodies, cover crops increase moisture retention, conserving green water for crops to use.



Tetrapak engagement with IOI's employees

## CIRCULAR ECONOMY AND MANAGING NATURAL RESOURCES

Our resource-based manufacturing division requires large quantities of treated water. To minimise our impact on local water availability, various water recycling systems were implemented. For example, our manufacturing facilities in Penang are installed with water recycling systems that redirects reject water from our reverse osmosis facilities to cooling towers. In FY 2024, these systems had saved over 207,206 m<sup>3</sup> of water. As for our Sandakan manufacturing facilities, PORE was treated and recycled. Rainwater harvesting systems were also installed across our facilities, providing an additional water source for activities like cleaning. In case of water disruptions, our manufacturing plants also have facility prioritisation plans and reserve tanks as temporary mitigation measures to minimise the likelihood of production disruptions. IOI constantly looks into innovative solutions to reduce our water footprint. For example, our recently established IOI Palm Wood incorporated a thermal oil system for heating, replacing conventional steam boilers for heating. Thus, water is only used for sanitary activities.

Water stewardship encompasses both the management of water quantity and quality. In FY2024, we have recorded one incident of water quality-related non-compliance. Responding to this, an internal investigation was launched and corrective actions were taken. We continue to conduct annual audits on our mill effluent water quality to ensure discharges adhere to the requirements in our group environmental impact assessment and local regulations. These emission limits typically fall in the range of 20-100 mg/l of biological oxygen demand, subject to the licenses provided by local authorities. Other precautionary measures implemented includes the installation of early warning systems in our refinery's PORE system to alert staff about malfunctions.

### SOIL MANAGEMENT

#### MANAGEMENT APPROACH

IOI appreciates the critical importance of ongoing research and thorough monitoring of soil health to ensure the sustainability of our agricultural practices. As part of our commitment to regenerative agriculture, IOI operates research centres across various regions, where our teams regularly conduct comprehensive soil analyses. These evaluations help us assess nutrient levels, soil composition, and overall health, enabling us to develop practical recommendations. By offering essentials guidance on restoring soil nutrients and improving its health, we aim to enhance long-term productivity, preserve ecosystem balance, and contribute to the resilience of our agricultural

landscapes. In our plantations, we are committed to embracing a regenerative culture and the principles of circularity.

#### ACTIVITY DRIVEN PERFORMANCE AND IMPACT

This involves converting biomass waste into valuable organic matter that is applied to the land, enhancing soil fertility and structure. By using POME in our land application practices, we contribute to a balanced soil composition, which improves soil health and provides essential moisture that supports plant growth.

We also maximise the benefits of land application by effectively utilising various forms of biomass waste, including EFB and frond heaps. These materials play a crucial role in retaining soil moisture and preventing the leaching of nutrients, which are vital for maintaining soil productivity over time.

In addition, we plant legume cover crops as part of our soil management strategy. These cover crops are specifically chosen for their ability to restore soil nutrients, enhance moisture retention, and improve soil structure. This approach is particularly valuable for mitigating the impacts of prolonged droughts and adapting to potential climate change risks, such as increased occurrence of heatwaves. By integrating these practices, we aim to build resilient agricultural systems that support long-term sustainability and environmental health.

As a result of implementing sustainable regenerative agricultural practices that focus on soil health, IOI has introduced organic oil palm planting. Please refer to page 57 for more information on IOI's organic palm oil.



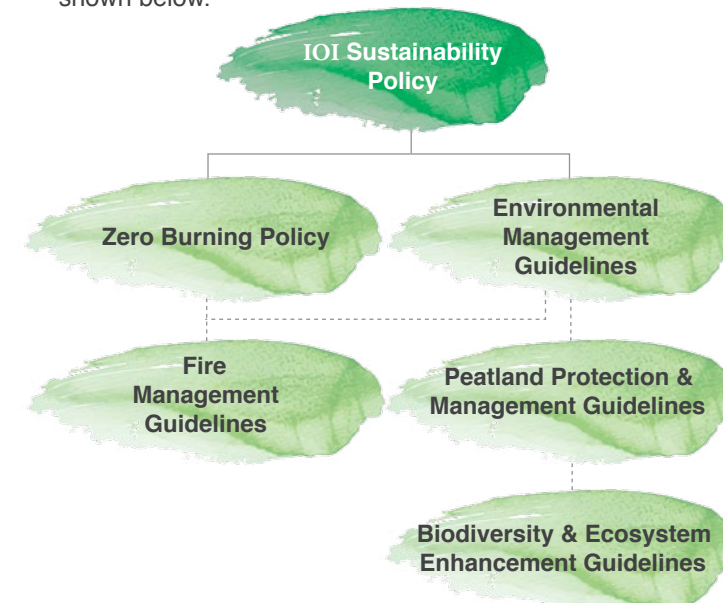
Practicing regenerative agriculture at IOI organic palm estate

## Safeguarding NATURAL ECOSYSTEMS

Natural resources like water and soil nutrients play a central role in the cultivation of oil palms while enabling the manufacturing processes core to IOI's business. Hence, the health of the ecosystems in areas where we operate plays an influential role in our business performance. Climate change is also expected to exacerbate existing physical risks which may threaten to destabilise ecosystem services that the surrounding communities and our operations rely on.

#### MANAGEMENT APPROACH

Safeguarding natural ecosystems starts with responsible land use and soil management. It is further guided by the IOISP and best agricultural practices and guidelines as shown below.



Last year, we updated our Biodiversity and Ecosystem Enhancement Guidelines to include additional guidance on ecosystem rehabilitation. The guideline covers all IOI Plantation operational sites, including HCV, HCS areas and other conservation areas that we identify within our plantation operations. This guideline will also be used as a reference for our suppliers to develop their biodiversity policies and implementation of best practices.

Soil management is central to any agricultural practice and we commit to applying best management practices for soil management covering all soil types. This includes reducing the use of agrochemicals and maintaining cover crops to naturally enrich soil, retain nutrients and moisture.



Reforestation activity at buffer zone in Sabah Estate

#### ACTIVITY DRIVEN PERFORMANCE AND IMPACT

IOI conducted comprehensive HCV and HCSA assessments in full compliance with RSPO requirements. The identified HCV-HCS areas were set aside and carefully managed with a proactive approach to prevent any potential damage from internal or external stakeholders, such as unauthorised land use, encroachment, or fire.

To further safeguard these sensitive areas, IOI strengthened its monitoring efforts by adopting cutting-edge technologies. These include satellite monitoring to track land changes in near real-time, drone surveillance for detailed, high-resolution aerial imagery, and smart patrolling systems to enable more efficient ground monitoring and data collection. Additionally, IOI is working closely with local communities, leveraging their on-the-ground knowledge and involvement to ensure the continued protection of HCV and HCS areas, particularly those situated near settlements and adjacent forest reserves. By integrating these advanced tools with local collaboration, IOI aims to proactively prevent damage caused by illegal logging, forest fires, and other forms of environmental degradation, contributing to the long-term sustainability of both the environment and the livelihoods of local communities.

The existing conditions of HCV-HCS areas can significantly affect how natural ecosystems function and respond as they play a crucial role in maintaining ecological balance, supporting biodiversity, and regulating carbon storage. Understanding their critical role and the impact they have on the natural ecosystem, IOI implements comprehensive strategies to enhance and rehabilitate these ecosystems when required.

## SAFEGUARDING NATURAL ECOSYSTEMS

One key initiative involves collaborating with the *Orang Asli* at Bukit Leelau to rehabilitate and rewet HCV and peat areas. This effort aims to revive degraded peatlands, which are crucial not only for carbon sequestration and habitat restoration but to also prevent peat fires.

In Kalimantan, IOI is focusing on planting indigenous forest trees within the HCV-HCS areas at our concessions. This initiative is designed to increase forest cover, support wildlife, and enhance ecosystem resilience by reintroducing native species that are well-adapted to the local environment.

In Sabah, IOI is actively setting aside identified HCV areas to safeguard critical habitats and protect against deforestation and other environmental threats. These efforts are part of our broader commitment to ensure the long-term health and sustainability of natural ecosystems, and to support Sabah’s landscape conservation goals.

As of FY2024, we are conserving and protecting a total of 6,343.21 ha as conservation areas and 2,882.36 ha as HCV areas. There have been slight changes to the total hectareage due to the sensitivity and improvements made to our measuring tools.

Type of areas	Malaysia	Indonesia	Total area
HCV Areas (Ha)	1,366.67	1,515.69	2,882.36
Other set-aside conservation areas (non-HCV) (Ha)	3,542.43	2,800.78	6,343.21

### PEAT MANAGEMENT

Carefully managed peatlands can reduce risks of flooding and droughts around its ecosystem and ensure sequestered carbon remains locked underground. This objective is aligned with IOI’s Pathway to Net Zero and will remain of high importance as IOI moves towards decarbonisation. Management of our peat areas are guided by IOI’s Peatland Protection and Management Guideline, which provides guidance on peatland monitoring and fire prevention activities. We also collaborate with experts, community leaders and civil society organisations to ensure our practices are science-based; balancing environmental, social and economic performance. As of FY2024, we are actively managing 3,849.75 ha of peat areas that were previously planted with oil palm while monitoring 2,778.56 ha of our undisturbed peatland in Indonesia. As the maps were updated regularly, slight variances in the reported figure may occur.

### FIRE MANAGEMENT

Wildfires not only cause habitat loss and threaten the safety and health of communities and workers, they may cause severe damage to crops, equipment and release locked carbon within the soil. Thus, IOI takes proactive fire management and prevention practices by conducting fire drills and regular communication of fire prevention SOPs for employees. IOI is committed to zero burning in its operations, guided by our Zero Burning Policy and this is regularly communicated to all our suppliers via IOI’s Responsible Sourcing Guidelines. IOI constantly monitors its concessions for potential fire hotspots using NASA FIRMS remote sensing system and RSPO’s Hotspot Hub. In our Indonesian operations where wildfires are more likely to occur, guard posts and fire towers were installed at priority risk zones to scout for potential fires. We outline fire risk zones (high, medium, low) with different fire mitigation activities in place to prevent fires spreading into our estates. Within our estates, we categorise areas of different fire risks (red, orange, yellow, green). The categorisation is based on historical records of fire incidence and current condition. For FY2024, 14 incidences of wildfires were reported across our operating areas while 87 of wildfires occur close to, but outside our concessions.

### POLLUTION CONTROL

#### IOI’s Mills and Estates

At IOI, we have adopted a range of IPM methods to reduce our use of agrochemicals in our estates. Our IPM practices include planting a variety of beneficial species that attract natural predators, thereby reducing our reliance on chemical pesticides that may contribute to pollution to the environment.

In addition to our pest management strategies, we focus on optimising the use of by-products from our palm oil mill operations. We make full use of POME residues and biomass waste, such as EFB and frond heaps, to enhance soil fertility. This approach not only helps to nourish the soil but also reduces our heavy dependence on inorganic fertilisers which have been known to leach into nearby waterways, especially during heavy rains or floods.

To minimise the risk of chemical pollution, we ensure proper management and disposal of hazardous chemicals and their containers. This process includes cleaning the containers using the triple rinse method and returning them to licensed waste collectors, who then transport the waste in an appropriate and environmentally-friendly manner.

In parallel with our waste management practices, our mill operations maintain stringent standards to ensure compliance with the local regulations. We closely monitor stack emissions from our facilities to ensure they meet all required emission limits, thus minimising air pollution.

Effluent from our mill operations is treated rigorously in adherence to national environmental regulations. We monitor the BOD of the effluent, a key indicator of nutrient pollution, on a regular basis. This ongoing monitoring allows us to promptly address any issues and ensure that the effluent remains within acceptable limits, further safeguarding the environment and public concerns.

#### IOI’s Resource-based Manufacturing Operations

In our resource-based manufacturing operations, we prioritise wastewater treatment in compliance with local legislation to reduce our impact in terms of pollution. Effluent discharge is regulated by authorities, with the primary concern being the COD values. The company has introduced several enhancements in effluent treatment technology to tackle this issue because product spillage can elevate COD levels, especially if it contains oily substances as oxygen exchange in waterways can be hindered and can subsequently impact aquatic life. Therefore, it is essential to ensure proper effluent water treatment before discharging into waterways.

We ensure effluent discharge from our resource-based manufacturing facilities not only meet the mandatory Standard B (under 200 ppm COD), but also surpasses Standard A requirements by halving the mandatory COD discharged. Additionally, the company engages in CSR projects, such as involving employees and their families in producing mudballs that contains effective microorganisms to help improve the water quality of riverways.

#### Product-based LCA

IOI has embarked on a project in collaboration with our customer, Bunge Lodders Croklaan, to carry out a comprehensive LCA of IOI’s segregated products that are purchased by our customers. This LCA aims to evaluate the environmental impacts and GHG emission of these products throughout their entire life cycle, from raw material extraction through to disposal or recycling. This independent 3rd party assessment will be conducted in accordance with ISO14040, which provides the framework for LCA and ISO14044, which specifies requirements and guidelines for LCA and inventory analysis.



Safety Campaign at Pamol Palm Oil Mill, Sabah

The scope of the analysis will cover all 13 IOI Identity Preserved mills, including their associated supply bases and estate operations. This means that every stage of the production process, from the sourcing of raw materials through the various stages of manufacturing up to the final product delivered to the refinery, will be evaluated. The study intends to define the values of GHG emissions for 1 MT Segregated (“SG”) CPO, SG refined, bleached & deodorised palm oil and Organic CPO. We expect to produce a detailed analysis report by the next financial year.

#### No Deforestation Commitment and Monitoring

Since 2016, IOI has adhered to a moratorium on deforestation that includes several key elements: preventing deforestation, creating traceable and transparent supply chains and protecting peat areas. To further strengthen our commitment towards no deforestation, IOI has a comprehensive set of policies, internal best practices, and guidelines. They are:

Responsible Sourcing Guidelines	Peat Management Guidelines	Biodiversity and Ecosystem Enhancement Guidelines
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To ensure “No Deforestation” takes place within our supply chain, we emphasise on monitoring. We do this by leveraging on technology to ensure that we can effectively track and manage deforestation risks. Our approach includes:

Satellite monitoring	Close engagement with suppliers	Data integration and analysis
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These measures are integral to our strategy for ensuring compliance with our policies on no deforestation. By adopting these comprehensive monitoring practices and fostering strong partnerships with our suppliers, we aim to demonstrate our readiness and commitment to meeting stringent regulations such as the EUDR.

# Enhancing Biodiversity AND ECOSYSTEM

## BIODIVERSITY PROTECTION AND CONSERVATION

### OUR MANAGEMENT APPROACH

Protecting biodiversity in and around our operations ensures optimal ecosystem functions. In terms of biodiversity and ecosystem conservation, IOI's operational practices are guided by our IOISP and the Biodiversity & Ecosystem Enhancement Guideline. Similarly, biodiversity risk assessments will be carried out for potential new operations in alignment with the HCV-HCS Assessment Manual and IOI's Group Environmental Impact Assessment. For areas identified as degraded, enrichment planting according to our Biodiversity & Ecosystem Enhancement Guideline will be conducted. Our environmental conservation and management practices supports the Kunming-Montreal Global Biodiversity Framework 2050 Goals and 2030 Targets by ensuring production areas are managed sustainably (Target 10) while minimising negative impacts on biodiversity (Target 8).

Across all operating sites, we encourage natural regeneration, conduct maintenance and enrichment planting along our riparian and forest buffer to minimise edge effects while conserving native wildlife and vegetation. Protecting habitats are fundamental for biodiversity conservation. IOI builds on this by conducting regular wildlife surveys to record the abundance and diversity of wildlife found within our estates. A list of species observed within our estates can be accessed through scanning the QR code on page 105.

### ACTIVITY DRIVEN PERFORMANCE AND IMPACT

Apart from outlining conservation areas and monitoring biodiversity in our concessions, IOI is involved in landscape projects in efforts to promote conservation and sustainable management for environmental protection, biodiversity conservation and more. Among the examples are the Bukit Leelau mini landscape project and the South Ketapang landscape initiative.

#### Bukit Leelau Mini Landscape project

The Bukit Leelau Mini Landscape project has its roots back in 2018, as a collaborative project with the Pahang state government, indigenous community leaders and civil society organisations. Though the project falls outside of our Bukit Leelau operations, we supported the initiative as part of a multistakeholder approach to fire prevention, forest and peat rehabilitation and community empowerment. As a result, there have been 0 peat fire incidences reported from the area in the past 5 years. The absence of wildfires translates into longer periods for wildlife to establish and flourish. Thus, the communities have also reported improved fishing conditions, indicating that the landscape's ecosystem services were flourishing. While the project was deemed concluded, IOI continues to monitor and conduct community engagements in the joint interest of fire prevention, community livelihood enhancement and biodiversity conservation.

#### South Ketapang Landscape Initiative

The South Ketapang Landscape initiative was first launched in October 2018 to promote biodiversity conservation, strengthen fire, water and peat management practices in the fire-prone landscape. The initiative was a result of collaborative efforts between IOI, IDH Indonesia, the local wildlife department, community leaders and civil society organisations. It was envisioned that through this initiative, roughly 25,000 ha of forests and ecosystem can be



Tree planting project at IOI Lahad Datu Region, Sabah

protected while promoting sustainable land management practices to neighbouring growers and smallholders. To achieve this, community engagements were conducted as part of knowledge exchange where biodiversity conservation and land management practices can be supported by both traditional knowledge from communities and best practices from the industry. Trainings will continue to be implemented to upskill IOI, local wildlife department staff and forest communities, equipping them with the skills to implement better wildlife conservation and land management practices.

Discussions are currently underway to conduct a livelihood assessment to monitor the project's progress on social indicators. Leveraging on our efforts of rehabilitating set-aside peat and conservation areas, a carbon stock assessment is being planned to better understand the effectiveness of the project's rehabilitation and habitat conservation actions.

#### Achieving Co-existence with Elephants

For the past few years, IOI has actively engaged in a collaborative project with the MEME, the wildlife department, other palm oil companies, smallholders and communities collaborative to reduce and manage HECs. The project facilitates knowledge sharing among corporates and communities to alert instances of elephant sightings and mitigative procedures to reduce HECs.

This financial year, we signed a letter of extension to the agreement. IOI contributed by providing insights on innovative solutions to reduce HECs, stressing the need for wider cooperation and the alignment of conservation goals with different industry players across the landscape for effective implementation. Moving forward, we are exploring the option of establishing strategically-located food banks along identified elephant movement trails. These food banks would provide a sustainable, supplementary food source for the large mammals, reducing their need to enter human settlements, particularly local communities and smallholder farms, in search of food. This approach not only protects both wildlife

and local communities but also supports our landscape goals of promoting biodiversity and fostering peaceful coexistence between humans and wildlife.

#### Collaboration with Seratu Aatai for Wildlife Monitoring

To ensure that our operations have minimal impact on local wildlife, IOI has partnered with Seratu Aatai, the Sabah Wildlife Department, and civil society organisations like HUTAN. Together, we are promoting capacity building, knowledge sharing, and active conservation efforts including research and monitoring that aim to protect the region's rich biodiversity while supporting coexistence landscape.

This financial year, as part of our conservation initiative, we installed four camera traps near the boundaries of forest reserves and our estates to provide insights into the distribution, behaviour, and movement patterns of key RTE species, such as elephants, orangutans, and others. This data is crucial for informing future conservation strategies, as it helps us understand how these species interact with their environment and how best to mitigate any potential human-wildlife conflicts.

Currently, Seratu Aatai is working closely with us to develop a practical SOP for managing pygmy elephant herds within the oil palm landscape in Sabah. The SOP aims to outline clear, humane, and effective guidelines for managing these human-elephant interactions safely while minimising disruption to plantation activities. This collaboration is a vital step in our ongoing commitment to protecting biodiversity and ensuring sustainable coexistence between agricultural development and wildlife conservation in Sabah.

#### ReLeaf Project Updates

Since 2022, IOI has partnered with one of its key supply chain partners, Nestlé, to reforest buffer zones within our estates' conservation areas, an initiative aimed at enhancing environmental protection, enhance carbon sequestration and community engagement. The project focuses on planting native tree species that are well-adapted to the local ecosystem, ensuring the reforestation efforts contribute to biodiversity enhancement.

As an added social environmental benefit, all seedlings are sourced from local communities located near the project sites. This not only supports the local economy but also cultivate a sense of ownership and involvement among community members in conservation activities.

As of FY2024, more than 100,000 trees have been successfully planted across 35 ha. To ensure the long-term success of the reforestation project and maximize the survivability of the seedlings, careful maintenance is carried out every three months. This includes clearing competing vegetation, monitoring for pests and diseases, and providing any necessary supplemental watering, especially during dry periods. These maintenance activities are crucial for ensuring that the young trees can establish themselves and thrive, thereby contributing to the project's overall success and objective of creating natural buffers that protect surrounding ecosystems and increase carbon sequestration.

#### Biosphere project

IOI was invited to participate in the development and formulation of the Biosphere project in the lower Kinabatangan areas, that was aimed to integrate ecological, social, and economic factors to create a sustainable and resilient environment. As a key stakeholder in this region, IOI is deeply committed to enhancing the local ecosystem through landscape-level approaches.

A major focus of the Biosphere project is the development of practical and actionable management plans to protect and preserve the rich biodiversity along the Kinabatangan river. To support these efforts, IOI is not only collaborating with other stakeholders but is also taking independent actions to further reforest conservation areas within our own concessions. This initiative can help restore and connect fragmented habitats, creating ecological corridors that can facilitate wildlife movement, and enhance overall habitat connectivity along the Kinabatangan river.

In this context, IOI, along with Proforest, the SaBC, and HUTAN, is actively working to advocate for the lower Kinabatangan areas to be designated as a UNESCO World Heritage Site. This recognition would not only honour the ecological significance of the region but also enhance its protection and conservation efforts on a global scale.

#### Laran Tree Planting

As part of our sustainable approach to land management, IOI seeks opportunities to enhance and rehabilitate degraded and flood-prone areas. A notable example of this commitment is our initiative to plant 84 hectares of Laran trees at a particularly flood prone area in Syarimo 4 estate. The Laran trees, known for their rapid growth and resilience in flood-prone environments, have played a crucial role in rehabilitating these areas. By introducing this tree species, we have not only improved soil biodiversity but also enhance the ecological function of the land. The successful establishment of this natural ecosystem has had a significant positive impact, creating thriving habitats for wildlife such as sambar deer, long-tailed macaques, Bornean bearded pigs, and rufous-tailed shamas. Additionally, we are planting fruit trees to provide nutritious resources for the wildlife residing in these areas. These initiatives not only support biodiversity enhancement and ecosystem improvement but also contribute to increased carbon sequestration, helping us to achieve our climate goals.