

An aerial photograph of the Mandai Wildlife Group. The image shows a vast area of lush green trees and vegetation. In the center and right, there are several large, modern buildings with unique, curved, metallic roofs. To the left and in the background, there are large, open-air enclosures covered with fine mesh netting, supported by tall poles. A road with a parking lot is visible on the right side. The overall scene is a blend of natural greenery and modern architectural structures.

Mandai
WILDLIFE GROUP

Inaugural

Sustainability Report FY23/24

Contents



INTRODUCTION

- 03** Message from the Acting Chairman and GCEO
- 04** About Mandai Wildlife Group & About this Report

SUSTAINABILITY AT MANDAI WILDLIFE GROUP

- 06** Materiality Assessment
- 07** Sustainability Framework
- 09** Park Overview and Sustainable Design Elements
- 10** Sustainability Highlights & Awards
- 11** Sustainability Governance
- 12** Stakeholder Engagement

PLANET

- 15** Biodiversity Protection and Management
- 20** Animal Welfare and Life-Sciences Research
- 24** Sustainable Operations Management
 - Energy and Greenhouse Gas (GHG) Management
 - Material Efficiency, Circularity and Waste Management
 - Water and Effluents Management
 - Climate Change Resilience and Adaptation

PEOPLE

- 39** Community Engagement and Advocacy
- 43** Visitor Health, Safety, Experience and Satisfaction
- 45** Employee Health, Safety and Well-being
 - Employee Well-being
 - Workplace Health and Safety
 - Diversity, Equity and Inclusion
 - Talent Management and Development
- 49** Corporate Governance and Ethics

PERFORMANCE

- 52** Economic Value Creation
- 56** Sustainable Supply Chain Management
- 59** Innovation and Technology

APPENDIX: Data & Reporting Frameworks

- 63** Definitions and Methodologies
- 72** Data Tables
- 79** GRI Content Index

Building a world where people and wildlife thrive together



Chong Siak Ching
Acting Chairman,
Mandai Wildlife Group



Mike Barclay
Chief Executive Officer,
Mandai Wildlife Group

“With our Net-Zero targets approved by the Science Based Targets initiative (SBTi), we will continue to focus on integrating sustainability into every aspect of our business, from our daily operations to our long-term planning.”

As we reflect on the past year, we take pride in the resilience and dedication that have defined our operations. The Group has overcome a number of challenges to achieve significant milestones in advancing our sustainability agenda. This reflects our shared commitment to act with purpose and passion to build a world where people and wildlife thrive together.

In preparing for the publication of this inaugural sustainability report, we carefully selected which material Economic, Environmental, Social and Governance (EESG) matters to report. These included enhancing experiences for our guests, strengthening our conservation efforts and deepening our community engagement. We recognise that our sustainability journey will be challenged by the evolving global threats, from the impacts of climate change to the risks posed to natural habitats and wildlife from human-related activities and pollution. Yet, this difficult context serves to strengthen our resolve to innovate and adapt, ensuring that our operations

remain robust and sustainable, while we expand the positive impact of our conservation work across the region. Above all, we will continue to advocate for protecting nature and wildlife, while promoting sustainable practices and lifestyle choices.

Our Board of Directors plays a vital role in steering our sustainability strategy. Through their collective oversight, they ensure that sustainability remains a core consideration in our operations and strategy. The Board identifies the material EESG factors most relevant to our business and stakeholders, while overseeing the effective management and monitoring of these factors. Their leadership ensures the successful execution of our sustainability initiatives across the Group.

In our pursuit of a low-carbon future, we aim to achieve Net-Zero GHG emissions for Scope 1 and 2 by 2040, and for Scope 3 by 2050. Our targets, approved by the SBTi, align with limiting global warming to 1.5°C. We are

proud to be the first zoological institution globally, and the first Singapore-based tourism organisation, to have our Net-Zero targets approved by SBTi. Additionally, we are leveraging technology and innovation to create immersive and educational experiences for our guests, while enhancing our operational efficiency.

In the coming year, we will build on our successes and continue to enhance our environmental sustainability practices. Our forward-looking plans include further integrating sustainability into our supply chains, enhancing the resilience of our operations to climate-related risks and expanding our community outreach and conservation efforts in Singapore and the region.

We wish to express our gratitude to our staff, partners and stakeholders for their continuous support and for working together for a more sustainable future.

About Mandai Wildlife Group

Our Business

Mandai Park Holdings Pte. Ltd. is a privately owned organisation headquartered in Singapore comprising the following subsidiaries and related companies:

- Wildlife Reserves Singapore Pte. Ltd.
- Singapore Zoological Gardens
- Mandai Park Development Pte. Ltd.
- Mandai Resorts Pte. Ltd.
- Mandai Global Pte. Ltd.
- Sundaland Resorts Pte. Ltd.

The organisation, along with its subsidiaries, are collectively known as Mandai Wildlife Group.

Mandai Nature Fund Ltd. and Mandai Nature International Ltd. form Mandai Nature, the conservation arm of Mandai Wildlife Group.

Mandai Wildlife Group's Conservation Ethos

At Mandai Wildlife Group, our dedication to the planet is reflected in our purpose to build a world where people and wildlife thrive together. We are steadfast in protecting wildlife and their habitats, with biodiversity conservation being fundamental to our operations. Through advocacy and education, we aim to inspire collective action for a healthier world. Our vision is to create meaningful connections and experiences that inspire people to protect nature and wildlife.

We are the steward of Mandai Wildlife Reserve, a unique wildlife and nature destination inside Singapore's Central Catchment Nature Reserve, and home to world-renowned wildlife parks. We provide a 'window into the wild', inspiring guests through the fascinating world of wildlife. The Group is committed to connecting people with wildlife and championing sustainable living, as well

as participating in and supporting conservation efforts to safeguard wildlife and their habitats. The actions and contributions of the Mandai family of entities and brands are also aligned to the United Nations (UN) Sustainable Development Goals (SDGs) and the SBTi Net-Zero standard.

Making an Impact Across the Region

Our conservation arm, Mandai Nature, focuses on protecting threatened species, protecting and restoring ecosystems, and creating benefits for local communities. We provide funding and ex-situ support to Mandai Nature for their conservation work across Southeast Asia.

Mandai X, our growth accelerator arm, aims to spark, catalyse and accelerate innovative ventures in new domains that can facilitate growth and impact at scale.

The wildlife parks managed by the Group, namely Singapore Zoo, Night Safari, River Wonders and the newly opened Bird Paradise, are accredited by two of the top international regional zoo associations, European Association of Zoos and Aquaria (EAZA) and the Zoo and Aquarium Association of Australasia (ZAA). The Group is an active member of the Southeast Asian Zoo and Aquarium Association (SEAZA) and the World Association of Zoos and Aquariums (WAZA).

Joining Global Forces for Good

We are a member of the Global Sustainable Tourism Council (GSTC); the Global Compact Network Singapore (GCNS), which is the Singapore Chapter of UN Global Compact (UNGC); the Singapore Alliance for Sustainable Palm Oil (SASPO); the Roundtable for Sustainable Palm

Oil (RSPO); the Climate Action SG Alliance (CASA), as well as a founding member of the National Sustainable Procurement Roundtable (NSPR).

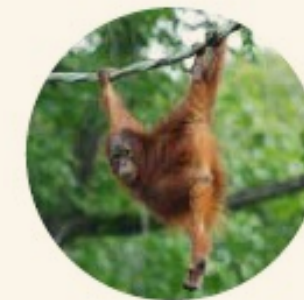
Purpose

Building A World Where People and Wildlife Thrive Together.

Vision

To create meaningful connections and experiences that inspire people to protect nature and wildlife.

Values



Excellence
We strive for the highest standards in all we do.



Integrity
We are honest and fair in all our dealings.



Teamwork
We achieve more together.



Care for Wildlife
We protect wildlife and provide excellent care for our animals.



Hospitality
We serve from the heart.



Sustainability
We embrace sustainable best practices.

About this Report

This Sustainability Report by the Mandai Wildlife Group is our inaugural sustainability report and will be published annually in conjunction with our Mandai Wildlife Group Yearbook. It covers the EESG principles, initiatives and performance of the Mandai Wildlife Group in the financial year (FY23/24) from 1 April 2023 to 31 March 2024.

Reporting Scope

The scope of this report includes Mandai Wildlife Group, Mandai Nature, and Mandai X. We have prepared this report with reference to the disclosure requirements of the Global Reporting Initiative (GRI) Standards and have also drawn upon the UN SDGs. As a signatory to the UNGC, we adhere to the 10 Principles.

All sustainability data and information disclosed in this report relate to Mandai Wildlife Group, unless stated otherwise. While the EESG data presented has been reviewed internally, Mandai Wildlife Group is also exploring future considerations for external assurance when our sustainability reporting matures. Nonetheless, GHG emissions for FY23/24 has been verified by a third-party auditor, SGS International Certification Services Singapore Pte Ltd, in accordance with the ISO14064-3:2019 standards.

This report should be read in conjunction with our [Yearbook 2023/24 here](#) and [Mandai Nature's Impact Report 2024 here](#) and other sustainability-related disclosures on our [website](#).

Feedback

As part of our ongoing commitment to sustainability and stakeholder engagement, we welcome all feedback and input from our stakeholders to help us strive for excellence in every aspect of our sustainability journey.

Your feedback is important, and we invite you to share your comments and feedback with us at sustainable.solutions@mandai.com.

Sustainability at Mandai Wildlife Group

In this section

- 06** Materiality Assessment
- 07** Sustainability Framework
- 09** Park Overview and Sustainable Design Elements
- 10** Sustainability Highlights & Awards
- 11** Sustainability Governance
- 12** Stakeholder Engagement

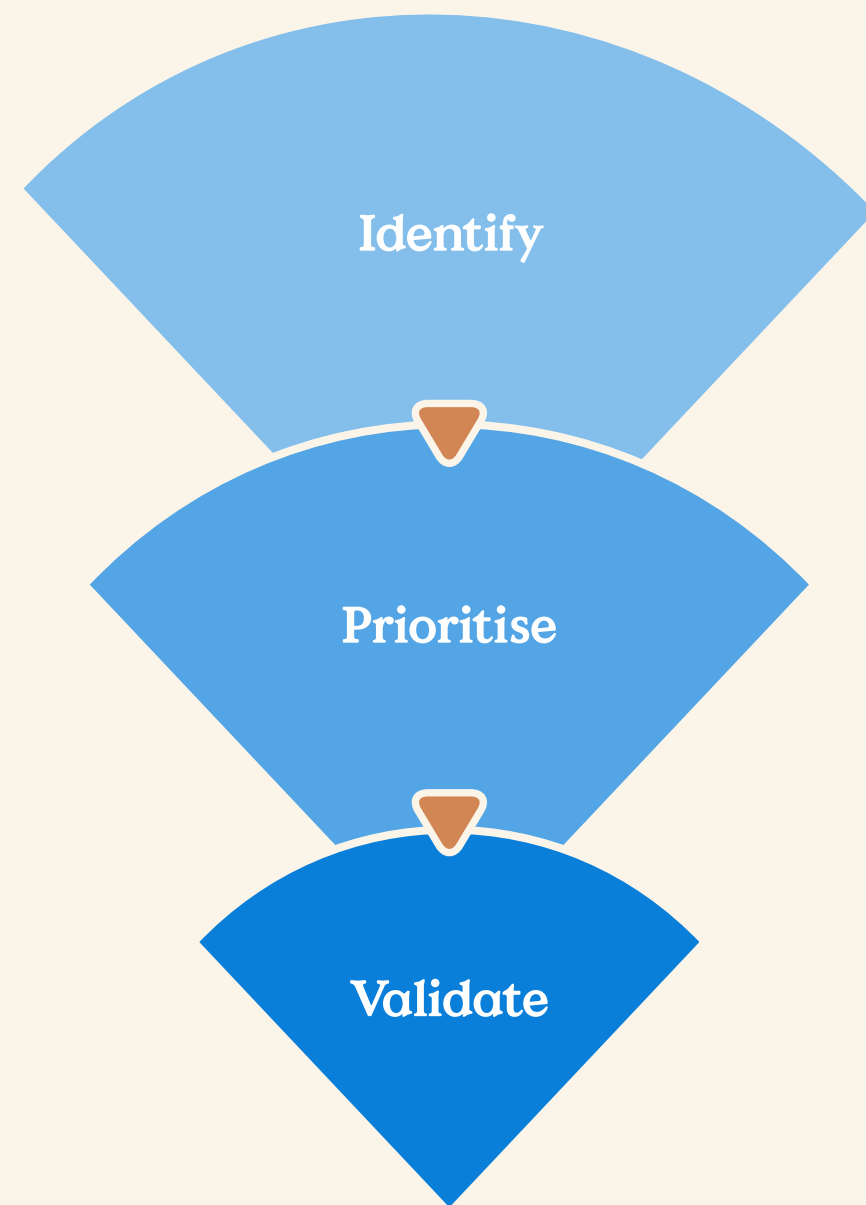
Mandai Wildlife Group's eco-friendly architecture incorporates green roofs, enhancing biodiversity and energy efficiency in line with sustainable operations.

Materiality Assessment

Materiality is a cornerstone of our approach to sustainability, enabling us to prioritise the risks and opportunities that enhance our resilience and long-term value creation. Our material ESG topics guide the Board and management in steering the organisation, shaping our governance, risk management, strategy and reporting processes. By focusing on materiality, we ensure that our sustainability disclosures are relevant to our stakeholders.

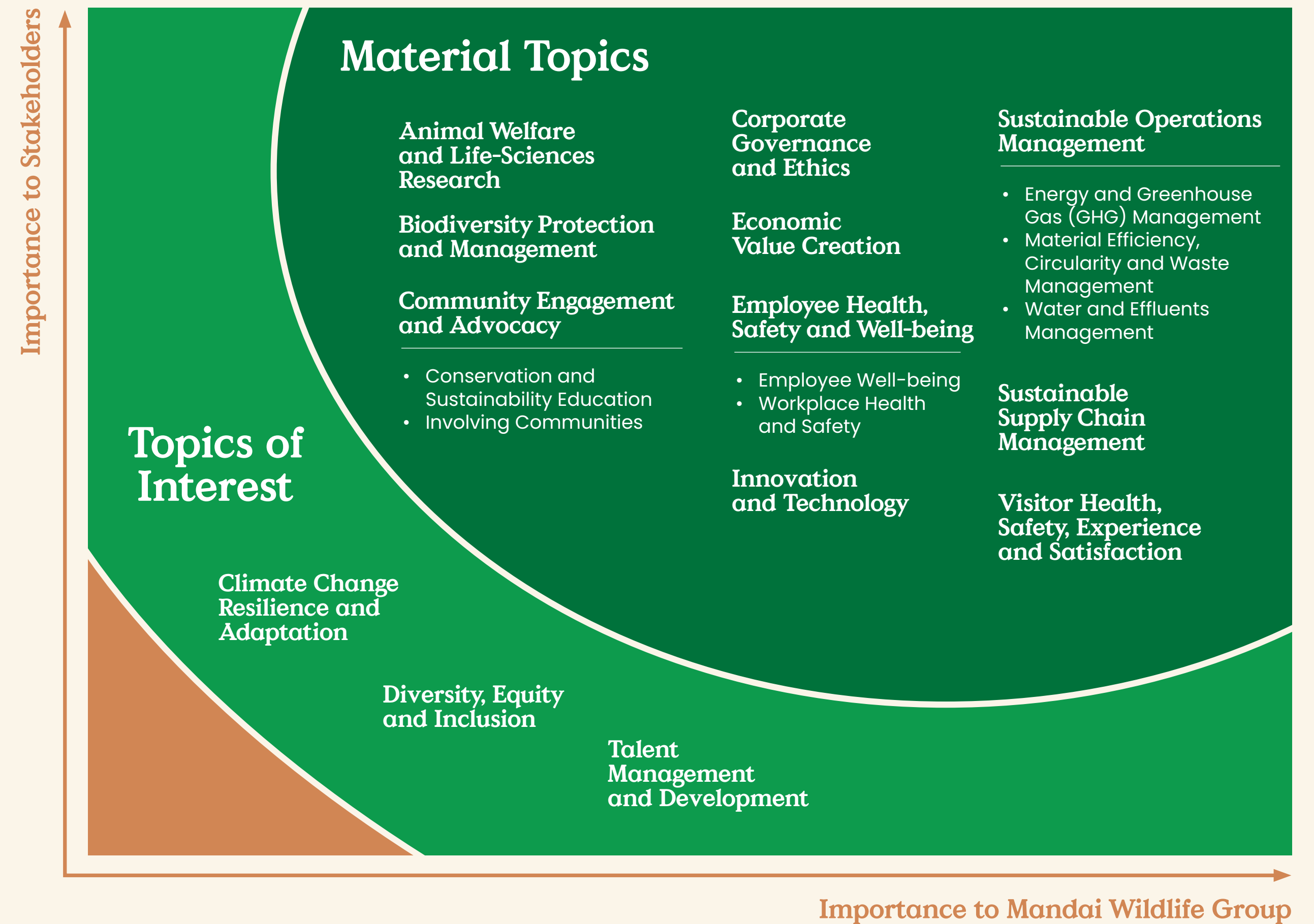
How We Selected Our Material Topics

We adopted the following three-phase process to review and select our material ESG topics.



- 1. Identify**
 In the first phase, we compiled a comprehensive list of ESG topics relevant to our business. This was achieved by analysing industry trends through various reports and indexes, reviewing the sustainability performance of global and local peers, and examining relevant frameworks and third-party rating analyses. Insights from sustainability-focused media and mainstream media, both locally and internationally, were also considered.
- 2. Prioritise**
 In the next phase, we engaged a diverse group of key stakeholders including staff, volunteers, senior management, unions, government bodies, investors, nature and environmental groups as well as the general public. The engagement was done through a series of interviews and an online survey, which helped narrow the selection down to a shortlist of material topics.
- 3. Validate**
 Lastly, we reviewed the shortlisted topics with Senior Management and the Board to select the final validated list of 10 material topics as well as three topics of interest which we will continue to monitor and provide insights on how the topics are managed given its relevance to the business and stakeholders.

Mandai's Materiality Matrix



(Note: The material topics are ranked alphabetically and not in order of materiality results.)

Every year, we will conduct a review of our selected material topics to ensure that they remain relevant. This review will determine when and to what extent we overhaul our ESG topics selection, especially when there have been significant changes to the business or industry.

Our Sustainability Framework

At Mandai Wildlife Group, our sustainability framework is anchored around the '3Ps' – Planet, People and Performance, reflecting our sustainability commitments beyond conservation and our dedication to supporting the 10 Principles of the UNGC. We are committed to integrating the principles, which encompass human rights, labour, environment and anti-corruption, into our strategy, culture, and day-to-day operations of our organisation. Additionally, we engage in collaborative projects that advance the broader development goals of the United Nations.

Our sustainability efforts are strategically aligned with eight of the UN's 17 SDGs that we believe we can make the most meaningful contributions to, given our areas of operation.

We support public accountability and transparency and commit to reporting our progress annually in accordance with the Global Compact Communication on Progress (CoP) policy. These include updates on the practical actions taken in the year on the four issue areas of human rights, labour, environment and anti-corruption, and the degree to which targets were met.

Our sustainability framework is not only a testament to our conservation ethos but also a blueprint for our contribution to the broader UN SDGs. By balancing the needs of Planet, People and Performance, Mandai Wildlife Group is creating a path towards a more sustainable future, fostering collaborative projects that advance national and global development.

Our Purpose:
Building a world where people and wildlife thrive together.

This is guided by our triple bottom line, strategic thrust and the management of our material topics.

Our 3Ps	Our Strategic Thrusts	Material Topics	SDGs
Planet	<ul style="list-style-type: none"> Provide World-class Care For Our Living Collection Be A Regional Leader In Environmental Sustainability & Conservation 	<ol style="list-style-type: none"> Biodiversity Protection and Management Animal Welfare and Life-Sciences Research Sustainable Operations Management 	
People	<ul style="list-style-type: none"> Apply Leading Organisation & HR Practices Forge A Strong National Love & Pride For Our Parks 	<ol style="list-style-type: none"> Community Engagement and Advocacy Visitor Health, Safety, Experience and Satisfaction Employee Health, Safety and Well-being Corporate Governance and Ethics 	
Performance	<ul style="list-style-type: none"> Create Exceptional Guest Experiences Ensure Long-term Commercial Viability 	<ol style="list-style-type: none"> Economic Value Creation Sustainable Supply Chain Management Innovation and Technology 	



We uphold responsible business practices, ensuring ethical conduct, human rights, and the sourcing of sustainable, ethical products.

Conducting Responsible Business

At Mandai Wildlife Group, we are committed to conducting business responsibly by adhering to all relevant laws and regulations and upholding internationally recognised human rights, including workers' rights. We are also committed to protecting the environment, public health, and safety. Our responsible business practices include actively combatting bribery, solicitation, extortion, and other forms of corruption, while maintaining transparent and fair tax practices. Additionally, we conduct due diligence to identify, prevent, mitigate, and address any potential negative impacts on the economy, the environment, and people, with particular attention to human rights.



We are committed to exemplary animal care, embedding ethical practices in every aspect of animal care.

Embedding Policy Commitments

Our Sustainability Policy outlines the fundamental environmental sustainability principles underpinning our commitment to protecting people, wildlife and the planet. It ensures compliance with applicable regulations and laws. The Policy applies to anyone carrying out, participating in, or impacting the Mandai Wildlife Group's operations.

As human-induced climate change accelerates biodiversity loss, we recognise our responsibility to operate sustainably and support a low-carbon future across all aspects of our business. Our efforts focus on optimising and decarbonising our operations, while actively protecting and enhancing biodiversity and the environment within the Mandai Wildlife Reserve and across Southeast Asia.

SBTi is a corporate climate action organisation that enables companies to take decisive action against the climate crisis by aligning with climate science. It encourages stakeholders to commit to science-based targets that limit global warming to 1.5°C and achieve Net-Zero emissions. To guide us in emissions reduction, we have set and received approval for near- and long-term science-based emissions reductions targets through SBTi. Our Net-Zero target, verified by SBTi, is set to be achieved by FY2050.

It is important that our commitments translate as policies, guidelines and standard operating procedures (SOPs) that guide our teams in the field and throughout the organisation. Our staff can easily and instantly access these guidelines on the Group's intranet. They are also communicated during organisation-wide events.



We uphold our Code of Conduct in all our business dealings and development projects.

Code of Conduct

Our operational standards are also communicated to all staff and suppliers through our Code of Conduct. All Board members and staff are briefed on our Code of Conduct and have to declare any conflicts of interest before joining the organisation. To prevent potential conflicts of interest from arising later, we issue regular reminders and require all Board members and staff to submit re-declarations periodically or when there are relevant changes. Additionally, anyone involved in procurement or hiring processes must declare any conflict of interest that emerge and recuse themselves from the approval or evaluation process.

Our suppliers play an important role in our mission to protect wildlife and we reflect this in our procurement of goods and services, valuing suppliers who are transparent, ethical and environmentally and socially responsible. We expect all suppliers to adhere to our Code of Conduct on Human Rights, the Environment and Ethical Dealings and to ensure their employees, sub-contractors, and service providers do the same. To uphold these standards, our whistle-blowing policy offers safe and confidential reporting channels for both staff and the public. This policy is available on Mandai Wildlife Group's website.

Park Overview and Sustainable Design Elements

Sustainable Design

To minimise energy and water use at our parks, we maximise natural lighting, ventilation and recycle our wastewater, while making use of tree shades to keep the parks cool for our guests. At Bird Paradise, the park was designed to take advantage of prevailing wind directions to promote natural airflow, reducing the need for fans and air-conditioning.



Mandai Wildlife Reserve is certified as a sustainable tourist destination under the **GSTC Destination criteria**.

We have also been acknowledged for sustainable practices through numerous awards across the years.



1. Enhancing Ecological Connectivity

The Mandai Wildlife Bridge is a dedicated wildlife crossing bridge linking forest fragments from either side of our precinct. The bridge foliage provides a continuous canopy, which gives safe passage to the wildlife inhabiting the forest. The surrounding buffer zones cushion wildlife and nature against the impact of development and operations and create thriving habitats for the native flora and fauna.

2. Greening our Transport and Operations

All our trams and buggies have been converted to operate electrically, resulting in a 70 tCO₂e reduction in our greenhouse gas emissions. Electric Vehicle (EV) chargers have been installed at both Multi-Storey Car Parks to encourage guests to adopt the use of EVs. In a further move towards greater sustainability, both car park roofs also house solar panels, helping to lower the carbon footprint of our operations.

3. From Trash to Treasure

Black Soldier Flies and Madagascar Hissing Cockroaches are used to compost raw food waste. The invertebrates are in turn used as animal feed, creating a circular waste management system.

We also operate a food waste digester which has the capacity to convert two tonnes of food waste per day into liquid fertiliser that can be used to fertigate plants.

4. Closing the Water Loop

Our award-winning Wastewater Recycling Plants feature cutting-edge membrane bioreactors, ultraviolet treatment technology and chlorine disinfection methods that transform animal wastewater into high-quality, non-potable water.

At River Wonders, our bio-bed filter at our manatee exhibit recycles 29,200m³ of water annually.

Sustainability Highlights & Awards

Note: The list below shows highlights and key awards. For more information, please refer to Mandai Wildlife Group's [website](#).



Certified as a sustainable tourist destination under the GSTC Destination criteria.

Planet



Mandai Wildlife Group has near, and long-term science-based emissions reduction targets approved with the SBTi. The SBTi has verified Mandai Wildlife Group's Net-Zero science-based target by FY2050



Recipient of the Outstanding Achievement in Sustainability, Enterprise Excellence for Singapore Tourism Awards (STA) 2023 by Singapore Tourism Board (STB)



Attained the National Parks Board (NParks) Landscape Excellence Assessment Framework (LEAF) Platinum certification for Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST, as of 2023



Attained Building and Construction Authority (BCA) Green Mark Platinum Awards were given to Penguin Cove at Bird Paradise, East Arrival Node, and Mandai Rainforest Resort. Additionally, the resort distinguished itself as the first hotel in Singapore to receive the BCA Green Mark Super Low Energy (Platinum) Award, recognising its exceptional energy-saving design.



Wastewater Recycling Plant attained Distinction Award (Water Reuse Project of the Year) for Global Water Awards 2023

People



Friend of Singapore Red Cross Award 2023



Attained the BCA Universal Design Excellence Award 2023 for Bird Paradise and Mandai Wildlife WEST



Accredited with the Progressive Wage Mark in September 2023 in recognition of its commitment to progressive wages



Finalist for Outstanding Employer at Singapore Tourism Awards 2023

Performance



Hashtag Asia Awards 2023
Gold in Best Social Media Campaign: WeChat – Singles Day Promotion on WeChat Mini Programme



iF Design Awards 2023
Ranger Buddies Web Application



Singapore Business Review Technology Excellence Award
AI-Powered Aviary Mesh Monitoring System, Bird Paradise



Marketing Excellence Awards 2023
Gold for Excellence in Event Marketing – A Flight to Remember Campaign, Jurong Bird Park
Silver for Excellence in Event Marketing – Festive Wild-erland: A Black & White Celebration Campaign, Mandai Wildlife Group



Singapore Media Marketing Awards 2023
Silver for Best Use of Integrated Media – Take Off to Paradise, Bird Paradise.
Bronze for Best Brand Engagement – Happy ZOOobilee, Singapore Zoo



Singapore Tourism Awards 2023
Finalist for Outstanding Attraction Experience – Mandai Wildlife Reserve
Finalist for Outstanding Business Innovation – Mandai Wildlife Reserve



TripAdvisor Travelers' Choice 2023
Singapore Zoo

Approach to Sustainability Governance

Internal governance processes, overseen by our Board, ensure ownership and accountability over our sustainability initiatives.

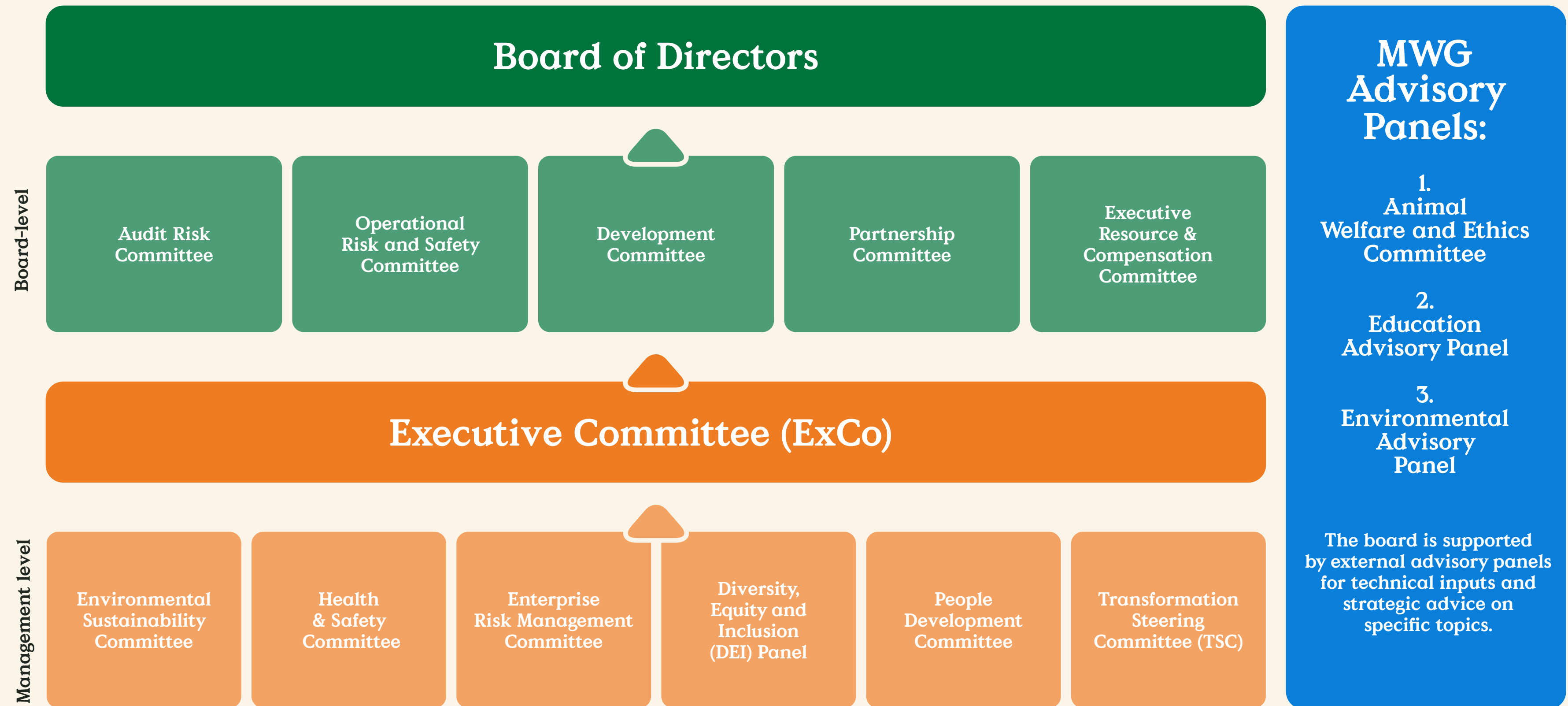
Board Oversight

The Board provides overall guidance and direction to management on Mandai Wildlife Group's purpose, vision, strategies, policies and goals related to sustainable development.

As of 31 March 2024, the Board comprised 13 members, each of whom brings a wealth of experience to the Mandai Wildlife Group to guide the growth of its sustainability, education and conservation contributions in Singapore and across Southeast Asia.

Mandai Wildlife Group management updates the Board regularly on our sustainability progress, including decarbonisation status, key initiatives and attainment of sustainability targets, which are tracked in our corporate scorecard. The Board meets approximately once every two months to review the management's reports as well as Mandai Wildlife Group's overall environmental sustainability strategy, decarbonisation targets and ESG material topics. Board nomination and selection processes are conducted fairly and professionally and ensure that members have the relevant skills to contribute towards the attainment of our organisation's goals.

Governance Structure



Compensation Linked to Sustainability Goals

Our compensation framework is designed to foster a high-performance culture, where our employees are empowered to take ownership of their actions.

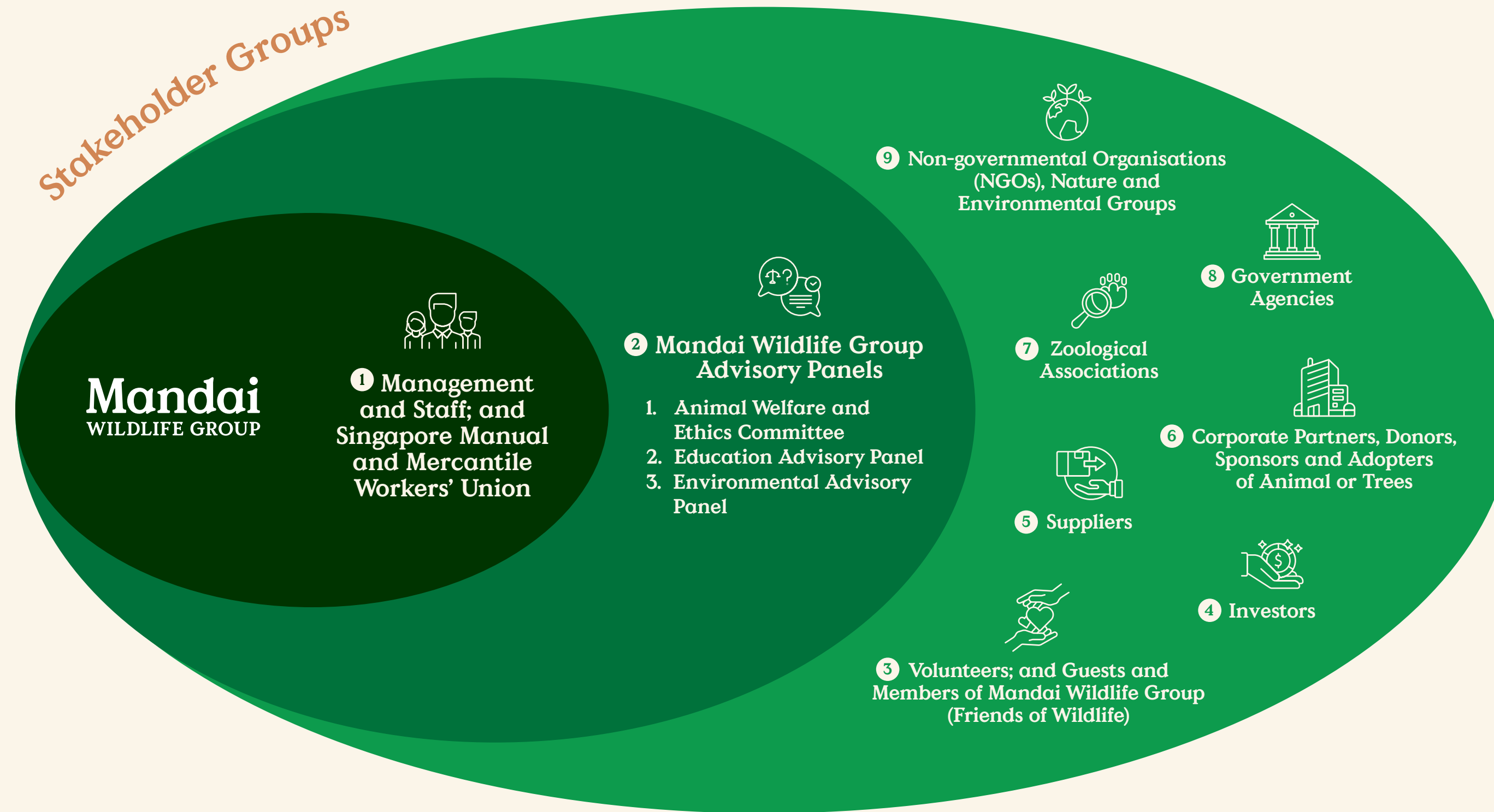
The variable component of our compensation framework is dependent on our corporate scorecard performance which includes environmental, social and financial goals. Employees are compensated accordingly when the organisation's environmental, social and financial goals are met through their contributions.

Stakeholder Engagement

Our proactive engagement with key stakeholders is a strategic imperative that underpins our mission to operate responsibly and sustainably. We recognise that our stakeholders are integral to our success, and their input is crucial in steering our business towards practices that are not only ethical and environmentally conscious but also aligned with their values and expectations.

We define our key stakeholders as those who are most affected by our operations and those who have the potential to influence our business direction. By actively engaging with them, we seek to foster a transparent and mutually beneficial dialogue that not only informs us of their priorities but also allows us to anticipate and adapt to emerging trends and concerns. The insights gained from these interactions are instrumental in shaping our comprehension of the ESG aspects that hold significance for our organisation. This understanding is pivotal in establishing our strategic imperatives and it propels the development and execution of our sustainability commitments.

Stakeholder Groups



9 To identify opportunities for collaboration and share knowledge on common areas of interest through regular update meetings and working group discussions with NGOs, seeking collaboration to enhance sustainability and conservation efforts.

8 To ensure adherence to requirements and stay informed of relevant developments through regular update meetings with government agencies.

7 To ensure adherence to international animal welfare standards and exchange best practices on animal welfare and operations through frequent meetings with zoological associations, as well as through accreditation and audits as required.

6 To provide updates on developments and new offerings, identify collaboration opportunities, and gather feedback on service through engagement meetings, publications, and targeted events with corporate partners.

5 To identify opportunities for service quality improvements and collaboration, and to align on the Group's Supplier Code of Conduct, Green Procurement, and Environmental, Health and Safety requirements through toolbox meetings and actively pursuing business and collaboration opportunities.

Purpose and Methods of Stakeholder Engagement

1 To ensure management and staff align with the organisation's goals, feel purposeful in their roles, and have their well-being and development concerns represented. This is achieved through town halls, management meetings, employee surveys, and regular union sessions to consult on decisions impacting all employees.

2 To engage external experts' advice on key business activities and operations through quarterly advisory panel meetings.

3 To ensure volunteers' well-being concerns are represented to management and provide updates on developments to guests and members, while maintaining brand loyalty and gathering feedback through continuous engagement, surveys, social media, and engagement sessions.

4 To engage with investors to provide updates on strategic developments and business performance through regular meetings and focused communication channels that ensure clear and timely updates.

Planet

In this section

- 15** Biodiversity Protection and Management
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- 24** Sustainable Operations Management
- 25** • Energy and Greenhouse Gas (GHG) Management
- 30** • Material Efficiency, Circularity and Waste Management
- 34** • Water and Effluents Management
- 36** • Climate Change Resilience and Adaptation

Protecting biodiversity and the planet, we provide a safe, natural habitat for our giant pandas.

Cultivating wildlife-friendly coffee while securing community livelihoods

“I love how our support to conserve the Javan gibbons fortuitously sparked a coffee venture that now sustains the local community and supplies our Food and Beverage (F&B) outlets with aromatic and sustainably-sourced coffee. This arrangement not only secures a steady market for the farmers through our outlets but also allows us to educate our guests about the environmental impact of their consumption choices with every cup of coffee served.”

Roopali Raghavan

Head, Terrestrial Species and Conservation Planning, Mandai Nature



Gibbon native to the Javan Highlands.

Since 2014, Mandai Wildlife Group’s conservation arm, Mandai Nature, collaborated with our NGO partner SwaraOwa to help conserve the Silvery gibbon natively named Owa. Roopali has been working closely with the team involved in the field in the Javan Highlands, driving efforts to stop deforestation to save the natural habitat of the Javan gibbons.

What started as a survey project to conserve the Silvery gibbon, a species fast being driven out of its habitat by poaching and the cutting down of its forest environment, soon expanded into a community project involving over 25 families from six local villages. “Working with the local community, the SwaraOwa team convinced the farmers that they

could cultivate a coffee varietal that grows well in the shade under the canopy of trees instead of cutting them down and displacing the gibbons from their natural habitat,” says Roopali, explaining how the coffee project came about.

Roopali’s sharing shows how Mandai Wildlife Group and Mandai Nature find creative ways to fulfil our purpose by striving to solve the root causes threatening wildlife. Our teams work with our conservation partners to understand issues and develop targeted solutions. Through this project, the endangered Javan gibbons and their forest habitats, which serve as vital carbon sinks for climate mitigation, are being protected. Additionally, our guests get to enjoy a wildlife-friendly beverage in the parks.



Roopali Raghavan (top right) with the SwaraOwa team in Java, Indonesia.





Coffee grounds being prepared for market by the local community. (Photo: SwaraOra)

Biodiversity Protection and Management



Mandai Wildlife Group is dedicated to biodiversity conservation, supporting species conservation and habitat protection. We are committed to mitigating the effects of climate change and to building a world where wildlife and people thrive together. Through conservation education and advocacy, we raise awareness and validate our ongoing efforts to protect wildlife and their natural environments.

Targets	Status
 <p>Restore and enhance 2.7 hectares of degraded land within buffer zones, set-backs, and retained forests within the Mandai precinct by 2030</p>	 <p>As of FY2024, 0.8 hectares have been restored</p>



We are the custodian of the Mandai precinct that hosts about 5% of the global population of the critically-endangered straw-headed bulbul. We have successfully bred 8 chicks at Bird Paradise.

Our Work In Biodiversity Matters

We Champion Biodiversity Conservation and Habitat Protection

We are committed to biodiversity conservation, supporting species conservation and habitat protection on an international scale. The growing threats from illegal wildlife trade, climate change, and habitat destruction caused by human activities make our work more important than ever. To address these challenges, we are part of global zoo networks to ensure genetically diverse and sustainable animal populations in human care. Mandai Nature provides funding and in-kind support for over 40 conservation projects that span across terrestrial and freshwater systems, contributing directly to the global effort to combat biodiversity loss. Please refer to [this link](#) to learn more about Mandai Nature's projects.

We Mitigate the Environmental Impact of Wildlife Trade

Illegal and unsustainable wildlife trade is a major driver of species extinction and habitat destruction. Through our policy on the 'Use and Trade of Wild Animals and Plant Products' and our Green Procurement Policy, we are committed to combatting this by prioritising responsible procurement practices and supporting ethical, sustainable sourcing.

We Raise Awareness Through Conservation Education

Conservation education is central to our mission because raising awareness is key to inspiring action. Our programmes highlight the devastating effects of illegal wildlife trade and habitat destruction, engaging people to take part in solutions. By educating the public, we validate our commitment to conservation while empowering individuals to protect wildlife and their habitats.

FY23/24 Highlights

>40
conservation projects supported across Southeast Asia

>30
conservation partners were engaged across Southeast Asia

1,198
rescued wildlife from across Singapore were admitted to Mandai Wildlife Group's Wildlife Healthcare and Research Centre



Sunda Pangolin

A Critically Endangered native mammal species in Singapore, the Sunda Pangolin, was recorded using the Mandai Wildlife Bridge for the first time during the FY. Mandai Wildlife Group plays a key role in caring for injured or dead pangolins found in urban spaces, with each examination contributing to the understanding of the species.

Our Approach to Biodiversity Protection and Management

Promoting Conservation Locally and Beyond
Mandai Nature, our conservation arm, is dedicated to advancing efforts on biodiversity conservation, with a focus on averting species extinction, especially within the Mandai Wildlife Reserve, Singapore and Southeast Asia by delivering conservation programmes at scale with partners, as well as convening partnerships and collaborative alliances to address critical conservation outcomes. This work allows us to apply holistic conservation approaches by integrating ex situ and in situ conservation action. Mandai Nature has invested \$5.7 million in FY23/24 into conservation efforts in Southeast Asia and these contribute to broader discussions on biodiversity conservation.

Promoting Species Conservation

We Support Global Breeding Programmes
The conservation of species involves the need for global collaboration. We participate in breeding programmes, such as the Global Species Management Plan (GSMP) and the EAZA Ex-situ Programme (EEP), to promote population growth and sustainability of the animals born in our care, taking part in exchanges, donations, breeding loans and ex-situ-managed breeding programmes based on genetic compatibility. This involves the carefully planned relocation of animals to other wildlife institutions, either as part of a managed programme or to manage population numbers, after conducting due diligence to ensure the destination institution meets the requisite standards of ethics, animal care and welfare, and animal acquisition.



Mandai Nature, Chester Zoo, and Hellabrunn Zoo collaborated at Cikananga Conservation Breeding Centre, Indonesia, to develop conservation strategies for threatened Javan species like the Black-winged Myna and Rufous-fronted Laughingthrush.

Safeguarding Species Diversity with Managed Breeding Programmes
Around 16% of the species in our wildlife parks are threatened with extinction due to factors such as illegal trade, habitat loss and habitat degradation. These threatened species must be managed carefully under human care to ensure their long-term survival. Collecting individuals from the wild must be avoided to prevent further depletion and endangerment of their populations.

Mandai Wildlife Group participates in over 190 international managed species programmes. These programmes ensure the highest standards of welfare

and husbandry in the care, transfer and breeding of the species are done with the highest welfare and husbandry standards. By maintaining genetically and demographically healthy populations, these programmes are crucial to guaranteeing the long-term survival of many threatened species.

As a member of several zoo associations, including the EAZA, Mandai Wildlife Group adheres to internationally recognised standards of animal care, ethics, and conservation policies. We manage 10 international species programmes and are continually involved in new initiatives as they emerge. For species not included in international programmes, we maintain the highest

standards of care, managing local breeding programmes with respect to local genetic diversity and population needs (see our [Yearbook Annex](#) for full list and details).

Tackling Southeast Asia's Wildlife Trafficking Crimes

Mandai Nature collaborates with TRAFFIC, a leading wildlife trade monitoring network, to combat wildlife trafficking in the region. TRAFFIC Southeast Asia works with authorities to curb trafficking, but demand for threatened species remains high. Mandai Nature also supports research on the illegal songbird trade, contributing to the International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) Asian Songbird Trade Specialist Group's evidence-based research and the publication of reports on the online bird trade. Notably, a study on Singapore's online pet trade led to actions by Facebook and Singapore's NParks to shut down illegal trade activities. Additionally, Mandai Nature and TRAFFIC focus on the trade of lesser-known threatened species and advocate for the conservation role of regional zoos and aquariums in sourcing animals sustainably and ethically. Both organisations are part of the governing council of the IUCN SSC Asian Species Action Partnership (ASAP), a network of over 200 organisations dedicated to accelerating conservation action for Southeast Asia's most threatened species. ASAP's mission is to ensure a future where wildlife thrives alongside people through collaboration and preservation efforts in this diverse region.

Setting the Scene for Nature-based Solutions (NbS)

Mandai Nature is a member of the Southeast Asia Climate and Nature-based Solutions (SCeNe) Coalition, a partnership that supports the delivery of and investment in high-quality, triple-benefit, NbS across the region. Triple-benefit NbS are actions to protect, sustainably manage and restore ecosystems. They are designed to simultaneously combat climate change, conserve biodiversity and benefit local communities. The coalition has developed the NbS Tool, which aims to lower the barrier to entry for Frontline Organisations (FOs) to access climate finance from NbS projects, as well as to support investors to channel funds to FO-led projects. It is also developing an NbS Incubator programme to deliver scientific, regulatory, technical, technological, financial and business development support to FOs at various stages of project development.

Singapore Conservation Impact Grant

Mandai Nature has relaunched its flagship local grant programme, formerly known as the Wildlife Reserves Singapore Conservation Fund. It provides annual funding of S\$200,000 in grants to Singapore-based projects that prioritise contribution to a biodiverse, ecologically connected and biophilic City in Nature. In FY23/24, more than S\$125,000 in grants have been awarded to three researchers for research projects around songbirds, sharks and rays, and horseshoe crabs in Singapore.

Conducting Due Diligence on our Partner Institutions

Our responsibility for the health and welfare of our animals does not stop when they leave us. Receiving institutions must have the necessary knowledge, resources and facilities to ensure the quality of life and welfare of the animals we send to them.

Transferring our exacting standards: Prior to the transfer, we review living spaces at the receiving institution through plans and photos, conduct onsite visits if necessary, and provide additional training to animal care staff to meet welfare standards. We require that receiving institutions care for and train animals using ethical methods, and we emphasise the importance of ethical and responsible animal care to guarantee the best possible outcomes for the animals involved.

We track the number of animals successfully acquired, transferred and released, monitoring progress to ensure positive outcomes for our conservation efforts.

To encourage responsible consumption we invest in public education initiatives and active engagement with partners to ensure the successful implementation of sustainable trade practices. Our biodiversity awareness training programmes are held at least once every six months for all site staff, workers, sub-contractors and visitors. We also maintain records of wild animal and plant product usage to enhance transparency and accountability in our own conservation initiatives.



Restoring degraded land and nurturing seedlings to boost biodiversity protection.

Supporting Ethical Trade

Mandai Wildlife Group is committed to promoting sustainable trade practices and supporting ethical markets in the use and trade of wild animals and plant products. This approach has a long-term positive economic impact by fostering sustainable trade practices, although it may initially restrict certain market activities, requiring short-term economic adjustments.

For us fighting the illegal, unsustainable, or unethical use and trade of wild animal and plant products entails we only buy, use, sell and serve certified sustainable wild plant products and actively engage in educating the public about the negative impacts of illegal wildlife trade while promoting the use of products that do not harm threatened species.



Buying Responsibly

We have in place responsible procurement practices aimed at lowering the cost of running our business on the economy, the environment and society as a whole. When we source from ethical suppliers, we widen the environmental impact of the work we do in the long-term but recognise the short-term impact of higher initial procurement costs due to the requirement for certified products. This includes maintaining detailed records on the use of wild animal and plant products, ensuring that no illegal, unsustainable, or unethical products enter our supply chain.

While we effectively manage the protection and stewardship of the forests and greenery within our parks, we also have an ethical responsibility to ensure that our procurement practices do not contribute to deforestation or the depletion of vegetation globally, nor negatively impact the livelihoods of farmers who produce the raw materials we rely on.

We continuously review our procurement practices to identify areas for improvement. Below are some of our current initiatives:

- 100% Certified Sustainable Palm Oil for all cooking oil used
- 100% sustainably-sourced seafood in our F&B outlets
- 100% sustainably-sourced tea for our beverage offerings
- Sustainably sourced paper-based products

For more information on our commitment to sustainable procurement, please refer to the chapter on Supply Chain Management.

The Origin of Our Owa Coffee

In working to conserve the Javan gibbon, we inadvertently stumbled on another worthwhile project that has led to our staff and guests being able to enjoy wholesome coffee straight from the Javan Highlands through our F&B outlets.

We are working with our NGO partner, SwaraOwa, to help conserve a species of Javan gibbon natively named Owa, which is fast being driven out of its habitat by poaching and the cutting down of its forest environment. We discovered that local farmers were felling trees to plant coffee. Working with the local community, we explained that the farmers could make use of the trees to provide shade under the canopy for the coffee plants. In return for their commitment to conservation, Mandai Wildlife Group purchases between 25% and 40% of their annual coffee yield. By serving their coffee in our F&B outlets, we guarantee them a market, while the remainder is sold to the local community.

The bonus is that now the villagers know the Owa is under threat, they actively chase away the poachers. This innovative partnership has not only safeguarded the gibbons' home and empowered the local community by providing them with a sustainable income but also contributes to the Coffee and Primate Conservation Project (CPCP) and SwaraOwa's ongoing efforts to seek legal status for 50 km² of the Petungkriyono Forest as an Essential Ecosystem Area (EEA), which could potentially unveil new discoveries of rare wildlife species. A little education can have a long-term, lasting impact.



A mother and baby Raffles' banded langur.

Case study

Protecting Singapore's Rarest Primate

The Raffles' Banded Langur Working Group was formed in 2016 to halt the extinction of this rare primate and is chaired by Mandai Nature. Once thought to become extinct by the 2030s, the species' population is now predicted to double in the next 15 years to 150 and reach over 240 individuals by 2071. While the reversal in fortunes is inspiring, there is much work to be done in preserving the primates and their natural habitats. Now in its seventh year, the Species Action Plan has attracted over 520 volunteers since it began, and the Group is working with NParks to support a range of habitat enhancement measures.

For more information on our conservation projects, please refer to the [Mandai Nature Impact Report 2023/2024](#).



One of six adult Negros Bleeding-heart Doves that arrived in Singapore from the Philippine island of Negros.

Case study

Negros Bleeding-heart Dove

Bird Paradise houses the only breeding programme for the critically endangered Negros Bleeding-heart Dove outside its native Philippines. Under this conservation initiative supported by Mandai Nature, these rare birds were received from a breeding facility managed by Talarak Foundation Inc. at Negros Forest Park, Bacolod City, Philippines. The programme is part of the One Plan Approach (OPA) for threatened species endemic to Southeast Asia and reflects our dedication to preventing extinction.

The birds are kept in a conservation breeding area of the park, where the programme has successfully seen the hatching of doves. The long-term aim is to return the progenies to the Philippines.



Preparing the Rote Snake-necked Turtle for repatriation.

Case study

Repatriating the Rote Snake-necked Turtle

Not seen in its native habitat of Rote in the Lesser Sunda chain of islands off Indonesia since 2009, 13 Rote Snake-necked turtles were repatriated in August 2021, thanks to a conservation project led by the Indonesian government's Ministry of Environment and Forestry (MOEF), Balai Besar KSDA Nusa Tenggara Timur (BBKSDA NTT), with support from Mandai Nature, Singapore Zoo, and the Wildlife Conservation Society Indonesia Programme (WCS-IP). The turtles are housed at a breeding facility in Kupang, East Nusa Tenggara, which forms the first structured collaborative conservation breeding programme in Indonesia. The programme has already seen successful nesting and hatching.

In August 2023, an additional 33 Rote Snake-necked turtles were repatriated from Singapore Zoo, in collaboration with MOEF, BBKSDA NTT, WCS-IP, Mandai Wildlife Group and Mandai Nature. Upon arrival, the turtles were transferred to a breeding facility in Kupang, constructed in 2020 with Mandai Nature's support.

As a safeguard for the species, Singapore Zoo also houses an assurance colony for the Rote Snake-necked turtle in Asia, which includes individuals from breeding programmes in the US and Europe.

Championing Environmental Stewardship during the Mandai Rejuvenation Project



Camera traps on the Mandai Wildlife Bridge help monitor wildlife movement, including Sunda Pangolins.

The Mandai Rejuvenation Project represents a significant effort to transform the Mandai precinct into a unique ‘window into the wild’, inspiring our guests through the fascinating world of wildlife. The project will integrate five wildlife parks with nature-themed experiences, green public spaces and an eco-friendly resort. In our commitment to being a responsible steward of the Mandai Wildlife Reserve, careful planning from the concept stage of the project ensured the successful execution of mitigation measures to minimise the impact on the nature around us.

Environmental Impact Assessment (EIA) Study
We commissioned a comprehensive EIA study which documented environmental risk and protection measures from the outset as the Mandai Rejuvenation Project was being conceptualised.

Following the mitigation hierarchy of “avoid, minimise, manage and compensate”, key measures were

integrated into the concept design. The EIA study is made available on our [website](#).

The mitigation measures were captured in the Environmental Management and Monitoring Plan (EMMP) which the Group continues to implement. To ensure effective implementation of the measures, the Environmental Advisory Panel was set up to monitor progress and advise on necessary modifications throughout the project. Key achievements from the EMMP include:

Mandai Wildlife Bridge

- The 44m-wide, 110m-long Mandai Wildlife Bridge is a dedicated wildlife crossing that links forest fragments on either side of our precinct, providing a safe passage for the native wildlife surrounding our park grounds. The bridge is central to the green stitching of the Mandai precinct. It connects the buffers of Rainforest Wild Asia and the new Bird Paradise, to the forest patches of the nature reserve on both sides of the Mandai Lake Road.

- Through camera-trap monitoring, we know that it has been used by more than 80 native vertebrate species. Together with other connectivity measures, road mortality along Mandai Lake Road involving threatened species has decreased drastically since its opening in November 2019.
- To encourage forest-dependent fauna species to use the bridge, we aim to achieve a multi-layered forest structure atop the bridge, similar to the surrounding forest. Over 31,000 plants have been planted onto the bridge including more than 1,000 native trees and more than 30,000 shrubs. In FY23/24, we successfully maintained canopy coverage of over 85% for the first time. This achievement was validated by our very first record of the Sunda Pangolin in July 2023. Moreover, during this FY, we recorded 51 detections of lesser mousedeer using the bridge, a record high for us. With two threatened, forest-dependent, and typically elusive species using the bridge, we are encouraged that it is fulfilling its intended purpose as a wildlife corridor.

Buffer Areas

- One of our key measures to protect biodiversity around our development land was setting aside 19% of our development area (equivalent to 13ha) as protected buffers, setbacks, and retained forests, where no construction or public access is permitted. These buffer areas help cushion the surrounding biodiversity from the impacts of construction activity.
- To ensure that the biodiversity within the buffer areas is thriving, we have an ongoing fauna monitoring programme. In FY23/24, we recorded 13 mammal species, 28 amphibian and reptile species, and 67 bird species.

Tree Protection Zones – Incorporating Existing Trees into the Design

- We aim to preserve as many trees as possible within our development zone, especially large and locally threatened species.
- In areas with many large trees and locally threatened species that are of conservation and ecological value, we set up Tree Protection Zones (TPZs) around these clusters to retain and protect them from the surrounding development works.

- These TPZs are hoarded to prevent damage and are monitored monthly to ensure that our retained trees remain in good condition and health.
- The Heart of Africa in Bird Paradise is the largest aviary in Bird Paradise and features many retained trees, including the critically endangered Marsh Ubah tree (*Glochidion obscurum*) and the large fig tree, *Ficus benjamina*, visible at the start of the Heart of Africa boardwalk.
- In addition to ensuring connectivity in the natural area surrounding our parks, we aim to facilitate animal connectivity within our parks as well. The forest corridor in Bird Paradise consists of both retained and planted trees, leading to the adjacent buffer forests and connecting our parks to these areas.
- About 540,000 trees, shrubs and plants, of which over 80% are native to South-east Asia was planted in the development area in an effort to boost eco-connectivity between the green spaces, allowing biodiversity to thrive.

Mandai Ecological Restoration Plan

- The Mandai Ecological Restoration Plan is a 10-year roadmap aimed at assisting the recovery of 2.7ha of degraded areas within the buffers, setbacks, and retained forests by FY2030, to enhance biodiversity and wildlife connectivity in the Mandai precinct.

Rescue and Release

Mandai Wildlife Group’s Wildlife Healthcare and Research Centre admitted 1,198 rescued wildlife animals in FY23/24, demonstrating our strong commitment to the rescue, rehabilitation and release of native species. These animals are treated at our dedicated wildlife hospital, where they undergo comprehensive health assessments by the veterinary team to ensure they meet all health requirements before being released back into the wild. With our partners, the release of these animals is meticulously managed and guided, ensuring that every step aligns with the highest standards of animal welfare and conservation efforts. This rigorous process underscores our dedication to supporting wildlife conservation and restoring native species to their natural habitats.

Animal Welfare and Life-Sciences Research



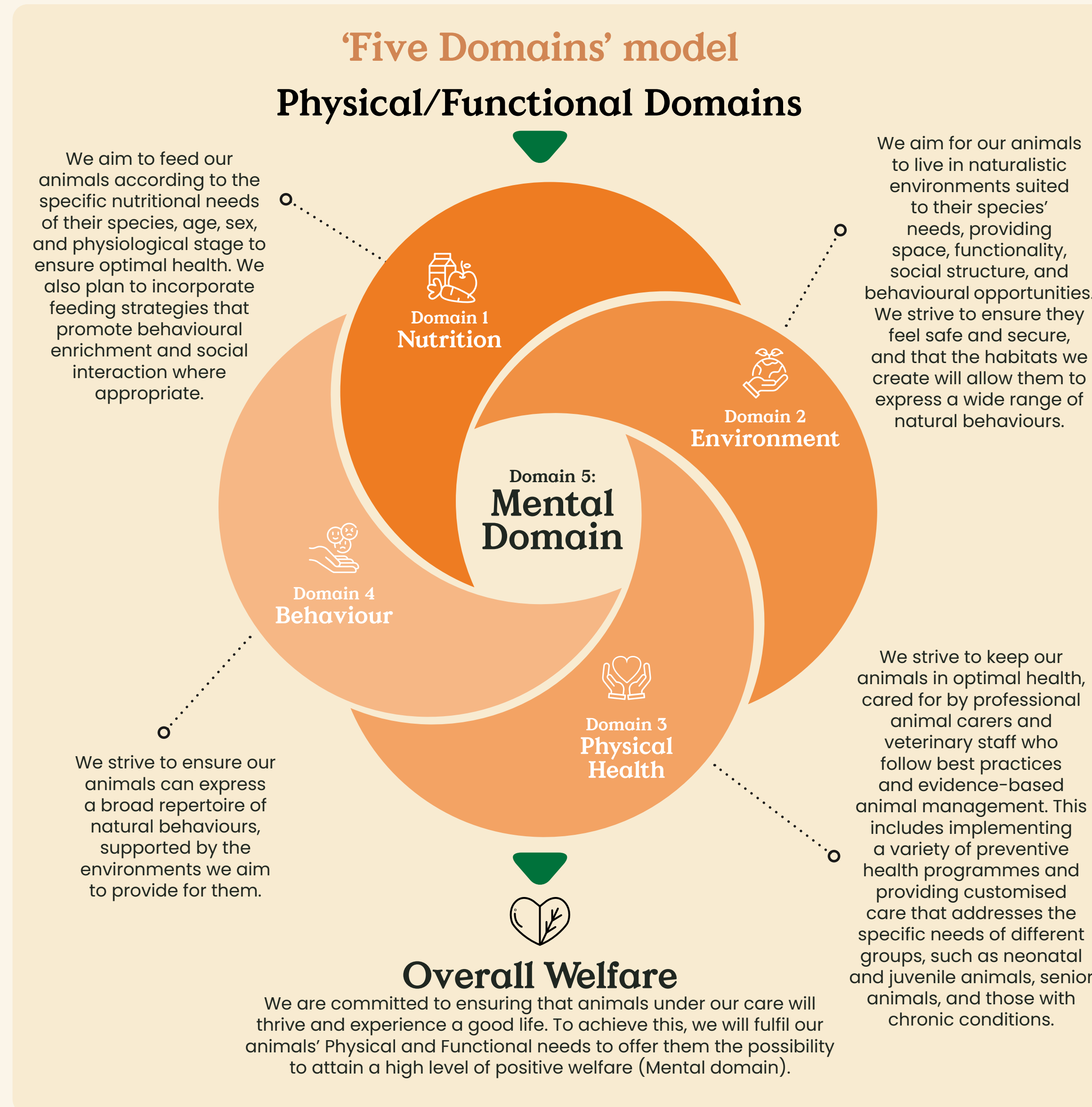
The management of animal welfare is crucial for the well-being of the animals in our care and vital in staying true to our Mission and Purpose. The welfare of our animals is also essential for conducting meaningful research that informs our conservation efforts. Our commitment to ethical animal welfare and life-sciences research is validated through extensive reporting and management practices.

Leading the Way

Mandai Wildlife Group places great emphasis on animal welfare and life-sciences research, integrating these critical areas into our operational sustainability initiatives. We have invested \$4.5 million into conservation efforts in Southeast Asia and these contribute to broader discussions on biodiversity conservation.

Adopting International Best Practices in Animal Care

We adopt an evidence-based approach to animal welfare and life-sciences research that adheres to international best practices. Animal welfare, as defined by the World Association of Zoos and



FY23/24 Highlights

More than **22,126** specimens of animals across

941 animal species under our care,

29% of which are threatened in the wild

Welcomed **1,126** births and hatchlings across **151** species

19 peer-reviewed journals published

Aquariums, is “a state that is specific for every individual animal; it is how the animal experiences its own world and life through its association with pleasant experiences specific for that species such as vitality, affection, safety and excitement, or unpleasant experiences such as pain, hunger, fear, boredom, loneliness and frustration.” Our efforts are designed to exceed regulatory requirements, ensuring that the enclosures—whether habitats, yards, or dens—where our animals live meet their specific needs for both physical and emotional well-being. We aim to ensure animals under our care experience the highest standards of animal care.

We Promote Ethical and Sustainable Animal Care Practices

We prioritise animal welfare and are guided by our animal welfare code, which is based on global best practices incorporating the 'Five Domains' Model, a science-based framework for assessing animal welfare around nutrition, environment, physical health, behaviour and mental well-being.

We Advocate Respect for Wildlife and Behaviour Change to Save Wildlife

Our training programmes provide an opportunity for us to create awareness of the importance of conservation and advocate for the protection of wildlife. This does not come at the expense of the well-being of the animals in our care. We employ positive reinforcement training methods that are respectful to our animals and promote their natural behaviours. Our engagement sessions take place in a safe environment for our animals and guests to have meaningful close encounters. They are designed to educate our guests on threatened species and highlight the importance of conservation efforts and the practical actions they can take to protect the environment and habitats of the animals in the wild.

Our Approach to Animal Welfare

The welfare of our animals is of prime importance, and our passionate and dedicated team of animal management and healthcare professionals are committed to providing the highest standards of care for them. Our efforts are two-pronged, aiming to both prevent issues arising through the quality of our care and address issues as they arise through continual monitoring and improvement processes.

Enhancing the Welfare of Animals Under Our Care

We recognise the ethical responsibility of maintaining animals in our care and in mitigating the negative impacts on their well-being of living outside their natural environment, such as behavioural changes. Our policies and programmes are designed to protect the welfare of our animals in the following areas of their care.

Nutrition

Our dedicated Wildlife Nutrition Team works closely with the Animal Care, Veterinary and Healthcare Teams to plan our animals' diets to replicate their nutritional intake as closely as possible to that they would have access to in their natural habitats in the wild. Where certain animals require additional nutritional support, supplements are given. We review diets regularly and refine them as needed to maintain optimal nutritional intake.

Exhibit Design

We design our exhibits to offer animals opportunities for challenge and choice, and to encourage natural behaviours. The designs of the exhibits also promote the fitness and well-being of the inhabitants, with some exhibits housing multiple species to encourage inter-species interaction and to keep the animals socially engaged.

Enrichment Activities

Many of the animals in our care follow an enrichment calendar to ensure that they are regularly engaged in diverse activities designed to offer new challenges and keep the animals alert and healthy. Activities are carefully tailored

to the biology of each species and even the personality of the individual animals. Our Animal Care Team dedicates significant time and effort to designing food-based and other enrichment activities to encourage natural behaviour and provide mental and physical stimulation.

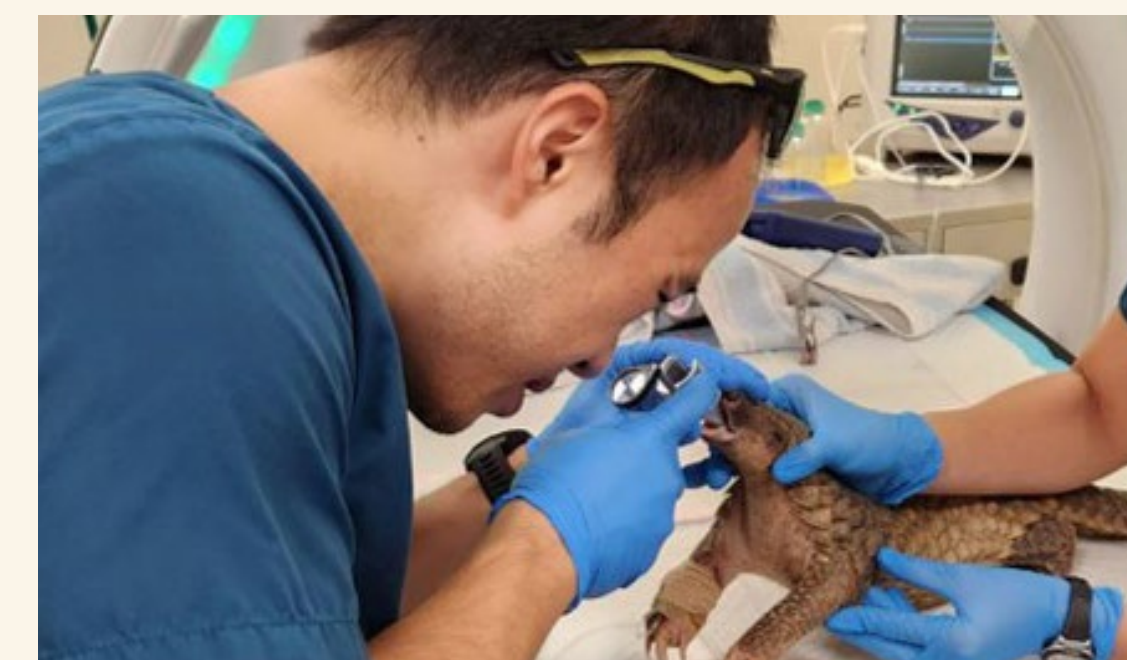
Training for Stress-free Healthcare

Our Animal Care, Veterinary and Healthcare Teams puts in tremendous effort to train animals, through operant conditioning, to voluntarily participate in routine care and medical procedures. This reduces the need for physical restraint or anaesthesia, which can be stressful for both animals and caregivers. Over the years, we have steadily increased the number of animals successfully trained for voluntary participation, thanks to the close bonds that have been nurtured between the animals and their dedicated care team.

Veterinary Care

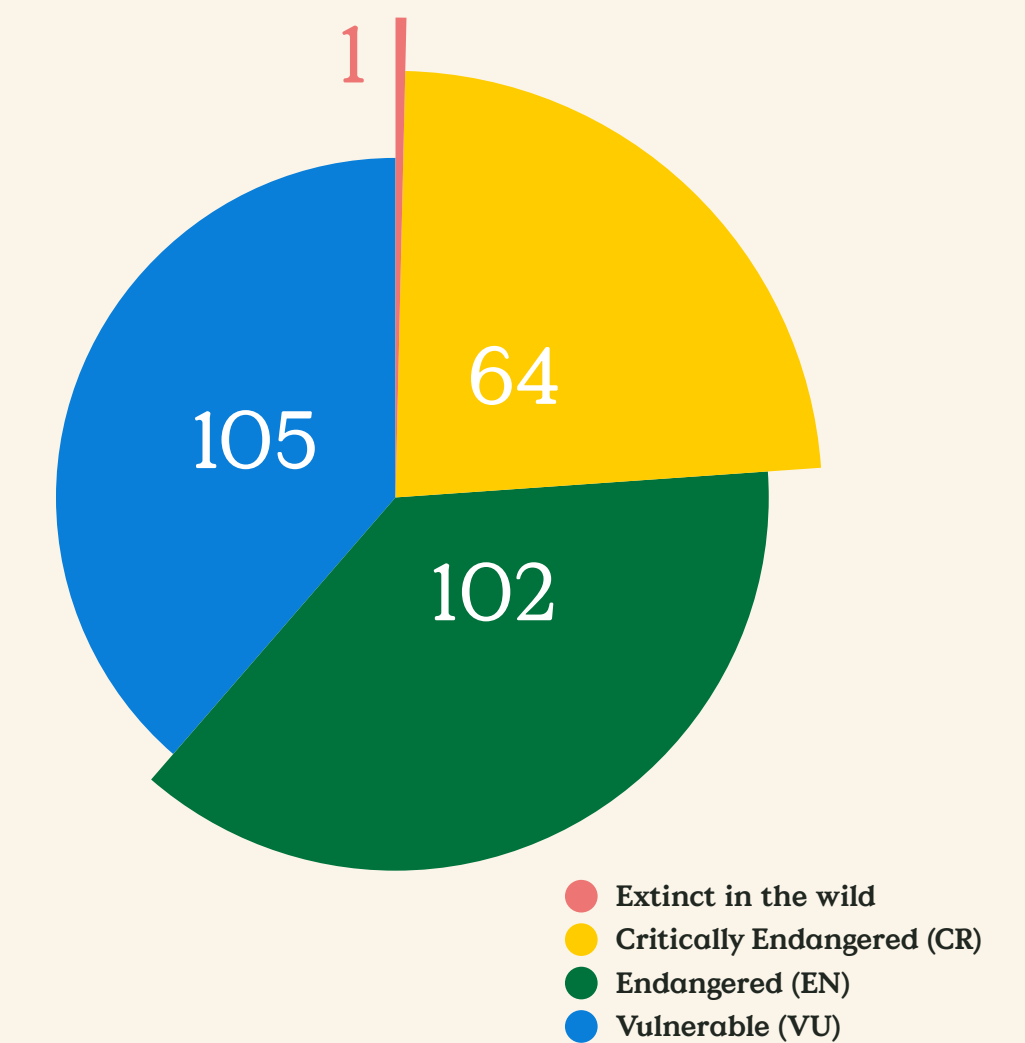
Health surveillance, preventive medicine and pathology are key components of our approach to providing the best healthcare for our animals. The structured health monitoring programmes we have in place include regular vaccinations and parasite checks for mammals and birds. Uniquely, we are also one of the few zoological institutions with a dedicated team of veterinary pathologists. By studying and diagnosing diseases in deceased animals, we gain insights that help improve care for the living. For complex cases, the Veterinary Team consults with specialists from our extensive network.

As of 31 March 2024, we have provided care for over 22,000 specimens of animals across 941 animal species, of which 29% are threatened in the wild. In FY23/24, we experienced a baby boom, welcoming 1,126 births and hatchlings across 151 species.



Veterinary staff conducting checks on a rescued pangolin.

Number of Threatened Species Under Care in FY23/24



Conducting Due Diligence for Animal Transfers

We adhere to legal, ethical, sustainable and humane practices when acquiring or transferring animals under our care. Before any of our animals are transferred, we ensure the receiving institution possesses adequate knowledge and resources to provide for the animal's quality of life and welfare, providing additional training as needed. We also review plans and photographs of each animal's intended living spaces and conduct onsite visits, if necessary.

Releasing Rescued and Rehabilitated Local Wildlife

As one of the designated centres for rescued local wildlife in Singapore, we receive approximately 1,400 rescued animals every year, ranging from pythons, pangolins and civets to eagles and herons. By providing medical care and rehabilitating rescued wildlife, we are contributing to the protection of local biodiversity. Native species rescued and rehabilitated in our wildlife hospital are released back into the wild only when they are deemed fit by our veterinary team and with the approval of NParks, the local wildlife authority.

Animal Welfare Assessment

Animal Welfare Assessment is a tool we use to monitor, understand, and improve the welfare of animals in our care. According to Wild Welfare, "assessing a facility is a valuable management tool that reveals major opportunities for animal welfare and operational improvement, as well as cost reduction."

An assessment is used to:

1. Obtain factual input for management decisions.
2. Provide unbiased management information.
3. Know factually if the zoo (facility) is at risk.
4. Identify areas of opportunity.
5. Improve communication and motivation.
6. Assess individual performance based on facts.
7. Assess the status and capability of infrastructure.
8. Assist with the training of all staff.

Animal Welfare in Action



Zookeeper engaging animals with enrichment activities, promoting their physical and mental well-being.

Zookeepers' Dedication: More Than Just a Job

At Mandai Wildlife Group, our staff recognise the significance of their contributions to the physical and mental well-being of our animals. The dynamic nature of their work is embraced as an integral and rewarding aspect of their roles.

Keeping Our Animals Active

Our sloth bears, for instance, are encouraged to solve nightly "puzzles" to earn an apple which serves as a reward to stimulate their minds and bodies. The behaviours our animals display for visitors are not just for show but are opportunities for our animals to display their natural behaviours.

Going the Extra Mile

Our zookeepers spend hours behind the scenes, conducting research, initiating ways to improve animal welfare at the zoo and observe animal behaviours that inform the management of their enclosures. For example, when we realised that the Malayan Tigers defecate in water to mask their scent, we modified their enclosures to accommodate to this behaviour to improve their comfort levels. Changing the water daily adds to our workload, but our staff unanimously agree that the animals' welfare is paramount.

Case study

Seeing Veterinary Medicine through a New Lens

Our affection for our geriatric penguins led us to address the challenge of their deteriorating eyesight due to cataracts. We pioneered cataract surgery for them, including the world's first custom-made intraocular lens implants for King Penguins. These artificial lenses were custom-made in Germany to fit each penguin's eye and have significantly improved their vision.



Performing cataract surgery with custom lenses for our geriatric King Penguins.

Case study

Advancing Care with Technology

Pododermatitis, or 'bumblefoot', is a condition that affects some of our birds of prey, particularly geriatric birds with arthritis. This disease results in pressures sores, tissue swelling and callouses, and can become disabling and even fatal, if left untreated.



3D-printed shoes help Walter, a hooded vulture, recover and live comfortably in retirement.

A Solution Found in 3D Printed Shoes

Our avian veterinary team collaborated with the Keio-NUS CUTE Center at the National University of Singapore to come up with an effective treatment plan that involved creating silicone shoes cast from 3D printed moulds. The shoes were designed to alleviate pressure on the birds' feet, facilitating recovery from this degenerative condition.

Allowing Our Birds of Prey to Live Out Their Golden Years in Comfort

The first "patient" to be treated with these custom-made protective shoes was Walter, a 21-year-old female hooded vulture, who made a full recovery and is now living out her golden years in a special aviary for retirees of the park's Kings of the Skies Show.

Case study

An Express Trip to a Bigger, Better Home

In April 2023, Singapore's colony of 32 penguins relocated to the Ocean Network Express Penguin Cove, marking the completion of the great migration of birds from Jurong Bird Park to Bird Paradise at the Mandai Wildlife Reserve.

Safety First

While the journey between the two destinations took only half an hour, great care, love and attention went into crating the birds to ensure their safety during the move. Customised transport crates awaited each penguin following a physical check by the veterinary healthcare team. Staff walked the King Penguins into their crates but placed the smaller species like the Humboldt, Gentoo and Northern Rockhopper Penguins carefully into their own compartmentalised crates. All crates had been packed with ice at the bottom to keep the penguins cool and prevent thermal stress as a temperature-controlled truck transported the colony to their new residence.

Creating the Right Climate

Transitioning to their new enclosure, which spans 3,000m² – three times larger than their previous habitat – required careful acclimatisation. For the first three days, we prevented the penguins from entering the water by erecting a temporary acrylic barrier. This measure ensured their safety while they adjusted to their new surroundings. Enhancing their welfare, the new enclosure features a domed sky and special lighting that mimics the Aurora Australis. By adjusting the lighting to stimulate natural day-to-night cycles, we help promote the natural breeding cycles of the penguin colony, fostering the continuity of the colony for future generations.



Penguins at their new, spacious habitat at the Ocean Network Express Penguin Cove.

Case study

Enhanced Well-being by Design

Jurong Bird Park had been a national treasure in Singapore for 52 years. But with the old bird habitat having served its time, new ideas, larger spaces, and a habitat design prioritising the welfare of our feathered friends awaited at a new home. Bird Paradise at Hong Leong Foundation Crimson Wetlands provides a sanctuary for more than 40 colourful species and over 3,500 birds that once called the well-loved park at Jurong their home. In FY23/24, there were 481 hatchlings at Bird Paradise.

Reshaping what a bird park can be

The move had been 10 years in the making. Today, Bird Paradise stands as an important bastion for our conservation efforts and joins the already existing Singapore Zoo, River Wonders and Night Safari as part of the brand new Mandai Wildlife Reserve precinct in Singapore's Mandai area. The new bird habitat reshapes what a bird park could be, with a design intent to provide the birds with optimal living conditions and improved overall welfare while continuing to be engaging to guests.

Habitat by design

The park is laid as a series of eight inter-connected walk-through habitats, geographically themed and connected by educational hubs that celebrate bird-related topics such as feathers, courtship, migration and colour.

The Ocean Network Express Penguin Cove – is a fully indoor, saltwater habitat designed for king, gentoo, rockhopper, and Humboldt penguins, as well as Inca terns. It replicates the sub-Antarctic environment of the Falklands, including a light cycle that mimics natural conditions. By adjusting light exposure, the penguins' moulting process is triggered, helping to maintain their waterproofing. To encourage natural diving and hunting behaviours, special feeding chutes are integrated into the rocky and iceberg structures of the two diving tanks, releasing fish into the water for the penguins to "hunt" as a form of enrichment.

Forest Corridor – existing trees of conservation significance were retained and supplemented by additional planting of native tree species to provide continuous tree lines along the central landscaped boulevard. This 'Forest Corridor' aid the movement of native wildlife birds through the park to adjacent forest habitats.

The Nyungwe Forest Heart of Africa – inspired by African tropical forest and woodlands, and home to many species of African starlings, pigeons, nine species of turacos and six species of African hornbills. The dense forest, with its meandering forest streams, encourages the birds to display their natural behaviours.



The Hong Leong Foundation Crimson Wetlands – Crimson Wetlands replicates the coastal wetland habitats of Latin America where scarlet ibises, roseate spoonbills and American flamingos call home. In the wild, macaws and other parrots flock to clay licks along riverbanks to feast on the mineral-rich clay, which is a good source of sodium for the birds. At Crimson Wetlands, a clay lick wall invites the gathering of macaws and other birds, presenting a visual treat energised by squawks and screeches. Crimson Wetlands use extremely robust beams at the periphery to hold the huge aviary in place. This allows for an aviary that is completely beamless within, allowing for unobstructed flight paths for its inhabitants. In this vast space, the birds fly free while guests enjoy unimpaird views and a truly unique immersive experience.

The Kuok Group Wings of Asia – Drawing inspiration from the rice terraces of Southeast Asia, this habitat demonstrates that birds can also thrive in harmony with humans when given the chance and treated with respect. It is home to four species of Asian hornbills, along with milky storks, lesser adjutant storks, black-necked storks, blackfaced spoonbills and many other species. The tranquil bamboo forests and sloping rice terraces serve more than just an aesthetic function, the labyrinth of bamboo provides a major food source for the animals living in the habitat. Kuok Group Wings of Asia sits on the site of a former village replete with fruit trees. Some of these trees have been retained and carefully integrated into the landscape. During the fruiting seasons, you can feast your eyes on durians, jackfruits and rambutans while our frugivorous birds enjoy the sweet treats.

Sustainable Operations Management

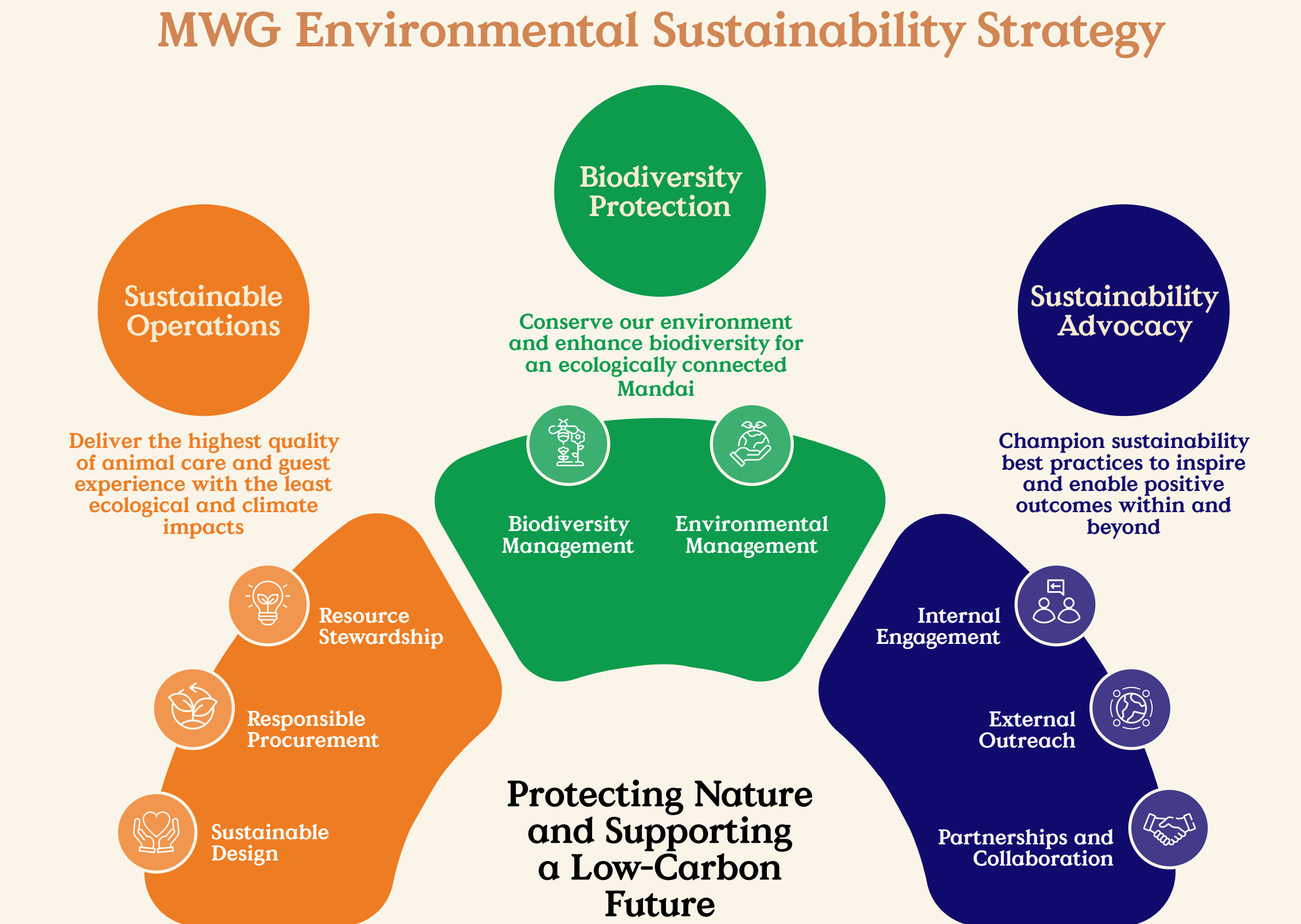


Operating Sustainably

Mandai Wildlife Group is dedicated to conservation of wildlife and the environment. As stewards of the planet, we are committed to lead by example in preserving the world for future generations and restoring a healthier planet by operating in an environmentally responsible manner. Guided by the SBTi Net-Zero standard, we are steadily progressing toward our goal of achieving Net-Zero emissions by 2050.

We are continually exploring innovative solutions to reduce, reuse and recycle in order to meet our sustainability goals, including action against climate change. Reducing our environmental impact and preventing biodiversity loss are top priorities. We promote practices that minimise environmental impact, optimise materials use, support a circular economy and manage waste effectively, both within the organisation and to the broader public.

The following section of this report highlights our sustainability initiatives in energy conservation, emissions reduction, waste reduction and water efficiency. These initiatives demonstrate the creative approaches we are employing to safeguard the planet for the future.



How We Are Making It Happen

On the Road to Sustainable Energy, Water and Waste Management by 2030

Under our resource stewardship mandate, we have developed roadmaps for energy, water and waste to achieve 100% renewable energy by 2030 and reduce the intensity of potable water use in our existing wildlife parks by 25%. We are on track, reducing potable water use

intensity in FY23/24 by 25% from 2020 baseline in the existing wildlife parks at Mandai Wildlife Reserve, through infrastructure upgrades and park-wide water metering to monitor usage and detect leaks.

While achieving zero-waste is a long-term objective, interim targets of 60% waste diversion rate from incineration by 2030 serve as milestones to keep us focused. Our waste strategy is based on the principles of firstly avoiding, then reducing, reusing, recycling and ultimately responsible disposal of waste. Additionally,

Attained the NParks Landscape Excellence Assessment Framework (LEAF) Platinum certification for Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST, as of 2023

Attained BCA Green Mark (Platinum) for Penguin Cove at Bird Paradise, Mandai Rainforest Resort, East Node and Indoor Attractions

it incorporates measures to encourage sustainable production and consumption, alongside effective waste and resource management. To reduce our carbon footprint further, we are electrifying our internal transportation system with a target to convert our internal fleet to electric or low-carbon vehicles by 2030. As of March 2024, we have electrified all trams and buggies and 40% of our park vans, with plans to electrify the remaining fleet in the coming years.

Checks and Balances

We measure each milestone on our sustainability journey by considering the positive and negative impacts, implementing measures to mitigate any adverse effects now and in the future. Our **Environmental Sustainability Policy** guides our decisions and actions regarding resource use, energy and water conservation, waste reduction and environmental management. In line with this policy, we have developed an Environmental Sustainability Strategy that focused on three key areas: Sustainable Operations, Biodiversity Protection and Sustainability Advocacy, each driven by specific initiatives to advance our sustainability agenda.

Energy and Greenhouse Gas (GHG) Management

Towards Net-Zero

Mandai Wildlife Group is committed to achieving Net-Zero GHG emissions across our value chain by FY2050. As a zoological and conservation-focused organisation, we recognise the significant impact of human-induced climate change on biodiversity. We are dedicated to optimising and decarbonising our operations to combat climate change and conserve wildlife.

To guide our decarbonisation effort, we have set near- and long-term science-based emissions targets, approved by the SBTi in 2024. As part of this commitment, we will prioritise direct emissions reductions in alignment with climate science.

Please visit the SBTi [webpage](#) for more information about the initiative.



Progress against our decarbonisation efforts will be monitored and disclosed annually in our sustainability reports. Furthermore, to ensure the completeness and accuracy of our GHG inventory, the Group engages a third-party verifier to conduct an annual assurance on our GHG inventory against the ISO14064-3:2019 verification standards. Our inventory for FY23/24 has been verified in accordance with ISO14064-3:2019 as meeting the Requirements of ISO 14064-1:2019 and GHG Protocol by SGS International Certification Services Singapore Pte Ltd.

You can view the verification statement [here](#).

MWG's Commitments

Near-term

- Reduce absolute Scope 1 and 2 (market-based) GHG emissions by 68.9% by FY2030, using FY19/20 as the base year.
- Reduce Scope 3 GHG emissions by 51.6% per 1,000 visitors by FY2030, using FY21/22 as the base year.
- Increase the share of renewable electricity from 0% in FY2019 to 100% by FY2030.
- Commits to ensuring that 30% of its suppliers, by emissions from purchased goods, services, and upstream transportation and distribution, will have science-based targets by FY2028.

Long-term

- Commits to reducing absolute Scope 1 and 2 (market-based) GHG emissions by 90% by FY2040, using FY19/20 as the base year.
- Commits to reducing Scope 3 GHG emissions by 97% per 1,000 visitors by FY2050, using FY21/22 as the base year.

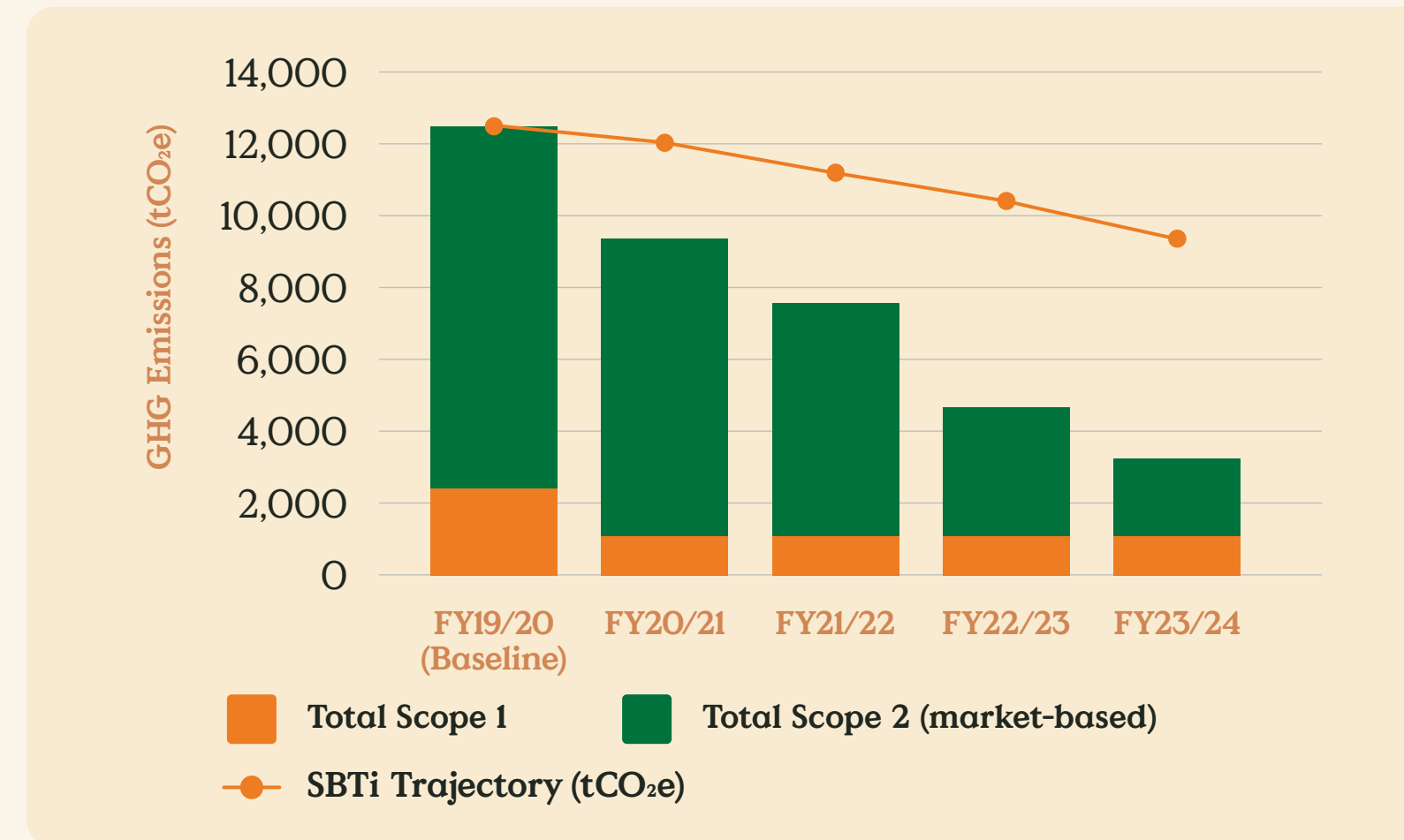
A Clear Pathway to Emissions Reduction

In 2022, we embarked on a journey to develop our roadmap to reduce GHG emissions in line with the SBTi, ensuring that our carbon reduction efforts are consistent with limiting global warming to 1.5°C above pre-industrial levels.

Our carbon accounting framework enables us to actively track and assess our carbon footprint. Key progress indicators include GHG emissions reduction, renewable energy usage, water use intensity, waste diversion rates, and fleet electrification. By 2030, we aim to convert 100% of our internal fleet to electric or low-carbon vehicles and source all energy from renewables. This will be achieved through the phased installation of solar panels on all available rooftops and identifying other renewable energy sources.

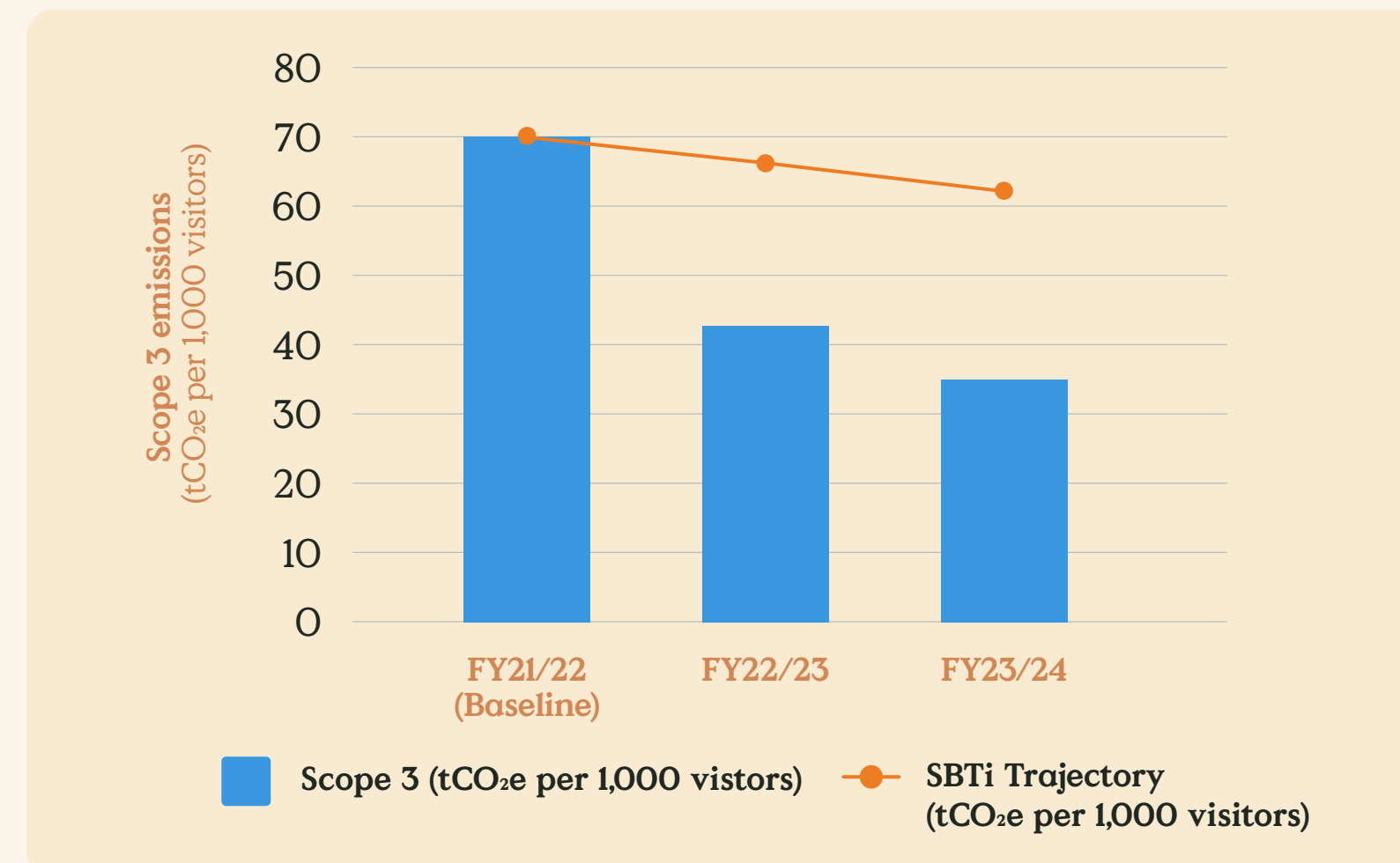
Our Performance Against SBTi Targets

Scope 1 and 2 Progress Towards SBTi Targets



Mandai Wildlife Group has made steady progress towards our decarbonisation efforts, with notable reductions in both Scope 1 and market-based Scope 2 emissions between FY19/20 and FY23/24. In FY23/24, we reduced the total Scope 1 and 2 (market-based) emissions by 75% from our FY19/20 baseline. These reductions are the result of strategic operational optimisation and the implementation of energy efficiency and carbon reduction measures.

Scope 3 Progress Towards SBTi Targets



Mandai Wildlife Group has made substantial progress in reducing Scope 3 emissions per 1,000 visitors since FY2021. In FY23/24, the Scope 3 emissions intensity decreased by 15% compared to FY22/23 and by 49% against our FY20/21 baseline. These reductions reflect our ongoing efforts to improve operational efficiency and implement sustainability initiatives. Aligned with our SBTi strategy, these actions support our interim and long-term goal of achieving Net-Zero emissions by FY2050, demonstrating our commitment to reducing our environmental impact while maintaining our conservation and visitor engagement efforts.

Mandai Wildlife Group GHG Inventory

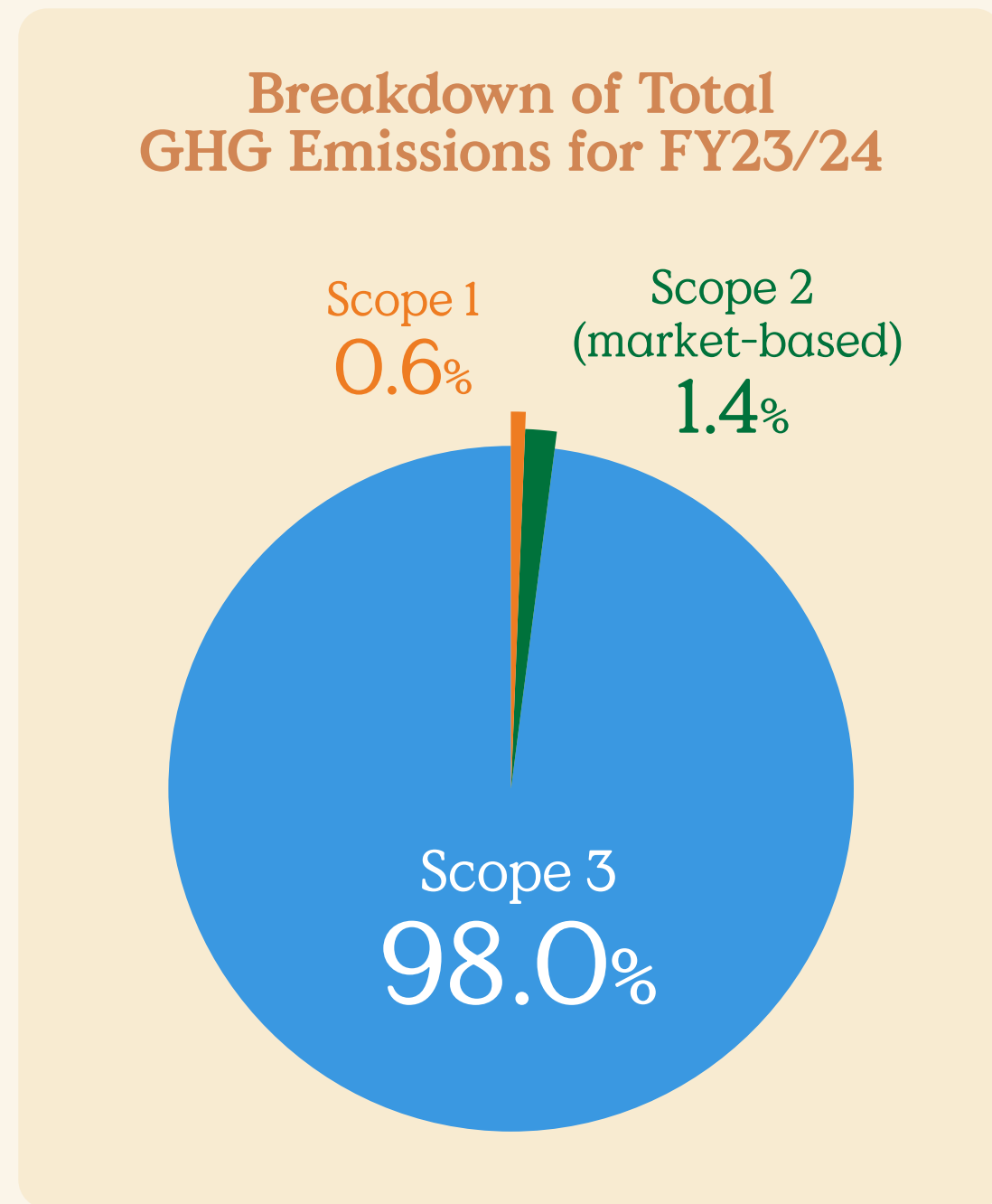
This report marks Mandai Wildlife’s Group’s inaugural disclosure of its GHG inventory. In 2019, we established a carbon accounting framework to track our organisational emissions, which has progressively expanded to include Scope 1, 2 and all relevant Scope 3 categories, in accordance with the GHG Protocol. Our GHG emissions consolidation approach is from an operational control perspective, encompassing the operation of four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST), activities from Mandai X (our Group’s venture division), the development of new parks and the management of non-operational parks such as Jurong Bird Park.

We have selected FY19/20 as the baseline year for Scope 1 and 2 emissions and FY21/22 for Scope 3 emissions. FY19/20 was selected for Scope 1 and 2 as it reflects the most recent business-as-usual year before the COVID-19 pandemic. FY21/22 was chosen for Scope 3 due to the availability of reliable data sources for more accurate emission estimates. Mandai Wildlife Group is committed to accurately tracking our decarbonisation progress against these baselines. If significant changes occur that affect our baseline GHG emissions by more than 5% cumulatively, we will recalculate our baseline and subsequent years’ emissions. Some scenarios include:

- a. Changes in organisational structure, such as mergers, acquisitions, and divestitures.
- b. Modifications in the methodology for calculating the baseline emission inventory, such as the release of emission factors more pertinent to our operations (for e.g., local emission factors) or updated emission factors.
- c. Identification of a significant error or a series of cumulative errors that can be deemed as material when combined together.

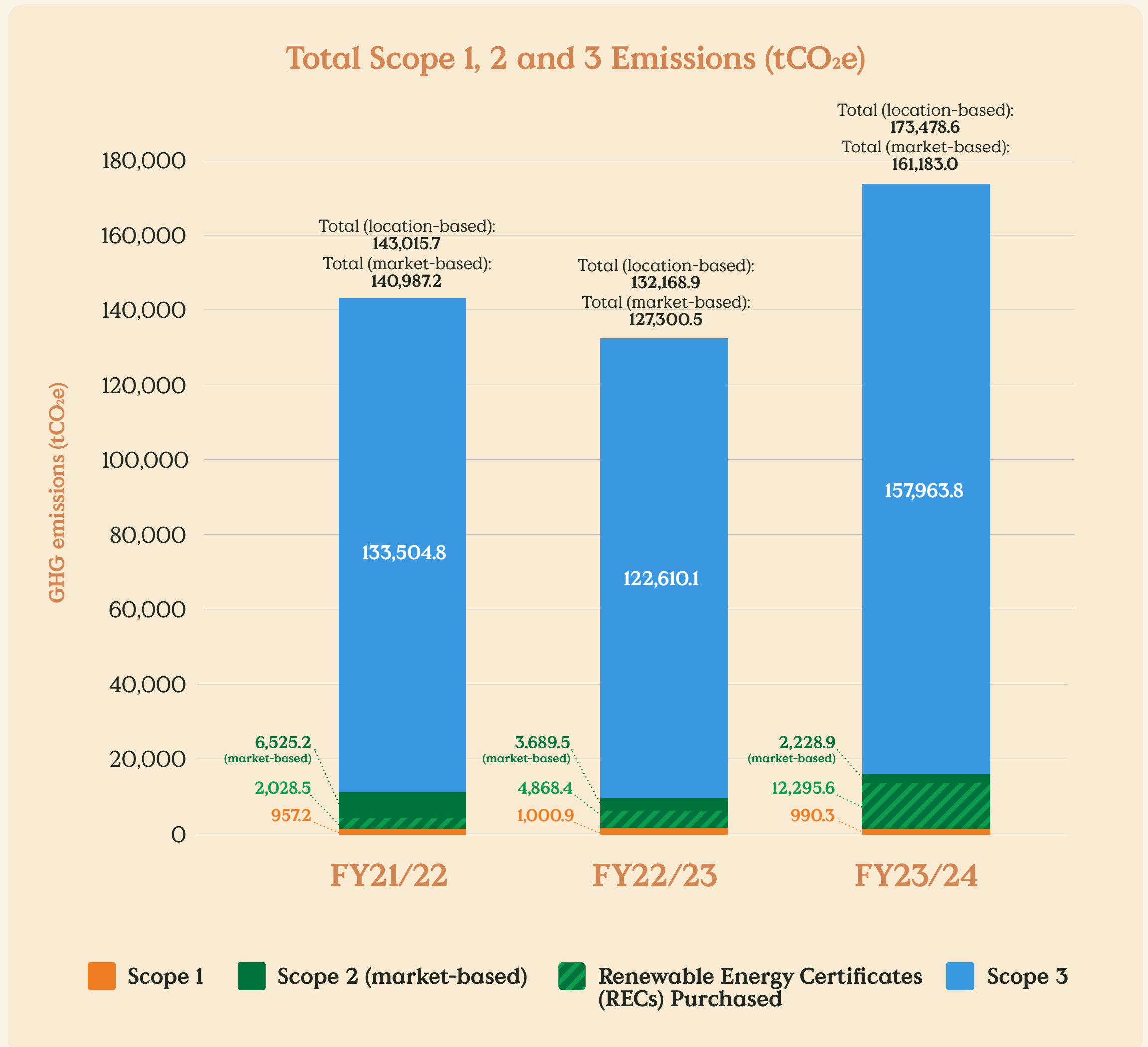
According to the GHG Protocol guidelines, recalculations are not required in the following scenarios:

- a. For facilities that did not exist in the baseline year.
- b. For natural business growth or decline.
- c. For changes in outsourcing/insourcing activities, if accounted for under Scope 2 and/or Scope 3.



GHG Emissions Performance for FY23/24

Mandai Wildlife Group’s total GHG emissions for Scope 1, 2 and relevant Scope 3 in FY23/24 was 161,183.0 tCO₂e and 173,478.6 tCO₂e for Scope 2 market-based and location-based emissions respectively. Of which 98% of the total emissions are attributed to Scope 3 emissions followed by Scope 2 at 1.4% and Scope 1 at 0.6%. Scope 1 and 2 market-based emissions stood at 3,219.2 tCO₂e, a 31% reduction from the previous year and a 75% reduction compared to our FY2019 baseline of 12,789.06 tCO₂e. Total Scope 3 emissions for FY23/24 were 157,963.8 tCO₂e. Our Scope 3 emission intensity decreased by 49% from 70.28 tCO₂e per 1,000 visitors in FY21/22 (our baseline year) to 35.97 tCO₂e per 1,000 visitors in FY23/24.

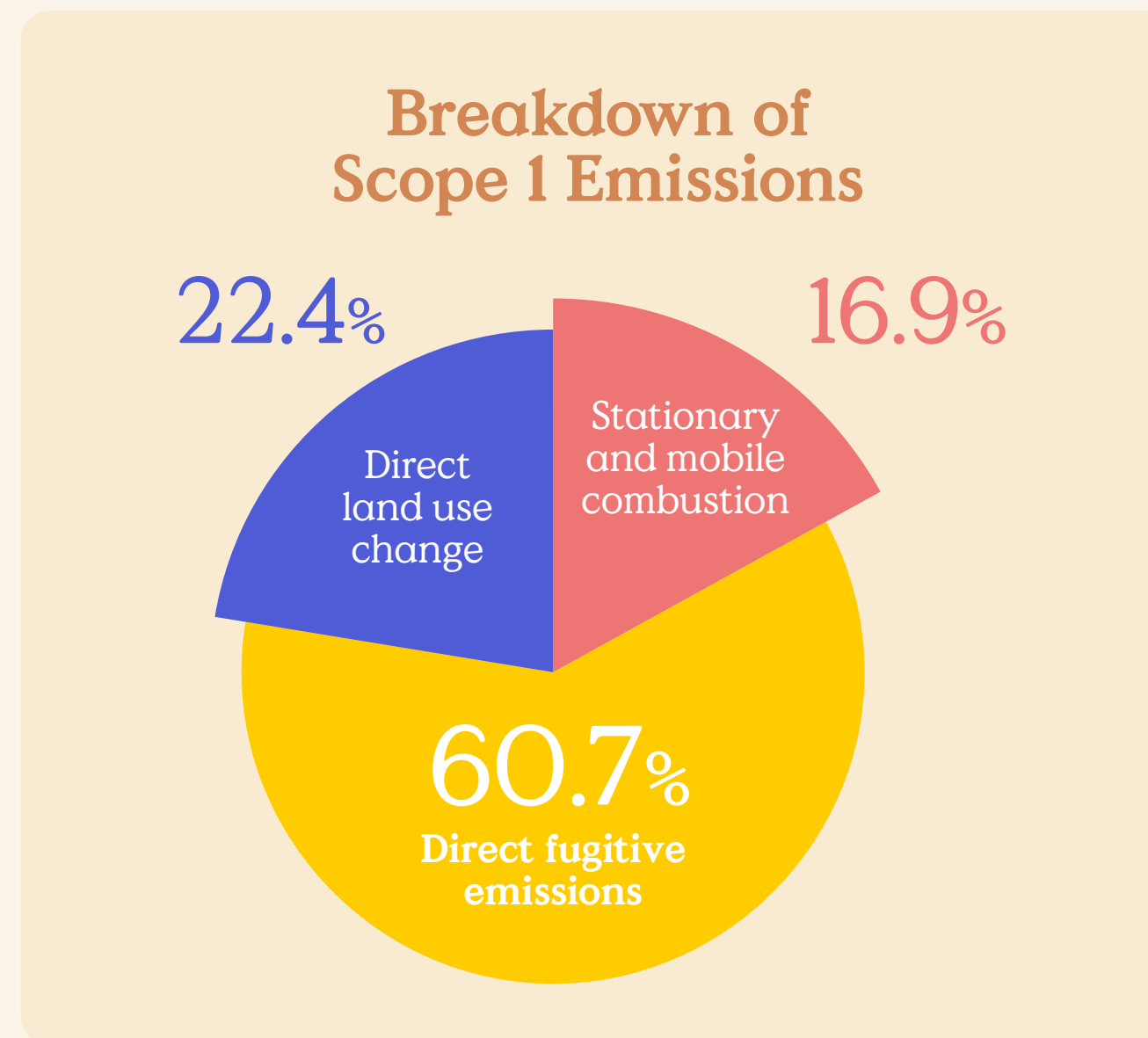


Scope 1 and 2 Emissions

During FY23/24, our Scope 1 emissions had a slight decrease of 1.1% to 990.3 tCO₂e compared to the previous year. In contrast, our Scope 2 (location-based) emissions increased by 70% to 14,524.5 tCO₂e in FY23/24, up from 8,557.9 tCO₂e in FY22/23. This significant increase is largely attributed to the opening of Bird Paradise and Mandai Wildlife WEST, as well as increased construction activities for the Mandai Rejuvenation Project.

However, after accounting for the retirement of 29,500 RECs from a solar facility in Vietnam, purchased according to the Singapore Standard (SS) 673: Code of Practice for RECs, our Scope 2 (market-based) emissions decreased by 85% to 2,228.9 tCO₂e. This resulted in a 40% reduction in Scope 2 (market-based) emissions from 3,689.5 tCO₂e in FY22/23.

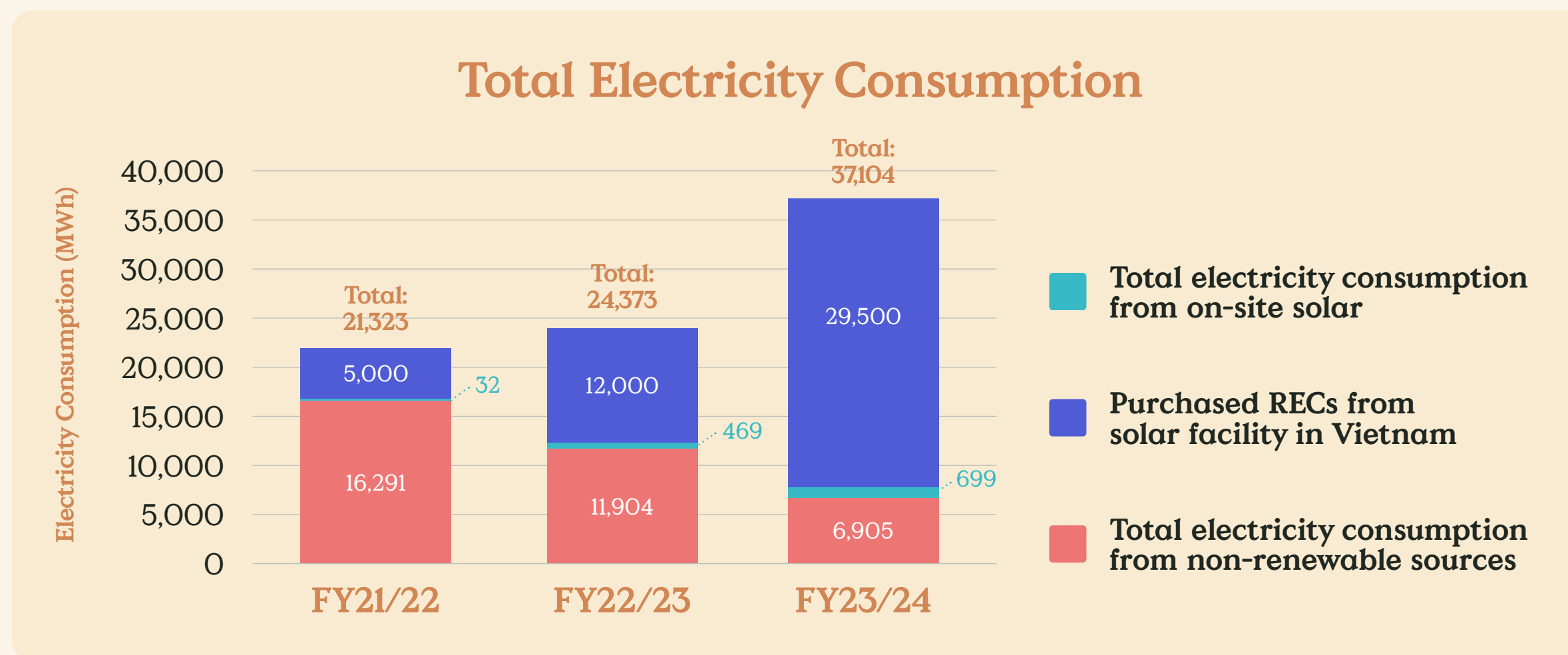
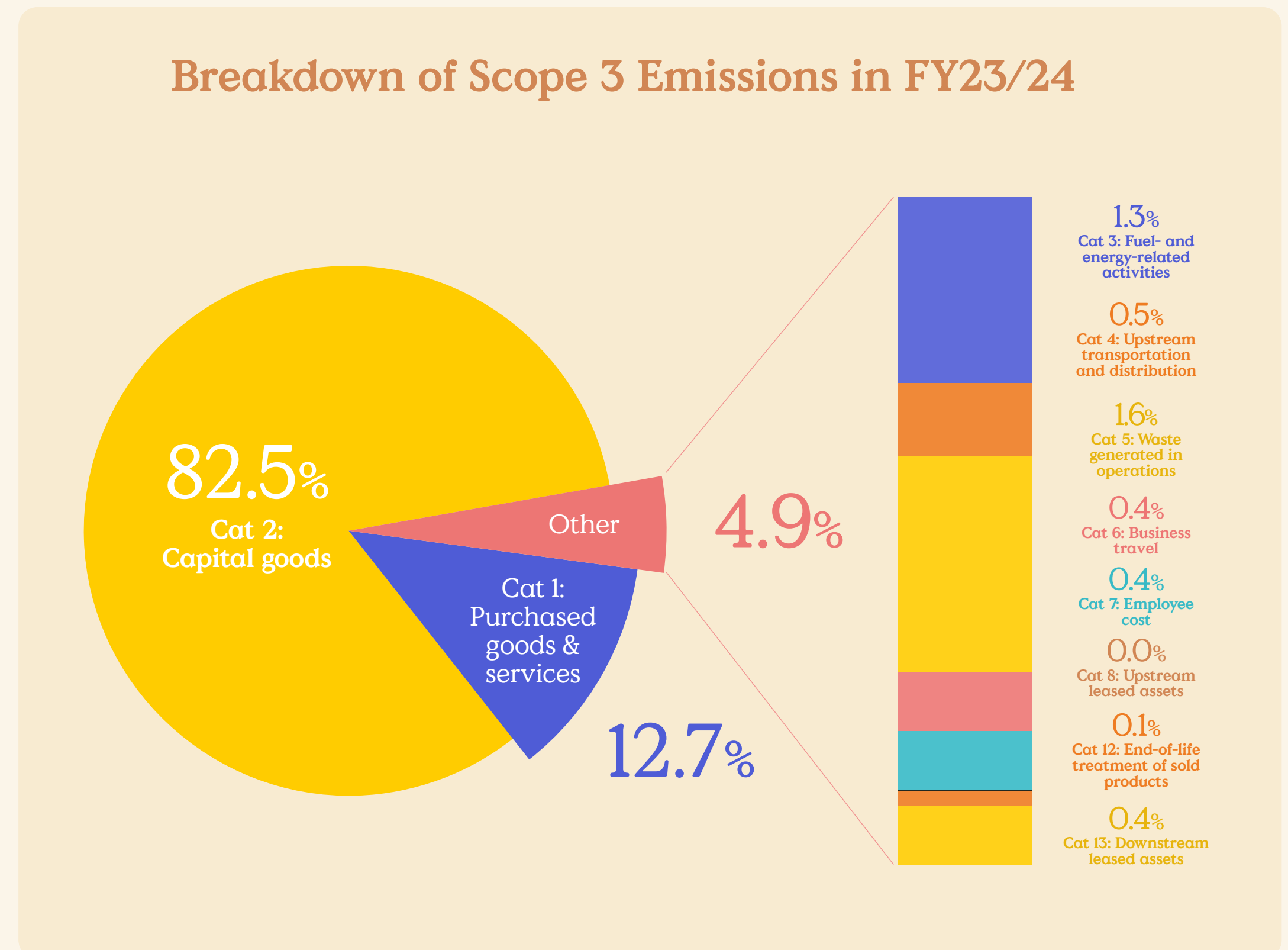
In FY23/24, our total electricity consumption reached 37,104 MWh, reflecting a 52% increase in consumption from the previous year, primarily



due to the opening of new parks and the heightened activities for the Mandai Rejuvenation Project. Nonetheless, about 81% of the total electricity consumption were from renewable sources of which 1.9% were provided by our on-site solar generation while the remaining 79.5% were from the RECs purchased from the solar facility in Vietnam. Notably, we have increased our onsite solar energy generation by 49% from 469 MWh last year to 699 MWh this year.

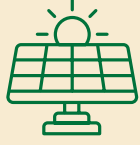

Scope 3 Emissions

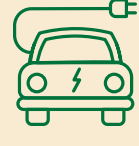

In FY23/24, our total Scope 3 emissions for all relevant categories amounted to 157,963.8 tCO₂e. The majority of these emissions (around 82%) came from Category 2: Capital Goods. Overall, Scope 3 absolute emissions increased by 29%, primarily due to increase visitorship with the opening of new parks, and construction activities from the Mandai Rejuvenation Project. Despite the overall increase in Scope 3 emissions, we achieved a substantial reduction of around 49% against our FY21/22 SBTi baseline for Scope 3 emissions intensity per 1,000 visitors.



Energy and Emission Initiatives

Targets	Status
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<p>100% of our electricity consumption generated from renewable sources through on-site solar, Purchased RECs and/or the Virtual Power-Purchase Agreement by 2030</p>	<p>On track 81%</p>

	
<p>100% of our internal fleet will consist of EVs or those with low-carbon emission fuels by 2030</p>	<p>On track All trams, buggies, and 40% of vans used in our parks have been electrified</p>

FY23/24 Highlights

Added **243 kWp** of solar generation capacity in Mandai Wildlife WEST and Bird Paradise



Solar panels installed across Mandai Wildlife Reserve harness clean energy, supporting sustainable operations.

Installation of solar panels

As part of our goal to achieve 100% renewable electricity by 2030, we are gradually installing on-site solar panels on all available and suitable rooftops across both new and existing parks. This phased approach is central to our strategy of integrating and maximising the use of solar energy throughout the Mandai precinct.

Total installed capacity of **651.3 kWp** and **1,190** Solar panels installed across Mandai Wildlife Reserve

Capacities of existing installations across Mandai:

Location	No. of panels	Total generation capacity (kWp)
Mandai Wildlife EAST	686	367.0
Quarantine Building	77	41.2
Mandai Wildlife WEST	178	102.4
Bird Paradise	249	140.7
Total (as of FY23/24)	1,190	651.3



Electric trams transport guests within our wildlife parks, reducing greenhouse gas emissions as part of our green transportation initiatives.



EV chargers have been installed for public use in our carparks.

Green Transportation Initiatives

Our parks span vast areas, with trams and buggies essential for transporting guests and staff. Previously powered by petrol, these vehicles have now transitioned to Electric as part of our sustainability initiatives, reducing our GHG emissions by 70 tCO₂e. Additionally, we operate two electric vans, with a target to convert 100% of the Group's internal fleet to electric or low-carbon fuel vehicles by 2030.

To promote sustainable transportation and encourage EVs adoption among our guests, we have installed ten EV chargers at Mandai Wildlife EAST and six at Mandai Wildlife WEST car parks.

Phasing Out Beef Products to Reduce Carbon Emissions

To reduce GHG emissions from our Mandai Wildlife Group operated F&B outlets, we stopped selling beef products in 2022. Despite accounting for only 2% of F&B consumption, beef products contributed to 14% of F&B carbon emissions. Additionally, we have ensured that at least 20% of menu options are plant-based to encourage more sustainable food offerings.

Development of the Sustainable Design Guidelines

Mandai Wildlife Group has developed Sustainable Design Guidelines to serve as a blueprint for future projects, ensuring environmental sustainability is incorporated into the planning and construction of all new developments.

Tenant Sustainability Requirements

We encourage our tenants to adopt sustainable practices by following Mandai Wildlife Group's Sustainability Requirements for Fit-out, ensuring their operations align with our commitment to environmental responsibility.

Upcycling Initiatives

Our sustainability efforts include repurposing felled trees from the Mandai Rejuvenation Project into furniture and décor. Examples include benches at the Mandai Wildlife WEST bus stop and tables at tenant restaurants like Pavilion Banana Leaf, all crafted from upcycled wood.

Staff Engagement in Sustainability

We prioritise environmental education for our team by briefing new joiners on our Environmental Sustainability Strategy and providing sustainability e-training for all staff. Our internal campaigns, educational posters in common areas and activities such as staff recycling workshops, help to embed sustainability into our corporate culture.



Energy-saving habitat design at Penguin Cove maintains cold Antarctic conditions.

Case study

Energy-Saving Solutions for Penguin Habitats

In Singapore's warm tropical climate, we have embraced advanced, energy-efficient technologies to sustainably maintain a cool and comfortable habitat for our penguin residents, closely mirroring their native Antarctic conditions. The relocation of the penguins from Jurong Bird Park to Penguin Cove at Bird Paradise presented an opportunity to redesign their enclosure with a emphasis on energy conservation and improved living conditions.

The first step in the planning focused on maintaining temperature while conserving energy and blocking outside heat. The installation of high-efficiency, magnetic-bearing, centrifugal chiller plant in Penguin Cove has achieved 40% energy savings, alongside a transition to 100% LED lighting. Overall, the new habitat design achieved an overall energy saving of 30.4% compared to the baseline model.





Visitors enjoy a close-up view of penguins in their energy-efficient habitat at Penguin Cove.

Material Efficiency, Circularity and Waste Management



The global impacts of decades of disposable consumption are increasingly evident. The waste management strategies we implement today are informed by past experiences, aimed to ensure that our actions are timely and effective.

Mandai Wildlife Group is dedicated to achieving a 60% waste diversion rate from incineration by 2030. Our waste management strategy follows a hierarchy of avoiding, reducing, reusing, recycling and responsibly disposing of waste. We aim to extend our impact by engaging the local community in waste reduction initiatives and educating on sustainable waste management practices.

Targets	Status
 <p>Achieve a waste diversion rate from incineration of 60% by 2030</p>	 <p>On track 22%</p>



A waste audit was conducted during the Waste Service Journey Mapping Exercise to better understand our disposal habits.

FY23/24 Highlights

Increased our recycling rate to around **22%** for our existing parks, from **20%** in the previous FY



Conducted a Waste Profiling and Waste Service Journey Mapping exercise

Achieved a **29.3%** reduction in waste generated intensity from **1.16 kg/guest (FY22/23)** ↓ **0.82 kg/guest**

While working towards our waste management goals, we recognise the logistical and financial challenges of implementing new systems. Despite these hurdles, we remain committed to developing innovative solutions to minimise waste and repurpose waste streams.

Waste Performance

In FY23/24, we generated 3,544 tonnes of waste, with 2,782 tonnes disposed of and 762 tonnes recycled, resulting in a recycling rate of 21.5%, up from 19.7% in FY22/23. We also reduced waste generation intensity, to 0.82kg per visitor, an improvement from 1.16kg per visitor the previous year.

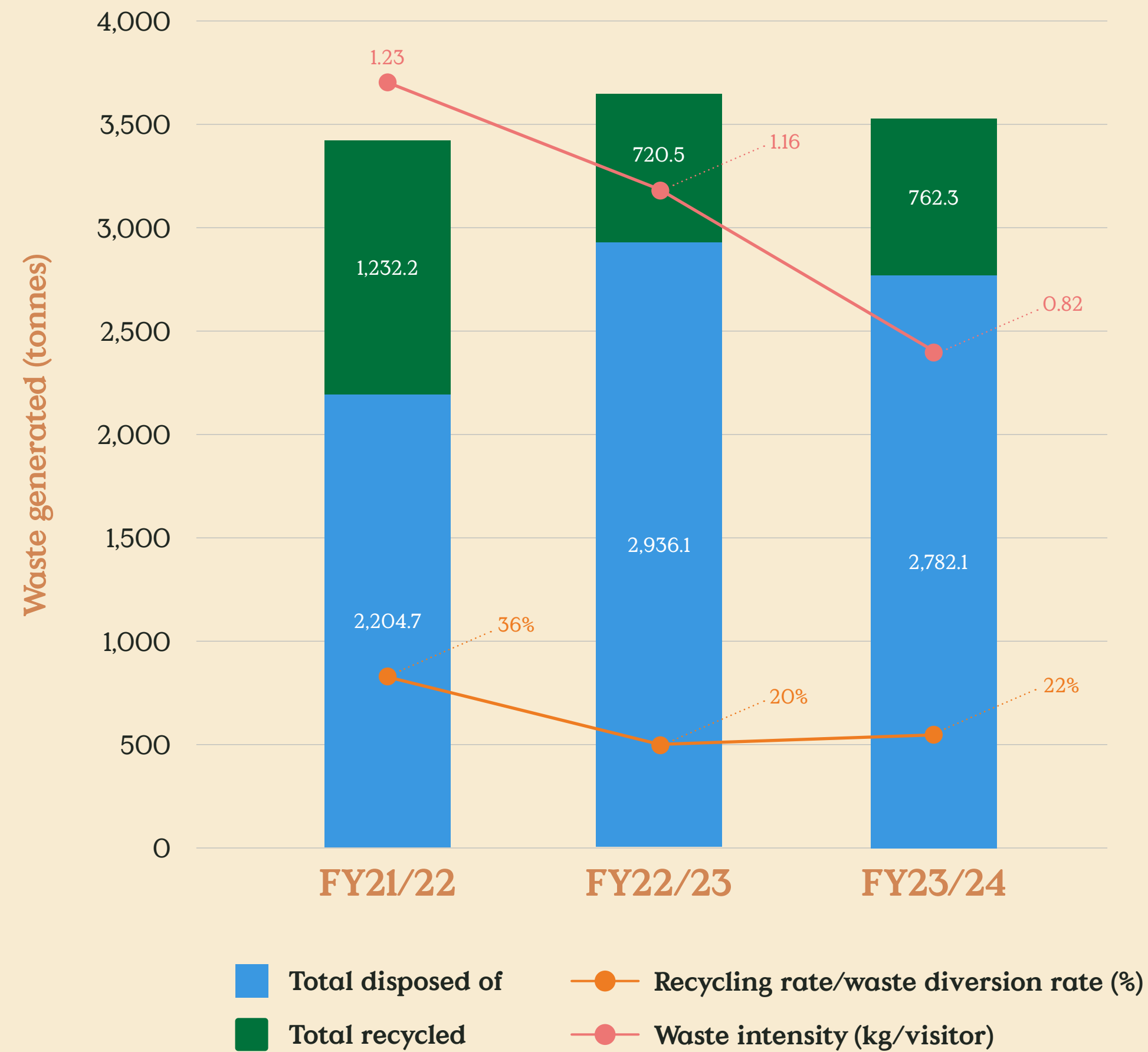
This performance underscores our commitment to improving waste management practices and recycling efforts. Going forward, we aim to further increase our recycling rate and reduce total waste generated per visitor, reinforcing our dedication to environmental stewardship and sustainable operations.

Breakdown of Total Waste Disposed and Recycled in FY23/24

Breakdown of Waste Disposed (tonnes)		
General Waste	2,048.8	73.6%
Animal Dung	733.3	26.4%
Total Waste Disposed	2,782.1	100%

Breakdown of Waste Recycled (tonnes)		
Cardboard	40.6	5.3%
Commingled Recyclables	7.2	0.9%
Horticulture	714.5	93.7%
Total Waste Recycled	762.3	100%

Total Waste Generated (tonnes)



Waste Management Initiatives

Understanding our Waste

To inform our waste management strategy to achieve a 60% waste diversion rate by 2030, we adopted a data driven approach by conducting a Waste Profiling and Waste Service Journey Mapping exercise in 2023. The exercise was designed to assess the disposal habits of key stakeholders and understand barriers and challenges in waste minimisation and recycling. About 30 staff members and 103 park visitors were interviewed as part of the stakeholder engagement process to improve the Group's understanding of visitor behaviour and perceptions around waste. The exercise also provided a detailed breakdown of the types and amount of waste generated in the parks, using the data collected to identify opportunities for optimisation of resource use. The findings will be used to enable targeted measures towards waste reduction and increased recycling in the parks, with efforts contributing towards the Group's waste diversion goal and Singapore Green Plan's target to reduce waste-to-landfill.



Black Soldier Flies and Madagascar Hissing Cockroaches compost food waste, supporting a closed-loop system.



Macaws explore an upcycled playground made from repurposed materials at Singapore Zoo.



An onsite food waste digester.

Vermicomposting and Reuse of Food and Horticultural Waste

We are trialing the use of Black Soldier Flies and Madagascar Hissing Cockroaches to compost raw food waste from our F&B kitchens and animal food waste generated at the parks. The invertebrates are in turn used as animal feeders, creating a closed-loop system. Additionally, our food waste digester converts up to two tonnes of food waste per day into liquid fertiliser which can be used to fertigate plants. We also repurpose leftover browse and horticultural waste as mulch and animal bedding in addition to upcycling other waste streams and recyclables.

Upcycled Playground Where Animals Have Fun

In the spirit of "waste not, want not", the animal playground at Singapore Zoo is furnished with

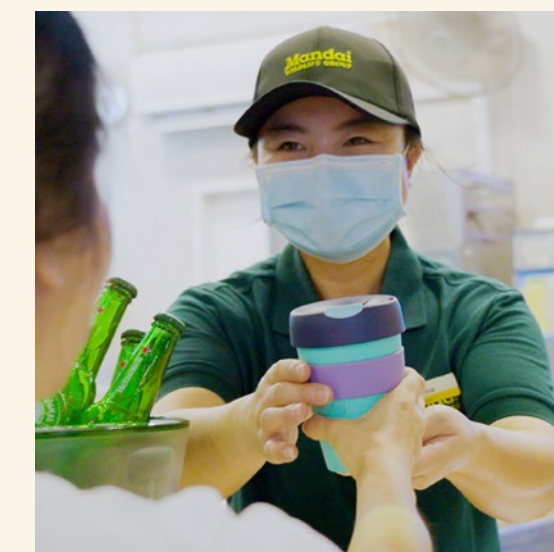


Staff learning about animal enrichment tools that are made from upcycled materials.

a variety of upcycled items, that we have been able to salvage and reuse, rather than dispose of. Because of this, we have been able to divert remnants of the polar bear's old exhibit, old rockwork, wood from tree felling in the park, wheels from an old tram and even unwanted firehoses to spark the interest of our animals.

No Single-use Plastics and Encouraging BYO

We have made significant inroads towards achieving our waste diversion goal through the 100% elimination of single use guest-facing fossil-based plastic items like carrier bags, bottled drinks and cups in our parks since 2022. Instead, guests are encouraged to use the on-site water dispensers to refill their bottles. At our F&B outlets, guests that dine-in are served with reusable tableware. To further tackle waste reduction in the parks, we launched a Bring-Your-Own (BYO) Campaign from January to April 2024. This initiative focused on reducing waste from takeaway containers and cups. Key



BYO campaign in action.

elements of the campaign included introducing a charge for disposable items, applicable to both guests and staff, and implementing a BYO Reusables Card for staff, which incentivised them to redeem one free drink for every ten instances of BYO. Over the four-month campaign, we recorded 2,426 instances of staff bringing their own containers.

Case study

Recycled Shopping Bags on the Blockchain

We worked with Waste2Wear, a company that specialises in sustainable and eco-friendly textile solutions to provide shopping bags made entirely from recycled plastic polypropylene parts of discarded fridges and domestic appliances. The bags offer significant environmental savings by using 88% less energy, 71% less carbon and 46% less water in their production, compared to the production of the virgin materials. Moreover, the circular journey is transparent throughout the supply chain by means of the unique Waste2Wear blockchain technology.

Our joint initiative received the esteemed Singapore Packaging Star Award 2023 for Commercial Environmental Sustainable Packaging, a testament to our commitment to innovative and responsible packaging solutions. This accolade, awarded by the Packaging Council of Singapore under the Singapore Manufacturing Federation, celebrates our contribution to sustainable design and material use, setting a benchmark for industry excellence.



Upcycled shopping bags made from recycled plastic, displayed at the shop as an eco-friendly option.



Mr. Wilfred Yu, Assistant Vice President, Sustainable Solutions at Mandai Wildlife Group, receiving the Singapore Packaging Star Awards 2023 in the Commercial Environmental Sustainable Packaging category.



Showcasing the upcycled shopping bag to Senior Minister of State for Sustainability and the Environment, Dr. Amy Khor.

Water and Effluents Management



Water is the lifeblood of all living systems, vital for sustaining life and preserving the delicate balance of ecosystems. At Mandai Wildlife Group, responsible water management is essential not only to safeguard the health of the diverse species in our care but also to protect the surrounding natural habitats. As stewards of conservation, we are committed to sustainable practices that reduce our water footprint, ensuring the resilience and long-term viability of our operations.

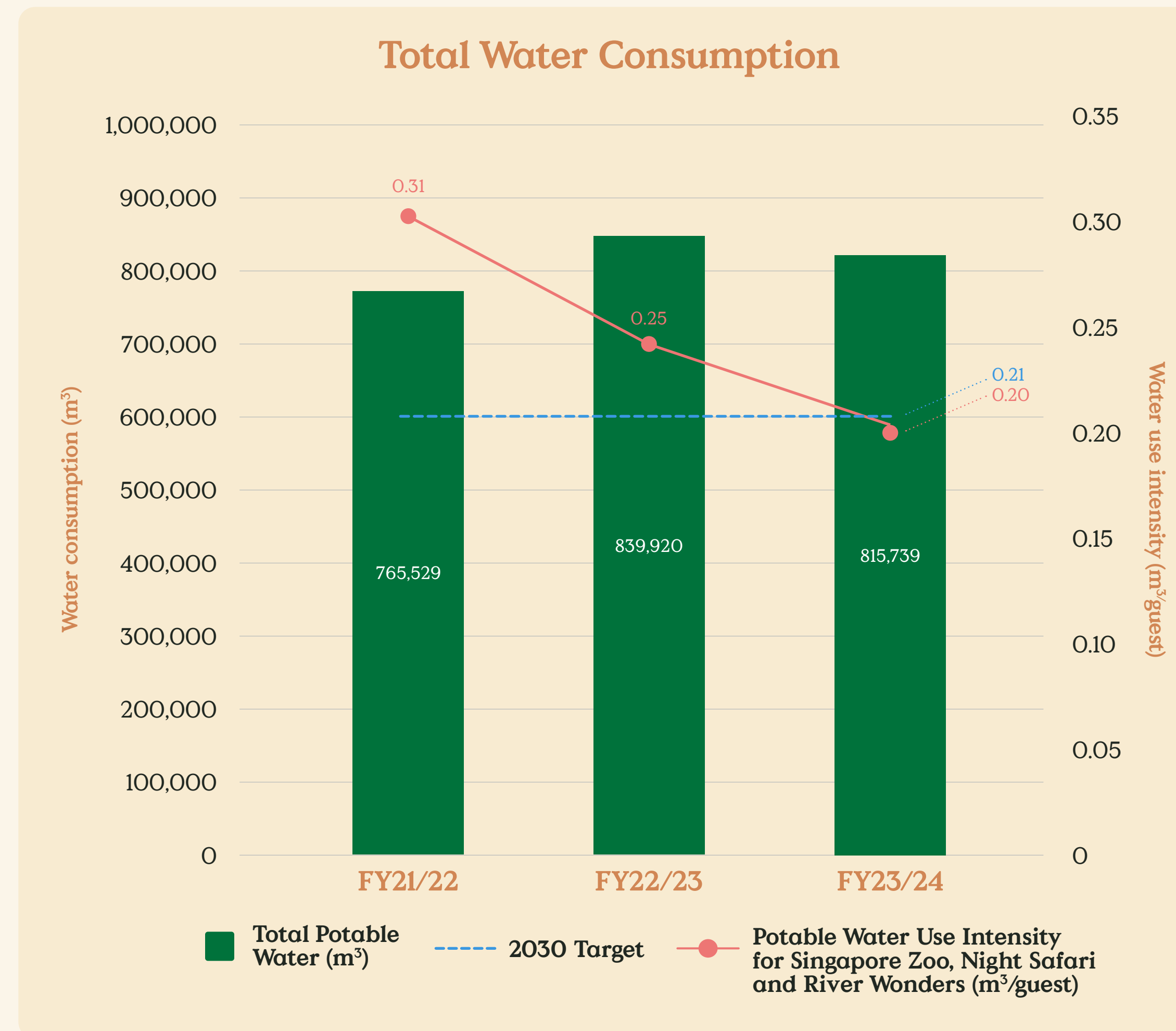
Taking a Multi-Pronged Approach

Our water management strategy focuses on reducing consumption, increasing recycling, and maintaining high water quality. Through innovative practices like water recycling and rainwater harvesting, we embody efficiency and sustainability in every aspect of our operations.

Through innovative technologies, best practices and metering systems to monitor usage and detect leaks, we aim to optimise water use across our Facilities — from animal enclosures to horticultural landscapes and visitor amenities. This commitment to water sustainability reflects our dedication to environmental stewardship and aligns with global efforts to combat water scarcity and climate change.

Water Performance

In FY23/24, our total potable water consumption reached 815,739m³. This represents a 3% decrease from 839,920m³ in FY22/23, largely driven by the adoption of water efficient design for the newly launched Bird Paradise and Mandai Wildlife WEST, and the closure of Jurong Bird Park. To address this, we are implementing water conservation measures and exploring sustainable water management practices to minimise the impact of our activities.



FY23/24 Highlights

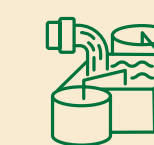
Reduced our potable water intensity for existing parks to

0.20m³/guest



Awarded the Distinction Award (Water Reuse Project of the Year) at the Global Water Awards 2023, for our Wastewater Recycling Plants

Target	Status
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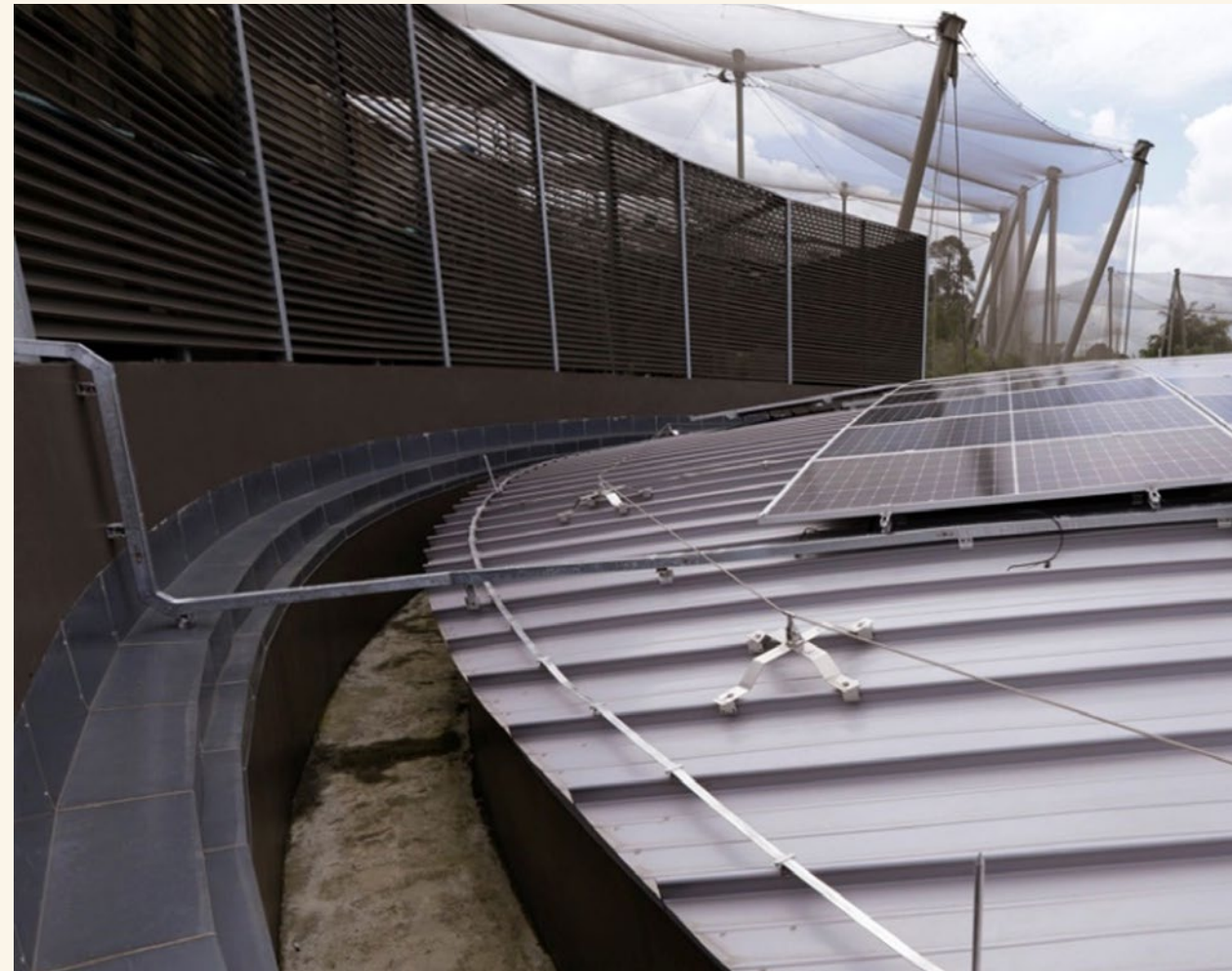
Potable water use intensity for Singapore Zoo, Night Safari and River Wonders reduced by 25% from 2020 baseline by 2030 (target: 0.21m³/guest)



On track
0.20m³/guest

Note: while we have met our initial goal, we continue to judiciously manage our water consumption to ensure that this trend is sustained over the long run.

Water and Effluents Management initiatives



The rainwater harvesting system at Penguin Cove which collects and stores water for plant irrigation and cleaning purposes.



The bio bed filter system at River Wonders recycles wastewater using plants like pandan and alligator-flag.

Harvesting Rainwater in Penguin Cove

We have introduced rainwater harvesting at Ocean Network Express Penguin Cove in Bird Paradise, specifically designed to collect and store rainwater in an underground tank for irrigation and floor washing. This system is expected to fulfil 5% of our water needs, and we are exploring similar installations in other parks to further reduce reliance on potable water.

Manatee Water Recovery System

To maintain water quality in the manatee habitat at River Wonders, we have utilised a bio bed filter system which recycles wastewater from the manatee tank using special plants like pandan and alligator-flag grown in the bio bed to remove contaminants in the water. The alligator-flag also enhances local biodiversity by providing habitats for bees and dragonflies. Annually, this water recovery system recycles 29,200m³ of water, accounting for nearly half of our total annual water savings.

Responsible Water Use at Mandai Wildlife WEST and Bird Paradise

Non-potable water, including rainwater, recycled wastewater, and NEWater supplies 49% of the irrigation needs at Mandai Wildlife WEST and Bird Paradise. Native and adaptive vegetation further reduces the need for irrigation and maintenance.



Advanced Wastewater Recycling

Awarded the Distinction Award (Water Reuse Project of the Year) at the Global Water Awards 2023, our Wastewater Recycling Plants utilise cutting-edge membrane bioreactors, ultraviolet treatment and chlorine disinfection to convert animal wastewater into high-quality, non-potable water for park use. These advanced facilities reduce our reliance on fresh water and minimise our environmental impact, ensuring the treated water meets rigorous standards for reuse. This initiative is expected to supply 21% of our water needs in the long-term.



The advanced wastewater recycling plant transforms animal wastewater into high-quality, non-potable water for park use.



An aerial view of our wastewater recycling plant.

Topic of Interest

Climate Change Resilience and Adaptation

We are proud to lead in sustainability and climate action, supporting Singapore’s Green Plan 2030. Recognising the importance of environmental sustainability and energy transition on climate change, we have implemented strategies to bolster our operations against climate-related risks while maintaining adaptability to environmental shifts.

As human-induced climate change contributes to biodiversity loss, we recognise our responsibility to operate sustainably throughout our business operations. Specifically, we are focused on optimising and decarbonising our operations rapidly; protecting and enhancing our biodiversity and environment in and around Mandai precinct and in Southeast Asia; and being a strong advocate to our guests and partners for the responsible and sustainable use of resources.

The way we choose to operate, as a guardian of our environment, significantly enhances the value of our environmental initiatives. Our purpose and vision influence how we and our stakeholders make decisions and also play a vital role in our long-term sustainability and success.

Combatting the Singapore Heat with Thoughtful Climate Comfort Measures

In Singapore’s tropical climate, ensuring the well-being of our animals involves innovative cooling strategies. We have designed our animal enclosures with an abundance of shaded spaces, ensuring that all animals can seek shelter when necessary. To further mitigate the effects of warm and humid environment in Singapore, we strategically schedule training and other activities for cooler times of the day, thereby reducing heat exposure for both animals and staff.

Enrichment is a key component of our animal care programme, and we have introduced creative cooling treats, such as fruits and vegetables frozen in ice, to provide both mental stimulation and a refreshing respite from the heat. Zookeepers ensure constant access to fresh water and closely monitor each animal’s well-being. Behind the exhibits we have set up cooling areas with cooling fans and hoses for rest during the hottest hours. Special attention is given to heat-sensitive species, such as orangutans, elephants, and pigs, to prevent heat stress, which may manifest as panting, decreased appetite, or changes in appearance.

Our approach to managing heat stress includes thoughtful enclosure design, schedule adjustments, enrichment, and specialised care, particularly for heat-sensitive species. This ensures that all animals within our facility can thrive in Singapore’s tropical climate.



Frozen fruit treats offer cooling relief and mental stimulation for animals during hot days.



Airbitats provide energy-efficient cooling for guests without the use of refrigerants, thereby reducing emissions while ensuring comfort.

Case study

Efficient Cooling Technologies for Guests

We have installed over 30 units of Airbitats* across our parks to enhance guest comfort. These units cool our open areas effectively, employing evaporative cooling method that avoid the use of refrigerants that contribute to GHG emissions, and are 80% more energy efficient than comparable air-conditioners.

Sheltered linkways provide shaded pathways for our guests, with surrounding trees planned to enhance the shade as they grow.

Our designs incorporate natural ventilation and daylight, including the restrooms, which feature an open design with direct connection to the natural environment.

*Airbitats are outdoor coolers designed to cool open spaces using evaporative cooling method, and the use of chemical refrigerants and CFCs, or emissions of harmful chemicals.



Team members gathered at Bird Paradise, celebrating collaboration and shared commitment to conservation efforts.

People

In this section

- 39** Community Engagement and Advocacy
- 43** Visitor Health, Safety, Experience and Satisfaction
- 45** Employee Health, Safety and Well-being
 - 45** • Employee Well-being
 - 46** • Workplace Health and Safety
 - 47** • Diversity, Equity and Inclusion
 - 48** • Talent Management and Development
- 49** Corporate Governance and Ethics

Angela Lim's Journey to Work-Life Harmony

“At home, I can spread my work across the day, taking breaks for personal tasks like preparing food for my daughter. It’s a rhythm that leaves me more centred and, in turn, amplifies the quality of my work. There is also a newfound joy and gratitude that permeates everything I do. Because of the mutual trust and appreciation, I am more motivated to work harder and give back to the company that has given me this much.”

Angela Lim

Guest Experience Manager, Mandai Wildlife Group

As a Guest Relations Officer at Mandai Wildlife Group, Angela Lim is well trained in putting the needs of others first. But with the Group offering flexible work arrangements since 2019, she can now weave her family’s needs into the rich tapestry of her professional life.

“Working flexible work arrangements, I’m able to adapt my working hours to spend more time with my husband Dino and my teenage daughter Elysia at home without compromising the standards of my work,” explains Angela. During the Covid pandemic, Angela worked from home full time, which gave her an opportunity to bond and get closer to her daughter, Elysia, uncovering shared interests and nurturing her daughter’s academic growth. “I saw the benefits of

working from home through the closer relationships with my family and the quality time together that it allowed, so when safe-distancing restrictions were lifted in early 2023, I chose to continue working from home two to three times a week,” she says. Dino is also grateful for her flexible work arrangements, joking that Angela was no longer tired or short-tempered at the end of the working day!

Angela’s story is a testament to the transformative power of people-centric work arrangements – harmonising work and life, inspiring our people to work together to bring even better experiences for our guests and becoming even more engaged as advocates of our organisational purpose.



Top: Angela Lim with her husband, Dino, and her daughter, Elysia. Bottom: Angela engaging with work colleagues.

Community Engagement and Advocacy



As a wildlife organisation, we are in a unique position to educate our guests on the importance of conservation, and to advocate for more sustainable choices. In moving towards our vision to create meaningful connections and experiences that inspire people to protect nature and wildlife, we commit to raising awareness about the moral and ethical considerations of the animals in our care. We emphasise the importance of animal conservation and seek to inspire public action through education on pressing conservation issues.

Recognising that conservation and sustainability are intricately linked and critical in mitigating threats to climate change, we encourage our employees, guests and the public to adopt green lifestyles. We do so by raising awareness, curating educational programmes, information, and resources to learn about sustainability.

To ensure our message is spread across the community, we are dedicated to making our parks accessible to all. We believe that everyone deserves a chance to foster a connection with nature and wildlife. By making our spaces inclusive, we create opportunities for people of all abilities and backgrounds to experience the unique joy of learning about animals and the importance of conservation.

Why What We Do Matters

Our unique position as an organisation engaged in biodiversity conservation and the care of animals allows us to extend our advocacy for sustainability beyond our parks, inspiring guests to embrace a more sustainable way of life. Conservation education is woven into every interaction with our Group, designed to inspire action for a healthier world. Our work aligns with the UN SDGs, ensuring that we are helping to shape a more sustainable future for all.

Managing Biodiversity

As global trends increasingly focus on the loss of biodiversity, and nature becomes a key area of focus to build resilience to climate change and enhance adaptability, managing biodiversity is more important than ever. We emphasise the significance of protecting biodiversity and managing natural resources as key components of our advocacy and educational initiatives.

Educating the Community on Conservation

Community involvement is integral to our conservation education strategy. Through active engagement, we aim to educate citizens about the importance of biodiversity, aligning with the Nature pillar of the Singapore Green Plan. Our commitment to using this platform to build public awareness and advocate for conservation underscores the importance of education in fostering sustainable practices.

FY23/24 Highlights

27
Environmental Sustainability Talks, Tours and Campaigns hosted at Mandai Wildlife Reserve, reaching out to **17,300** people

The inaugural Go Green SG collaboration fostered an estimated **600+** unique engagements

Reached out to a record **333,000** school visitors, park guests and members of the public with conservation and sustainability messaging



Launched our new icon and tagline "Choose Sustainable"

The Fighting Deforestation Campaign engaged **15,600** guests with **78%** indicating their intention to choose forest-friendly products

We welcomed **800+** guests from **15** Social Service Agencies for Mandai Gives Back

30,900 beneficiaries from various Social Service Agencies enjoyed complimentary admission and tailored programming at our parks

>800 members of the public contributed to the Adopt an Animal Programme and other micro-sponsorships



An educator introducing visitors to Black Soldier Flies.



A presentation of our Environmental Sustainability Strategy to University students.

How We Advocate for Our Causes

Our greatest advocates are our employees as they see first-hand what needs to be done to preserve our animals and their habitats. The Mandai Environmental Sustainability Strategy is embedded in employee engagement through sustainability-themed workshops, ground-up initiatives and refresher courses on innovations and best practices. Such reach-out helps extend the advocacy on green and sustainable living beyond our employees to business stakeholders, as well as visitors and the public. Through various touchpoints, we are able to communicate the importance of conservation and environmental sustainability and associated calls to action.

Animal Presentations Foster a Deeper Understanding

One of those touchpoints is our daily animal presentations to visitors. Our Animal Presentations Training Policy is rooted in principles that prioritise respect and education, beyond the entertainment value our animal programmes deliver through the empathy and in-depth knowledge of our skilled trainers and educators. These programmes are designed to showcase natural behaviours in our animals, allowing guests to connect with and appreciate their unique qualities. Emphasis is placed on the plight of threatened species, highlighting our conservation efforts and inspiring guests to take practical steps towards protecting wildlife. By providing a safe and engaging environment, we create opportunities for meaningful close encounters that leave a lasting impact.

Advocacy Within Singapore's Education Community

We believe that the vision of a healthier planet can only be realised through society's collective commitment, and it starts with our children and youths. We have redoubled our advocacy for protecting wildlife and living sustainably through innovative programming, campaigns and outreach activities across a variety of communication channels, including the national education system. Working closely with preschool anchor operators and the Ministry of Education and Institutes of Higher Learning, we co-create curricula, work attachments and other learning opportunities to spread our message to more students. Our aim is to nurture a new generation of eco-stewards committed to a biodiverse world and a sustainable future.

Our Education Advisory Panel

We do this with support from our Education Advisory Panel, composed of external experts from various specialised educational fields, including outdoor education, special needs education, mother tongue language instruction and early childhood education. The panel is supported by the Deputy Chief Executive Officer of Mandai Wildlife Group and the Vice President of Education, who also serves as the secretariat.

Together, the members provide strategic guidance to enhance the Group's reputation as a "Living Classroom for All". Meeting every six months, the panel's role is to ensure that our educational offerings are aligned with best practices, with the goal of nurturing future-ready citizens to be advocates for sustainability, wildlife conservation and climate action. Additionally, the panel serves as a platform for members to exchange insights on innovative teaching methods and emerging educational trends.

Our Many Advocacy and Community Outreach Channels

In the past year, Mandai Wildlife Group has made significant strides in strengthening our commitment to advocating for sustainability by actively engaging with the community at large through a variety of channels. We believe that true change begins with collective action, and our efforts have been focused on amplifying our advocacy for sustainability across multiple platforms. This has included enhancing our messaging within our parks, incorporating sustainable practices into our retail activities and forging impactful collaborations with educational institutions and industry partners. Additionally, we have extended our reach through targeted recycling initiatives and charitable giving, ensuring that sustainability remains at the forefront of our community engagement. Through these efforts, we aim to inspire and empower individuals and organisations alike to join us in building a more sustainable future.



Sustainability Messaging Across Our Parks

Choose Sustainable

Our outreach begins with our messaging. We progressively update our interpretive panels, animal presentations and keepers talk content as well as signage in our F&B and retail outlets to include sustainability messages. In January 2024, we launched a new icon and tagline, "Choose Sustainable", to unify sustainability messaging across our various product lines and parks.



Visitors learning about sustainable choices that help prevent deforestation.

RECYCLING: Supporting Reuse and Recycle Efforts

We collaborate with organisations and brands such as the World Wildlife Fund (WWF), Elephant Parade and Wild Republic, which support conservation and the use of natural or recycled materials. In addition, we partner with Soft Toy Hospital to recycle and rehome donated plush toys. In FY23/24, more than 15 Soft Toy Repair and Restoration workshops were hosted, engaging more than 200 guests.

We also support sustainable consumption at work and strive to serve sustainably sourced food. We use only reusables at our venues to reduce the impact on the environment. Our staff are also encouraged to bring their own containers and utensils through our Bring Your Own campaign.



Upcycled soft toys at Mandai.



RSPO 1106250

Fighting Deforestation Campaign

In March 2024, we held the third and final installment of the multi-year Fighting Deforestation campaign. First launched in 2022, the campaign aimed to raise awareness on threatened rainforest habitats and the role that responsible consumer choices has in preventing deforestation.

Learning stations at the Singapore Zoo engaged visitors to highlight the importance of choosing products made with RSPO Certified Sustainable Palm Oil to help protect rainforests and make a positive impact on the environment.

Guests who had completed the learning station activities were treated to a cup of Owa Coffee to further expose guests to the variety of forest-friendly products that are available.

By the end of the campaign, the number of participants that strongly agreed with the statement "I will choose to buy a more expensive product if i know it helps to reduce deforestation" increased by 9%. An encouraging sign that our visitors value the positive impact of more sustainable choices.

To learn more about our education and advocacy efforts, refer to the "Spreading the Message" section in our [Yearbook](#).

Donation Drop-off Points in our Retail Stores

Visitors can drop off preloved soft toys at designated donation points thoughtfully placed in our main retail stores. We have collected an astounding 2,000+ preloved soft toys. These plush companions found a new purpose when they were donated to the Singapore Red Cross to be resold at thrift shops and events to raise much-needed funds. In recognition of our commitment to giving back to the community and supporting the work of the Singapore Red Cross, Mandai Wildlife Group received the Friend of Singapore Red Cross Award from President Tharman Shanmugaratnam.

Community Engagement

Teacher Training Programmes

Through sharing sessions and in-person workshops, we empowered teachers with the knowledge to design meaningful learning journeys to our parks as well as pre- and post-visit extended learning experiences.

Engagement with Institutes of Higher Learning

We also hosted students from Singapore Institute of Technology (SIT) and Singapore Management University (SMU) undertaking the SIT Social Innovation Project Module and SMUx Innovation Project Module respectively. Adding to our list of partners was James Cook University (JCU), and Temasek Polytechnic (TP). With the signing of a Memorandum of Understanding (MOU) with each, we look forward to a fruitful collaboration and increased opportunities to engage students and academia with



Workshops and training empower teachers and students to create meaningful learning experiences in our parks.

practice-based training, internship opportunities, and research in the social sciences and animal health and care management.

Engaging Industry Partners and Communities

The Group attends multiple events and initiatives hosted by industry partners to share Mandai's sustainability journey as part of our efforts to strengthen our relationship with like-minded organisations and contribute to the local sustainability ecosystem. Events in FY23/24 included the Society of Ecological Restoration Conference, Infocomm Media Development Authority (IMDA) Digital Transformation Industry Day, SASPO and IES Charles Rudd Distinguished Public Lectures.

Supporting National Movements

We supported the inaugural Go Green SG (GGSG), an initiative by the Ministry of Sustainability and the Environment and STB, by curating a range of sustainability-themed experiences for both guests and staff. These included the Native Wildlife Adventure Booth at the launch event at Mee Toh Primary School, public guided tours at Mandai Wildlife WEST, upcycling workshops by the Soft Toy Hospital at Singapore Zoo, and a Recycle Right Campaign aimed at encouraging staff to adopt recycling best practices.

The estimated total reach from the Group's GGSG programming was about 604 unique engagements.

We also hosted sustainability talks, upcycling workshops and programmes for public and private partners to share our sustainability initiatives and conservation efforts and encourage those in attendance to be more sustainable, which fostered 1,221 unique engagements.

Mandai Gives Back

An annual event, this year's Mandai Gives Back involved us proudly joining hands with GIC, our corporate sponsor, to create a day of delight at the Singapore Zoo. We welcomed over 800 guests from 15 Social Service Agencies for a day filled with exclusive animal presentations, guided park tours and tasty snacks. It was a heartwarming celebration of our shared love for wildlife and the community.

To learn more about our Community Engagement efforts, refer to the "Social Sustainability" section in our [Yearbook](#).



Our staff engage with then-Deputy Prime Minister Lawrence Wong at the Go Green SG launch event.



An Educator sharing about how we built Mandai Wildlife WEST to be wildlife friendly.



Hosting sustainability talks and workshops, engaging public and private partners in conservation efforts.

Visitor Health, Safety, Experience and Satisfaction



Ensuring a safe and enjoyable experience for all visitors, as well as the animals in our care, is at the heart of our operations at Mandai Wildlife Group. Our overarching purpose is to create a welcoming environment that directly impacts the experience and overall satisfaction of our guests. By integrating community involvement into the visitor experience, we aim to embed our educational efforts within Singapore's social fabric. This approach not only enhances the guest experience but also aligns with our sustainability and risk management strategies, which are crucial for maintaining consistent visitation patterns and securing the financial stability of the organisation.

The Importance of Guest Safety and Experience

Visitor health and safety are paramount to our success, serving as a critical component of our operational framework. The quality of the guest experience and their satisfaction are directly linked to the sustainability of our business. We recognise the importance of aligning with global trends in sustainable tourism and addressing the needs of all visitors, including the young, the ageing population and persons with disabilities, by developing meaningful and inclusive experiences.

The Group is committed to ensuring a safe and enjoyable experience for all our visitors, as well as the animals in our care. Our attractions are a significant draw for both local and international tourists, contributing meaningfully to Singapore's tourism revenue. It is crucial that we thoroughly consider and address the needs of our visitors. This is ingrained in our park designs and service delivery protocols, so that we can uphold our reputation as a world-class attraction.



Our staff ensure a safe and informative experience for visitors through interactive learning activities.

Anchored by Mandai Moments

Designing intentional peak moments into every guest's journey



Smooth Preparation and Journey



Animal Encounters



All-Weather Fun



Connected Through Stories



Amazingly High Ending to the Days



Memory Recall

"A defining moment is a short experience that is memorable and meaningful." – *The Power of Moments*

FY23/24 Highlights

87% Guest Satisfaction score achieved in FY23/24



Silver for Most Creative Launch
Take Off to Paradise, Mandai Wildlife Group



Universal Design Excellence Award 2023
for Bird Paradise and Mandai Wildlife WEST

Enhancing Visitor Experience and Satisfaction

Our strategy for enhancing visitor experience and satisfaction is guided by a clear principle: Every Guest Leaves Inspired. This guiding star shapes our unwavering commitment to delivering a consistent five-star experience for all our visitors. To achieve this, we have developed our five-star experiences around six key Mandai Moments which are designed to create unforgettable highlights for our guests, ensuring their journeys with us are truly memorable.



Students enjoying an overnight adventure in Bird Paradise, accompanied by penguins for a unique and immersive experience.

A Tailored and Customised Experience for Every Guest

Beyond these peak experiences, we also focus on enhancing the foundational aspects of each visit, ensuring that every guest enjoys a high-quality experience from start to finish. This tiered approach establishes a strong foundation of excellence for all visitors and offers deluxe and premium paid experiences, providing more intimate interactions with our wildlife. This ensures that we can tailor and customise experiences to meet the diverse needs and preferences of our guests.

Our commitment to these initiatives is reinforced through close collaboration across all business units. The Guest Experience Management (GEM) team partners with each unit to identify opportunities and drive enhancements in the guest experience. These initiatives are regularly reviewed and refined during our weekly Group Park Enhancement meetings, ensuring that our strategies are perfectly aligned with our mission and executed with unwavering dedication.

Guest-centricity

At Mandai Wildlife Group, guest-centricity is at the core of everything we do. Group Insights plays a pivotal role in championing the voice of our guests. By regularly reporting and sharing guest sentiments during management meeting chaired by Group CEO, and operation meeting chaired by Deputy CEO and Chief Life Sciences Officer, the organisation gains a deeper understanding of our guests.

All metrics and targets that revolve around guest experience are reported and approved by management. The insights shared by Group Insights empower and enable the GEM team to conduct Guest Experience Enhancement Workshops that involve various internal stakeholders. With the adoption of the Design Thinking process, these workshops drive improvement within the park. Both Group Insights and the GEM are integral parts of the Transformation and Growth Division, which is led by the Deputy CEO of Transformation and Growth.

Guest Satisfaction Survey

The Guest Satisfaction Survey is a vital tool we use regularly to assess guest satisfaction and gain insights into their sentiments. This survey enables us to understand guest profiles, identify key drivers of satisfaction, and highlight areas where improvements can be made. By capturing guest perceptions of our offerings, the survey helps us pinpoint any gaps that need addressing. This fiscal year, our Guest Satisfaction Score reached an impressive 87%, which is 13% higher than the Customer Satisfaction Index for Singapore's tourism sector in 2022.

Social Listening Tool

The Social Listening tool we use enables us to monitor and analyse online conversations about our brand and offerings, uncovering emerging trends and topics among our target audience. This proactive approach allows us to anticipate market shifts and changes in consumer behaviour. Our social media team conducts daily social listening to stay connected with our audience, monitoring brand-related discussions, identifying trends, and managing crisis alerts.

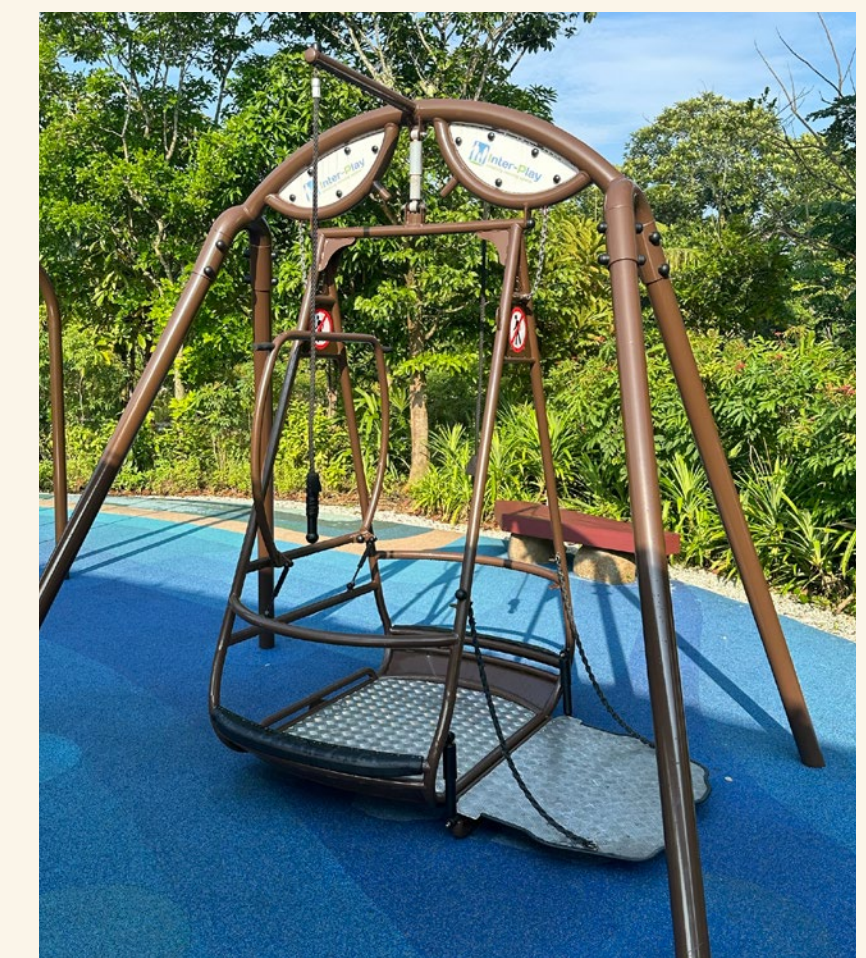
By leveraging these insights, we refine our content strategy, focusing on what resonates with our audience and identifying areas that require improvement. Understanding our audience enables us to tailor content to their needs and preferences. Our dynamic content strategy is continuously adjusted based on the insights gained from social listening, ensuring we remain responsive to the evolving demands of our audience. Crisis alerts are also in place to swiftly address any potential issues that may arise.

Enhancing Inclusiveness in Design

Ensuring that everyone can fully engage in the park's educational programmes and entertainment offerings, the parks have been designed with inclusivity in mind. Bird Paradise provides nursing rooms and changing stations, as well as hearing enhancement facilities at information counters, Learning Centres, and the 2,000-seat Sky Amphitheatre for the hearing impaired. Mandai Wildlife WEST is a publicly accessible area that does not require paid admission. The area features wide sheltered walkways, ensuring that visitors with prams, trolleys, or wheelchairs are seamlessly connected to the entrance of Bird Paradise and the future Rainforest Park. Additionally, free wheelchairs are provided for the elderly and persons with disabilities.



Mandai staff engage with visitors, ensuring guest-centric experiences through interactive learning and personalised attention.



Wheelchair swing at Mandai Wildlife WEST, ensuring all visitors can enjoy the experience.

Employee Health, Safety and Well-being



Employee Well-being

The well-being of the animals under our care is only as strong as the well-being of those that care for them, which is why we are deeply committed to ensuring the welfare of our employees. We firmly believe that fostering employee well-being is crucial not only for their personal and professional growth but also for their overall physical, mental, and emotional health. We achieve this by cultivating their passions and potential through mentoring, coaching, and development programmes.

Strengthening Sustainability Through Employee Care

Creating a positive workplace environment strengthens our overall sustainability efforts. We recognise global trends that emphasise employee health, safety and satisfaction as key components of corporate responsibility and sustainability.

Employee care is a fundamental aspect of our operations. Given our unique role in conservation and biodiversity within Singapore, employee well-being is a crucial element of our contribution to the broader sustainability agenda. We believe that when our employees feel



We held a lunchtime staff engagement to commemorate Earth Day, fostering sustainability through fun activities and strengthening employee well-being as part of creating a positive workplace environment.

engaged with us, they become our best ambassadors for our organisational's purpose and deliver positive experiences for our guests and stakeholders.

Generous Employee Benefits

Our CARElephant Programme is a comprehensive workplace initiative aimed at enhancing employee health and fostering a supportive environment that prioritises well-being. The programme offers a range of benefits, including health insurance, medical reimbursement, and financial aid, as well as an Employee Assistance Programme to support mental health. In addition, staff have access to engagement activities, interest groups, and a dedicated staff gym, ensuring a holistic approach to their physical, mental, and emotional well-being.

Mandai's remuneration package offers a range of additional benefits, including competitive leave entitlements, complimentary staff meals and transport, discounts at selected retail, F&B outlets, and free admission to our parks for employees and their loved

ones. Additionally, staff have the opportunity to volunteer in our programmes and be part of history as we integrate our five parks with green public spaces and the Mandai Rainforest Resort, creating a unique and sustainable destination.

Building Employee Capabilities

In July 2023, the Competency-Based Pay (CBP) progression scheme was introduced to complement the development programme for our keepers and animal presenters. The CBP progression scheme is motivational because it directly ties our employee's compensation to their skills, knowledge, and achievements. By rewarding individuals as they reach specific milestones, CBP creates a clear and structured pathway for career advancement, giving employees a tangible goal to work toward.

We were accredited with the PW Mark in recognition of progressive wages that we and our contractors pay to employees covered under the respective Sectoral or Occupational Progressive Wage Models.

FY23/24 Highlights



Accredited with the Progressive Wage (PW) Mark in September 2023



Finalist for Outstanding Employer at Singapore Tourism Awards 2023

Pulse surveys in FY23/24 showed a rise in our employee experience score from

73% → 76%

with attrition dropping from

19% → 12%



Staff enjoying a spread of seasonal fruits during the Fruit Fiesta event, promoting employee well-being and engagement.

Collective Agreement with The Singapore Manual & Mercantile Workers' Union (The SMMWU)

Mandai Wildlife Group has been unionised by The SMMWU since 1973. During the FY, this relationship was renewed with the signing of a three-year Collective Agreement. The agreement saw strong enhancements to clauses on Retirement and Re-Employment, Paternity Leave, Health & Wellness benefits, and the incorporation of a new Company Training Committee.

Best Employer Award 2024

Mandai Wildlife Group was ranked 66th on the Singapore Best Employers 2024 list, which features the top 250 employers in Singapore. This places the Company among some of the most attractive employers in Singapore. This accolade highlights the Group's commitment to fostering a positive work environment and employee satisfaction and reflects our focus on staff development, well-being, and the role we play in nature conservation.

These achievements are testament to the working culture of the Group and our commitment to creating a workplace environment that values employee well-being.



Workers on site, ensuring health and safety remain paramount throughout all operations.



Deputy CEO (Operations), Dr. Cheng Wen Haur, with other Senior Management at Facilities Management team's Safety Time Out emphasising the importance of Workplace Safety and Health.



Workplace Health and Safety

Worker safety is a top priority for us because it directly impacts the well-being, productivity, and morale of our employees. A strong focus on safety signals to our workforce that we value their health and lives, fostering trust and loyalty. In turn, this helps attract and retain top talent, as employees are more likely to stay with the company.

Employee Safety

Mandai Wildlife Group is fully committed to adhering to our stringent safety policies as part of our dedication to maintaining a safe and healthy work environment. We rigorously comply with all regulatory requirements and industry standards, ensuring that our operations meet or exceed the necessary safety benchmarks. To

uphold these commitments, we conduct regular audits and assessments to monitor and evaluate our safety performance, identifying areas for improvement and implementing corrective actions as needed.

While we strive for a zero-injury record, in FY23/24, 142 workplace injuries were recorded—eight categorised as major injuries and 134 as minor injuries—resulting in a workplace injury rate of 9.4 injuries per 100 staff. Regrettably, there was a fatal traffic incident on our premises during FY23/24, which is currently under investigation and the outcome is expected next year. Following the fatal traffic incident, Mandai Wildlife Group has reviewed existing safety protocols and implemented strengthened safety measures with all our contractors, including those not involved in the incident.

We also have a Health & Safety Management System in place where the steering committee, Operational

Risk and Safety Committee (ORSC), is led by a dedicated sub-committee of the Board. Initiatives, and performance monitoring are carried out by the Safety & Security Committee (S&SC), a working group that is chaired by the Chief Park Operations Officer.

Proactive Intervention

Proactive intervention is key to pre-empting and preventing ill-health and injury, ensuring a safe and healthy environment for everyone. Compliance with all relevant regulations is a cornerstone of our approach, yet we go beyond, adopting best practices and continually striving to improve our environmental, health and safety standards. By embedding these principles into our daily operations, we aim to create a culture of safety and sustainability that benefits both people and the planet. Our commitment to these standards is an essential part of our broader mission to foster a sustainable future for all.

Topic of Interest

Diversity, Equity and Inclusion



Workplace harassment training fosters a safe, inclusive environment, ensuring all employees feel valued and supported.

Fostering a Harmonious and Safe Workplace

As we advance in our Diversity, Equity, and Inclusion (DEI) journey, we remain committed to creating a harmonious, safe, and inclusive environment where every employee feels respected and valued. To reinforce this, we have launched Workplace Harassment Training to raise awareness of what constitutes harassment and to equip over 100 people managers with the skills to effectively support affected individuals. Our goal is to expand this programme to all employees, deepening awareness, fostering a culture of respect, and ensuring robust support across the organisation.



Mandai FesDival celebrates diversity and inclusion, fostering respect for individual differences among staff.

Celebrating Our Differences

To promote a culture of inclusion among our staff, we organised Mandai FesDival, a vibrant event dedicated to valuing and respecting individual differences. To maintain this momentum, we developed a comprehensive toolkit for management to facilitate follow-up activities and foster meaningful conversations about DEI within their teams.



Providing Disability-inclusive Employment

We are proud to have received the Enabling Mark Award (Silver) in recognition of our ongoing commitment to fostering inclusivity within our organisation. This national-level accreditation framework by SG Enable benchmarks and honours organisations for their exemplary practices and outcomes in disability-inclusive employment. Receiving this award not only validates our efforts but also motivates us to further enhance our inclusivity as an employer.

We are dedicated to supporting individuals with special needs by providing meaningful employment opportunities, internships, and work attachments. Through our collaboration with Association for Persons with Special Needs (APSN) Delta Senior School (DSS), APSN Centre for Adults, and Project Dignity, we have successfully offered two permanent part-time positions in F&B to adults with special needs, supported by an APSN job coach. Additionally, we welcomed our second cohort of DSS interns to our F&B team on a two-day workweek basis and provided work attachments for students from Spectra Secondary School at our retail store.

Topic of Interest

Talent Management and Development

At Mandai Wildlife Group, people development is our top priority, equipping employees with the skills and knowledge necessary to reach their full potential and future-proof our business. We measure our success through a corporate key performance indicator that tracks training activities, aiming for at least 90% of staff to complete three learning activities annually. In the past financial year, we surpassed this goal, with 95% of our employees participating in at least three learning activities. On average, each employee completed 10 training activities throughout the year.



Team members engage in leadership development workshops, fostering continuous learning and skill growth.

Fostering Leadership and a Culture of Continuous Learning

We have a structured leadership development programme tailored to different leadership stages, reinforcing our philosophy that all leaders should inspire, empower, and engage their teams. This commitment is supported by our eight leadership competencies, which are tracked in the annual appraisal forms for senior executives and above. Through career conversations, we develop individual development plans for our talented employees to guide their growth. Recently, we introduced two new leadership programmes: “The Leader as Coach” and “GROW Coach”. Over 100 people managers have engaged in these programmes, which include a six-week coaching contract with accountability partners to reinforce skill retention and ensure ongoing development. This comprehensive approach not only enhances leadership capabilities but also strengthens our organisational culture by fostering a supportive and collaborative environment.

We sponsor our staff members for continuing education to achieve higher qualifications. In addition to qualification sponsorship, we encourage participation in global zoo conferences and workshops, enabling staff to exchange insights and learn from industry peers. Our Annual Learning Festival showcased this commitment, featuring seven engaging booths and celebrating our culture of



Mandai staff members participate in a sponsored conservation trip, supporting wildlife protection efforts.

continuous improvement and professional growth.

Supporting Employees in Making a Difference

To promote a culture of wildlife protection, we sponsor employees to participate in conservation projects. This year, 15 employees embarked on sponsored conservation trips, with organisations like Free the Bears and MYCAT being two of the 44 conservation projects across Southeast Asia, alongside four global initiatives supported by Mandai Wildlife Group. These opportunities provide employees from various departments with firsthand insight into the challenges of wildlife conservation and the complexities of protecting natural habitats. Participation in these projects offers invaluable learning experiences, inspiring our staff to become dedicated advocates for wildlife



Reviewing our employee survey responses.

conservation.

Checking the Pulse of Our Employees

Employee experience is a cornerstone of our business strategy, leading to the launch of the Qualtrics HR Analytics Tool in April 2023. This tool enables us to gather critical insights through Lifecycle Surveys (onboarding and exit) and Employee Experience Pulse Surveys, introduced in June 2023 and February 2024. These surveys provide valuable data on employee sentiments and engagement, allowing us to integrate feedback into our decision-making processes. Our efforts have resulted in measurable improvements, with the overall employee experience score rising from 73% to 76% and a significant reduction in attrition, from 19% to 12%. As we continue to conduct these pulse surveys every six months, we remain committed to enhancing employee satisfaction and engagement, reinforcing our dedication to a positive, supportive workplace.

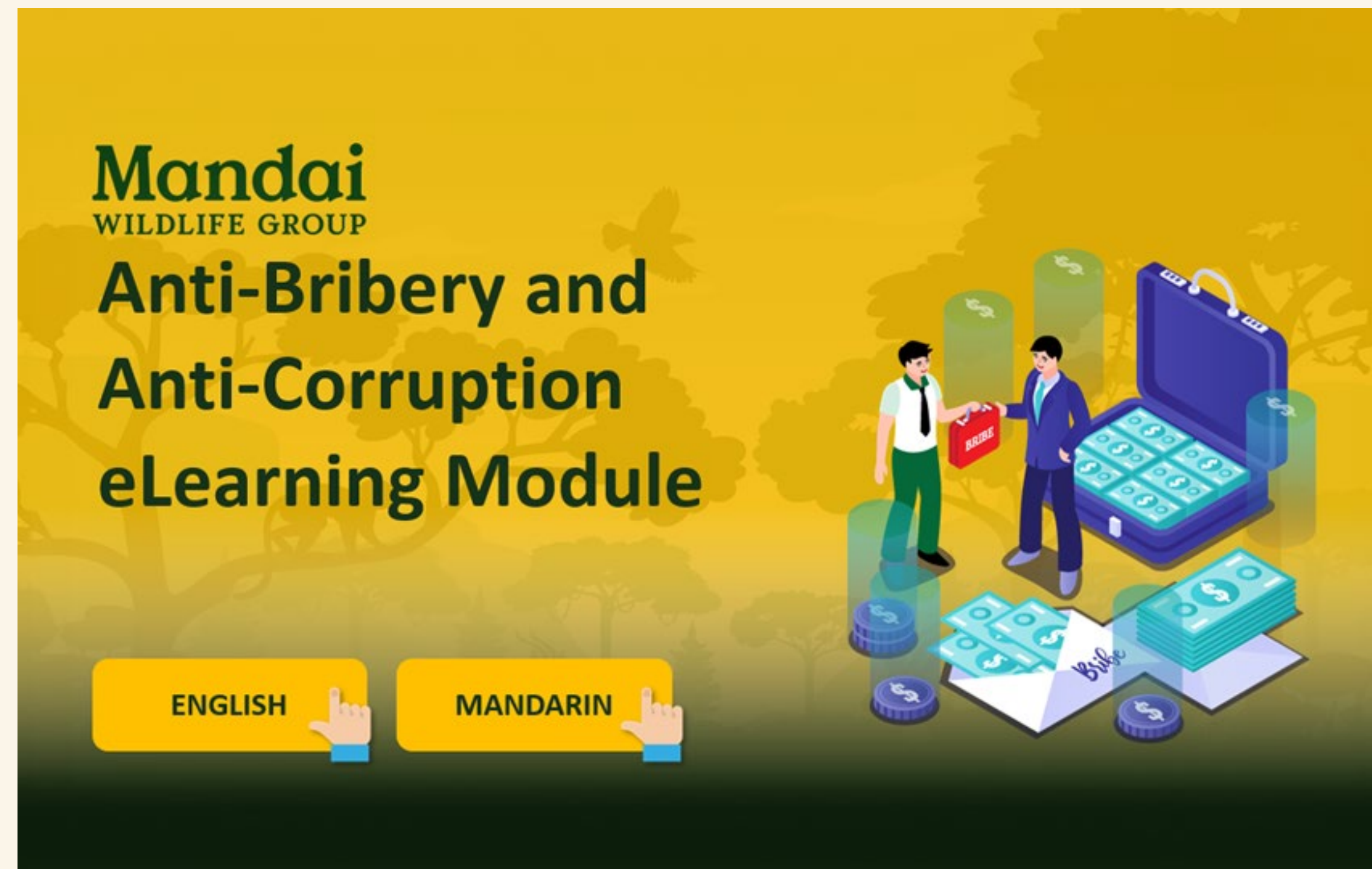
Corporate Governance and Ethics



At Mandai Wildlife Group, strong corporate governance is central to our purpose of building a world where people and wildlife thrive together. Upholding the highest standards of integrity and ethical conduct is essential not only to maintain stakeholder trust but also to ensure the long-term sustainability of the wildlife and ecosystems we protect. Our governance framework underpins our global partnerships and conservation efforts, reinforcing our commitment to transparency, accountability, and anti-corruption as we work towards a sustainable future for both people and wildlife.

Our Approach

All Board members and staff are required to declare any conflict of interest yearly and are briefed on our Code of Conduct, which is reviewed annually to ensure continued effectiveness. Our policies are updated through an annual review process. These practices enable us to conduct our business with the utmost integrity, fostering stakeholder trust and laying a strong foundation for long-term success.



Whistleblowing Policy

Our Whistleblowing Policy, endorsed by the Board and Senior Management, fosters a culture of integrity and accountability. We provide confidential channels for both internal and external stakeholders to report misconduct without fear of retaliation. This policy is communicated through various platforms, including our corporate intranet and website, to ensure widespread awareness. Details regarding reporting channels for staff and the public are readily available on Mandai's website, reinforcing our commitment to transparency and ethical conduct.

Gift Policy

Our Gift Policy reinforces our stance against bribery, prohibiting any gifts, hospitality, or expenses that could unduly influence business decisions. Employees are required to make annual declarations around conflicts of interest, reinforcing our commitment to ethical conduct.

A Zero-tolerance Approach to Corruption

We maintain a zero-tolerance approach to corruption, underscored by mandatory one-time anti-corruption and integrity training for all employees. This training

FY23/24 Highlights

ZERO incidents of corruption recorded

underscores our commitment to fostering a culture where integrity is paramount, ensuring that every employee understands their role in maintaining these standards. To maintain robust and effective anti-corruption practice, we monitor our compliance programme through ad hoc reviews and internal employee self-evaluations. Our anti-corruption compliance programme is robust, subject to yearly policy reviews, and the last HR audit in May 2024 confirmed adherence to our high standards. We are proud to report no new incidents of corruption, with two historical cases from 2016 and 2018 currently in legal proceedings.

Our anti-corruption practices extend to our external partners, where we expect the highest standards of ethical and lawful conduct. Suppliers, personnel, agents, and subcontractors must fully comply with all legal and contractual obligations. We strictly prohibit any conduct, including the offer or receipt of gifts, hospitality, or expenses, that could influence business transactions. Any breach of these standards, as determined by us, will be considered a material breach, allowing for immediate contract termination.

By adhering to these principles, we build trust with our stakeholders and establish a sustainable foundation for long-term success, ensuring our positive impact on wildlife conservation and sustainability is enduring.

Performance

In this section

- 52 Economic Value Creation
- 56 Sustainable Supply Chain Management
- 59 Innovation and Technology

An animal keeper engages visitors with an educational talk about macaws and their natural behaviours.

The Mandai Rejuvenation Project – Emerging from People to Paper to Reality

“This project taught me so much more about biodiversity and gave me the opportunity to meet inspirational people who are passionate about what they do. My eyes were opened to how every little bit of ecology is intertwined, and it has shown me how amazing the natural world is, how urgent the need for change is and how much we are part of the fabric.”

Michelle Yik

Deputy Vice President at Mandai Wildlife Group

Working on the Mandai Park development project was a breath of fresh air for Michelle Yik.

“I’d previously worked on construction projects in the urban jungle of the Central Business District,” she says, “so being involved in a project that revolved around nature and wildlife was a real draw for me because I’ve always been interested in animals and nature.”

She soon found that her colleagues’ excitement about dipterocarps, macarangas, alocasias, okapis and Francois langurs began to rub off, not just on her, but on her kids too.

Despite the excitement around the project, it was tough at first to bring it off the page and into reality. The team struggled hard to explain their vision for the build to get buy-in as they canvassed for support. “We tried so hard at every meeting to convey the importance of what we were doing.”

Now it’s done, Michelle views the project as a benchmark in industry standards that new local environmentally sustainable projects aspire to emulate. They knew they had it right when they started to see and hear the cicadas, birds and lizards return to their habitats. Watching the whole journey unfold and seeing the Park come to fruition as planned is a reward for Michelle in itself.

Michelle’s journey through the project is more than just a personal triumph. It is a testament to the broader impact sustainable practices can have on both the economy and the environment. The team’s innovative approach to construction, combined with a deep commitment to preserving wildlife, exemplifies how economic value creation, sustainable supply chain management, and cutting-edge technology can harmonise to build a better future.



Ms Michelle Yik on site during the Mandai Park development project.



Economic Value Creation



Partnership with Organisations

- Through our Partnership with Organisations programme, we collaborate with corporations to help them achieve their corporate social responsibility goals with maximum impact. This includes brand activation in front of an international audience, employee and beneficiary engagement in enriching hands-on programmes, and exclusive behind-the-scenes access to our wildlife.
- To encourage native wildlife to thrive in our parks, we plant native species that provide food and shelter for the animals. Corporates, including Corteva, Daikin Airconditioning Singapore, Schneider Electric, and OTS Holdings, not only sponsored saplings of various native plant species but also mobilised their staff for tree planting, contributing to habitat enhancement for native wildlife.



The Mandai Boardwalk is one of the freely accessible green spaces at the Mandai Wildlife Reserve where visitors can immerse in nature and greenery outside the ticketed parks. The entrance to the boardwalk is next to River Wonders.

Our Approach

The Mandai Rejuvenation Project

The Mandai Rejuvenation Project is an ambitious initiative aimed at transforming Mandai Wildlife Reserve into a leading nature and wildlife destination, with a focus on inclusion, sustainability, and integration. In this development, we have thoughtfully integrated existing attractions like Singapore Zoo and Night Safari with Mandai's natural heritage, ensuring minimal disruption to the area's biodiversity. Key features include a 338-room eco-resort, the new Bird Paradise, and a wildlife bridge connecting previously-fragmented habitats on each side of Mandai Lake Road.

The Mandai Master Plan

The Mandai Master Plan is our proactive approach to ensure our existing parks continue to captivate our guests alongside our new developments by rejuvenating our in-park experiences. During the FY, we unveiled two new attractions – the new KidzWorld at Singapore Zoo and bull elephant Chawang's new exhibit as the feature of Night Safari tram finale.

Mandai X

Leveraging over 50 years of Mandai Wildlife Group's experience in inspiring people to value and protect

FY23/24 Highlights

\$194,863,400

revenue in FY23/24

4,430,800

visitors to our parks

58%

of merchandise sold through retail outlets were sustainable.



**TripAdvisor
Travelers' Choice
2023**



**Singapore
Tourism Awards
2023**

nature, Mandai X aims to spark, catalyse, and accelerate innovative ventures in new domains to drive growth and impact at scale. By harnessing humanity's collective power through these ventures, Mandai X enables and empowers communities and companies to make better choices that address daily needs while contributing to a better world.



Bird Paradise offers immersive experiences that make learning authentic and fun.



ART-ZOO featured larger-than-life inflatable sculptures of iconic animals.

Reopening After the Pandemic
 In FY23/24, attendance at our parks saw a significant increase of 54.9% compared to the previous year, reaching 4.43 million. The team intensified efforts with innovative campaigns to keep our parks at the top of mind for visitors.

Building Rewarding Partnerships to Re-welcome Guests

- Within the first month of reopening after the pandemic, we partnered with STB and Singapore Airlines for the ‘Singapore Welcomes You Back!’ recovery campaign. This campaign offered attractive tripartite discounts to stimulate inbound demand from India.
- We revitalised the Friends of Wildlife membership with added perks such as priority access, preferential rates to events, and exclusive curated park experiences, leading to a record 35% membership renewal rate. During the year, we attracted 76,400 Friends of Wildlife members.

Unveiling our New Parks and Celebrating our Heritage

In May 2023, we proudly launched Bird Paradise, Asia’s largest bird park. Home to more than 3,500 birds across over 400 unique species, Bird Paradise features one of the world’s largest sub-Antarctic cold salt-water habitats for penguins and eight expansive walk-through aviaries, each designed to represent distinct habitats—ranging from the lush African rainforests and vibrant South American wetlands to the dry eucalypt forests of Australia and beyond.

Our Winged Sanctuary also houses around 100 bird species of high conservation value, sharing powerful conservation stories that showcase Bird Paradise’s

impactful efforts to protect threatened species both locally and regionally. Since its opening, Bird Paradise has welcomed over one million guests within its first 11 months, underscoring its appeal and success as a premier conservation and visitor destination.

In 2023, Singapore Zoo celebrated its 50th anniversary with the Golden ZOObilee, a seven-month-long tribute to its rich history and dedication to wildlife care and conservation. The festivities included the ART-ZOO Happy ZOObilee Party, featuring larger-than-life inflatable sculptures of iconic animals, and the return of the Mandai Wildlife Run, which saw nearly 5,000 participants running through Singapore Zoo, River Wonders, and Night Safari. The celebrations also

introduced new experiences like the Backstage Pass – ‘Incredible Invertebrates’, offering guests a behind-the-scenes look at the vital role insects play in maintaining ecosystems.

These activities, alongside special tours and wildlife camps not only drew visitors but also reinforced Mandai Wildlife Group’s commitment to education, sustainability and conservation. The Golden ZOObilee solidified Singapore Zoo’s place as a beloved institution, inspiring millions to connect with nature and protect wildlife for future generations.



Mandai Wildlife Run attracted nearly 5,000 participants.

Building Brand Value Through Sustainable Offerings



Messages in our retail shops encourage customers to choose sustainable products.

Sustainable Merchandise

All main retail stores now showcase a wide selection of sustainable products throughout the store. These products meet sustainability standards and/or contribute to wildlife conservation or social causes. In FY23/24, sustainable merchandise made up 58% of the merchandise sold at our retail outlets. To encourage more Singapore brands to start on their own sustainability journey, we partnered with Singapore Fashion Council and XM Media on merchandise design projects to increase their outreach.

Collaboration with Singapore Fashion Council

In October 2022, we partnered with Singapore Fashion Council to launch an open call inviting local fashion brands to design and produce meaningful, wildlife-inspired fashion pieces crafted from sustainable fabrics and eco-friendly packaging materials. Over 20 local designers responded, of which we selected five like-minded brands—Reckless Ericka, Latierra, Junglesuit, Pearly Lustre, and Photo Phactory—to bring these designs to life.

Together, we produced more than 30 unique stock keeping units, each crafted with the environment in-mind. These included methods such as water-efficient hand-crafted block printing, the use of premium organic cotton, Forest Stewardship Council certified paper cuts to replace jewelry



Above: Five local brands were selected to bring their wildlife-inspired fashion designs to life.



boxes, and the elimination of secondary packaging. This exclusive collection launched at Design Orchard from October to December 2023 and expanded to the Singapore Zoo and Night Safari in January 2024, bringing sustainable, wildlife-inspired fashion to a wider audience.

Collaboration with XM Media

To celebrate World Wildlife Day in March 2024, we partnered with XM Media, a renowned Singapore-based global design studio, to launch an exclusive collection of animal figurines inspired by our “Adopt an Animal” programme. For each figurine sold, \$5 is donated to conservation initiatives. Nearly 5,000 pieces have been sold—raising both funds and awareness for wildlife protection and biodiversity conservation. Over 20 Mediagroup artists and influencers joined us to create unique, hand-painted designs for the launch, bringing creative energy and visibility to this meaningful project.



Above: Sales of the exclusively designed figurines goes towards conservation projects to raise awareness on the importance of protecting wildlife.

Making Good Choices for the Environment

In 2022, we launched the 'Choose Good with Mandai' Campaign to raise awareness about how people can collectively protect nature and wildlife by making conscious choices daily, such as consuming plant-based foods and 'ugly foods', to choosing products that are sustainably sourced and made.

As part of the campaign:

- The Group teamed up with 20 like-minded F&B brands to create exclusive food items and grocery bundles inspired by the diets of wildlife.
- A Choose Good Game Challenge was also developed to educate people on the ways they can help the planet through gameplay and making learning fun.
- This year, the campaign turned to fashion with Good Threads, a capsule collection uniquely and purposefully crafted to make it easy and convenient for its wearer to make eco-friendly choices a daily habit.

Working in partnership with our design partner, Hakim Samat, Good Threads was crafted from 1,158 pieces of pre-loved clothing and salvaged materials weighing approximately 108kg from local thrift shops – honsieponsie, Function Five Thrift Shop and Woofie's Warehouse as well as textile collection drives.

Plastic hardware like buttons and clasps were made from post-consumer plastic in collaboration with recycling studio, Plastify. 100% of proceeds from the sale of Good Threads went towards supporting conservation efforts in Singapore and Southeast Asia.

Offering Delicious, Sustainably Sourced Meals

Our meals are made from ingredients that were farmed and harvested in ways that minimise impact on wildlife and the planet. By choosing sustainable food options, you are making a conscious decision to support a food system that can sustain future generations.

- Every meal we serve is cooked with certified sustainable cooking oil.
- We serve wildlife-friendly Owa Coffee.
- We offer delicious, plant-based meal choices.
- 100% of the seafood we use is from sustainable sources.



Models showcase sustainable fashion made from 100% salvaged fabrics.



Making good choices for the environment – a plant-based burger inspired by wildlife diets.



Visitors trying to operate the injector from Plastify to melt plastic into a mould.



The Choose Good Game Challenge played by a visitor.

Looking ahead, Mandai Wildlife Group has developed a 5-year roadmap to future-proof the group and deliver exponential impact to:



Transform

Embrace the digital age by accelerating organisation-wide data, digital, and innovation initiatives.



Grow

Evolve from a collection of wildlife parks into the Mandai Wildlife Reserve Precinct with a diverse kaleidoscope of "Conservation-Included" experiences.



Scale

Foster radical creativity by incubating and scaling ambitious ventures through Mandai X, our growth and impact accelerator that extends our mission beyond the reserve. Its purpose is to empower everyone to contribute to a sustainable future where people and nature thrive in harmony.



Impossible burger from Chawang Bistro at Singapore Zoo.




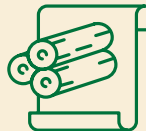


Sustainable Supply Chain Management



Our purpose of building a world where people and wildlife thrive together drives our commitment to sustainable procurement. By prioritising responsible sourcing practices throughout our supply chain, we aim to protect the natural world while fostering meaningful partnerships with suppliers and stakeholders. This not only supports global conservation efforts but also reflects our vision of creating connections that inspire action to protect nature.

Sustainable procurement is essential to ensuring that our operations align with national commitments, such as those outlined in the Singapore Green Plan 2030. In recognising the importance of resilient supply chains in the face of natural disasters and market fluctuations, we actively work to embed sustainability into every aspect of our operations. Through participation in NSPR, we guide our suppliers towards responsible practices, collectively enhancing our capacity to build sustainable, nature-positive supply chains.

By aligning our procurement strategies with our mission, we continue to lead in conservation while contributing to Singapore's broader sustainability goals. Together with our partners, we are creating a future where people and wildlife can coexist and thrive.

Targets	Status
 <p>Use of 100% certified sustainable palm oil (CSPO) and its derivatives across all our wildlife parks by 2025</p>	 <p>All of our cooking oil used are CSPO. Processes are in place to document the use of palm oil and its derivatives across the wildlife parks, and support the Group's transition to CSPO-certified palm oil</p>
 <p>Source sustainable, recycled or Forest Stewardship Council (FSC)-certified paper-based products only by 2025</p>	 <p>As of March 2024, 97% of our Mandai-produced paper-based products were from FSC-certified or recycled sources, keeping us on track towards our 100% target by 2025</p>
 <p>Have all our seafood and tea sourced solely from sustainable sources by 2030</p>	 <p>All seafood used by our F&B is sustainably sourced from internationally certified sources. All tea served is Rainforest Alliance Certified, ensuring responsible farming practices</p>



We use 'ugly greens' as animal feed to prevent food wastage.

We Procure Green

Launched in June 2019, our Green Procurement Policy provides detailed guidance on how we buy sustainably and exemplifies our preference for responsibly sourced products. We incorporate sustainability requirements in tender specifications where we can. In creating this policy, we looked at our top spends and developed Sustainable Procurement Roadmaps to guide procurement decisions based on environmental impact.

- We work with our supply chain to secure sustainable products, source locally and reduce packaging used in deliveries, where feasible. So far, we have set out criteria for the procurement of over 20 product

FY23/24 Highlights



100%

of our purchased chicken eggs are sourced locally, certified by Singapore Food Agency's Singapore Good Agricultural Practice (SG GAP), supporting the Singapore Green Plan's 30 by 30 target



Co-authored "A Supplier's Guide to Sustainability" by NSPR for Small and medium-sized enterprises (SME's)

categories, including wood and paper products to food-related categories such as seafood, tea and palm oil (where we are a founding member of SASPO, which advocates for a national and industry-wide transition towards sustainable palm oil).

- This also helps to encourage sustainable consumerism through our parks' F&B and retail outlets. Some moves we have made in this regard include:
 - Removing beef from all Mandai-operated F&B outlets and
 - Purchasing eggs from local sources that are certified SG GAP only.



Food items at the Penguin Cove Restaurant.

Sourcing Sustainable Products

As part of our ongoing commitment to responsible procurement, we continue to enhance our practices:

- 100% CSPO-certified cooking oil: Since 2017, we've used CSPO-certified cooking oil across all F&B outlets and are working to document palm oil use across our wildlife parks to support our transition to fully CSPO-certified products.
- 100% Sustainable Seafood: All seafood is sourced from certified sustainable fisheries or aquaculture farms, aligned with the Singapore Green Plan's 30 by 30 target, and certified under the SFA's Good Aquaculture Practices.
- 100% Sustainable Tea: All tea served is Rainforest Alliance Certified, ensuring environmentally responsible farming and supporting farmer livelihoods.
- Sustainably Sourced Paper Products: By 2025, all Mandai-produced paper-based products will be FSC-certified or made from recycled paper.

This structured approach ensures our procurement aligns with our conservation values, supporting the environment while promoting ethical sourcing practices across our supply chains.

Combatting Illegal, Unsustainable and Unethical Trade in Wildlife Products

Illegal, unsustainable or unethical wildlife trade is driving some wildlife species to extinction. We are committed to working with partners and strengthening efforts to address such trade through our Use and Trade of Wild Animal and Plant Products policy as follows:

- We will maintain records on use of wild animal and plant products.
- We will not purchase, use, sell, or serve products from wild animal species.
- We will purchase, use, sell or serve only certified sustainable wild plant products.
- We will continuously promote conservation-friendly products that support the protection of threatened wild animals and plants.
- We will continuously educate the public about illegal, unsustainable or unethical wildlife trade through our outreach efforts within and outside our parks.
- We will continuously engage with partners and work towards reducing illegal wildlife trade.

Responsible Procurement Structure at Mandai Wildlife Group

STRICTLY NO
wildlife products

MUST
be sustainably
sourced

ENCOURAGED
to be sustainably
sourced

Mandai does not endorse illegal and unsustainable trade of wild animal and plant products, including parts and derivatives

- Palm Oil
- Wood-Pulp
- Seafood
- Eggs
- Plastics
- Tea
- LED
- Trams



- Wooden Furniture
- Fruits & Vegetables
- Chicken
- Coffee
- Animal Feed
- Cocoa
- Soy
- Uniform
- Retail
- Plush Toy
- Shuttle Bus



Purchasing Practices

Our approach to procurement is driven by responsible practices, prioritising partnerships with ethical suppliers. While this may lead to higher upfront costs due to the need for certified products, we believe it ultimately enhances long-term environmental benefits. We maintain detailed records to ensure that our supply chain is free from illicit, ecologically harmful, or unethically sourced products.

- **Environmentally**, our procurement practices aim to reduce degradation by promoting sustainable resource use, though short-term supply chain disruptions may occur during transition periods. We do not purchase, use, sell, or serve products from wild animal species unless they come from reputable, sustainable sources, verified through rigorous certification processes.
- **Socially**, these practices contribute to community well-being through ethical sourcing, despite potential resistance from suppliers needing to adjust their practices. We actively engage with our suppliers, whether they provide food or non-food products, to ensure compliance with our sustainability standards and our commitment to protecting wildlife.

Our strict procurement policies help mitigate the challenges of working with suppliers who may contribute to conservation problems, such as those involved in deforestation through the supply of palm oil and wood pulp, or those engaged in unethical labour practices in the production of cocoa, coffee, and tea. Our Responsible Procurement Policy mandates that there must be no negative impact on wildlife from the products procured by Mandai Wildlife Group. We actively engage with and educate our suppliers, providing support to ensure compliance and a smooth transition towards a more sustainable future. One of the social causes we promote is The Animal Project, a social enterprise supporting artists with special needs.



Feeding our animals with sustainable alternatives.

Socially Sustainable Merchandise

One of the social causes we promote is The Animal Project, a social enterprise supporting artists with special needs. This partnership ensures that the artists earn from every item purchased. In an effort to reduce waste generated, our retail spaces also use upcycled wood for display labels, and recycled cardboard as decorations and standees.

Sustainably Sourced Meals

We support sustainable consumption and strive to serve sustainably sourced food at our F&B outlets. We also supply only reusables for dine-ins at our venues and implemented a disposable charge for cups and containers in Jan 2024 to encourage guests to dine-in or Bring-Your-Own (BYO) to reduce our impact on the environment.

Feeding Our Animals Sustainably

We diversify and source for more sustainable alternatives for our animal feed, supporting local produce where possible. We also embrace the use of ugly greens as animal feed, which tend to be rejected by human consumers for cosmetic reasons but are just as nutritious as “good-looking” ones. Around 40% of all fresh vegetables we purchase for animal feed are “ugly” greens.

Guiding SMEs towards Sustainable Best Practices

Mandai Wildlife Group is an active steering committee member and founding member of the NSPR.

In 2024, we co-authored “A Supplier’s Guide to Sustainability” with other like-minded organisations under NSPR. The publication is particularly targeted towards SMEs to help them launch their own sustainability journey by providing them:

- Guidance based on experiences and benchmarks.
- Resources to facilitate implementation, and use cases.

This guidebook is available on NSPR’s website and was officially launched during the NSPR forum on 19 April 2024 to an audience of 279 professionals from Singapore, Australia, Cambodia, China, Malaysia, Taiwan, Thailand, Switzerland and the USA. We promote and share this guide with our suppliers to encourage them to adopt industry best practices, which will ultimately help to decarbonise the value chain in the long-term.



Sustainable merchandise available in our retail stores.



Repurposed standees crafted from recycled furniture.



“A Supplier’s Guide to Sustainability” guidebook.

Innovation and Technology



In line with our purpose of building a world where people and wildlife thrive together, and our vision to create meaningful connections that inspire people to protect nature, we remain committed to enhancing visitor engagement and advancing our conservation mission. We have prioritised the integration of cutting-edge technology into the visitor experience. By leveraging innovative solutions, we aim to create immersive and educational experiences that resonate with our guests while simultaneously increasing operational efficiency.

Our approach to innovation extends beyond internal operations, as we actively collaborate with startups



Young explorers in action as Mandai Ranger Buddies embark on their wildlife adventure.

FY23/24 Highlights

Hosted three major innovation-centric events:

The Mandai Seminar



An Internal Learning Journey



The Mandai Hackathon



and other organisations to co-solve challenges and drive conservation efforts forward. These partnerships support our vision of fostering deeper connections between people and wildlife, making every interaction an opportunity to inspire care for the natural world.

A key focus of our innovation strategy is on developing early-stage initiatives, fostering partnerships and

These events collectively drew

>400

participants, demonstrating our commitment to fostering a vibrant culture of innovation and learning within the organisation



iF Design Awards 2023, Ranger Buddies Web Application



Singapore Business Review Technology Excellence Award, AI-Powered Aviary Mesh Monitoring System, Bird Paradise

professional exchanges that have a meaningful impact on conservation and animal care. By exploring new technological avenues and fostering these collaborations, we continue to push the boundaries of what is possible, ensuring that our efforts not only enhance the visitor experience but also contribute to the broader goal of preserving wildlife and their habitats for future generations.

Our Approach

Our strategic approach to innovation and technology is vital for several reasons. We tackle challenges head-on and foster early-stage innovation to transform into a smart precinct where technology is embraced to champion our triple bottom line of, Planet (conservation, animal care and sustainability), People (staff experience and productivity), and Performance (guest experience and revenue) goals. Our Transformation Office is dedicated to establishing Mandai Wildlife Group as a global leader in accelerating and incubating innovative solutions in the attractions and zoological domains. This dedication is a testament to our resolve to employ state-of-the-art solutions in tackling pressing environmental issues. Regular meetings of the TSC and Transformation Project Committee (TPC) are instrumental in shaping our strategy. These committees strategise, prioritise, allocate resources, and assess project potentials and outcomes, ensuring that our efforts add significant value where it matters most.

Furthermore, we recognise innovation and technology as key enablers for growth in visitor numbers, which supports our financial sustainability and contributes to the broader economic value creation of the organisation. By embracing these advancements, we ensure that our mission of conservation and education continues to thrive in an increasingly digital world.



Visitor signs up for the Mandai app.



Our 4 Change Enablers

The 4 'Change Enablers' guide the Group under the Transformation and Growth framework, which serves as the foundation for our transformation initiatives. This framework extends beyond Innovation and Technology, encompassing the development of an innovative culture, processes and platforms, as well as the creation of new products and experiences.



Ms Belina Lee, Deputy CEO, Transformation and Growth, Mandai Wildlife Group (left) and Mr Leong Der Yao, Assistant Chief Executive, Sector Transformation, IMDA (right) at the signing of the Memorandum of Intent (MOI).



Panel discussion during the Mandai Innovation Seminar 2024, discussing on the topic of embracing the future of generative AI and perspectives of Gen AI applications.

Transformative Partnerships

The Transformation Office has forged several partnerships with institutes of higher learning, such as Republic Polytechnic (RP) and Nanyang Polytechnic (NYP), through the Mandai Innovation Lab initiative. We are also currently working with existing partners like Microsoft and Meta to expand our innovation works and areas for collaboration. We are also working closely with IMDA and STB's multiple event outreach in the innovation technology space to lookout for the right tech solvers for our problem statements. In collaboration with IMDA, we have launched the IMDA/Mandai Living Innovation Lab to further our open innovation and industry engagements in areas such as autonomous machines, sustainability, Augmented Reality (AR) and Virtual Reality (VR) technologies, etc. IMDA partners Mandai Wildlife Group to drive digital transformation in autonomous mobile robots, sustainability and immersive experience through the 'Living Lab for Innovation'.

The Transformation Project Committee monitors progress through monthly meetings, where project charters, project descriptions, and action plans are documented to maintain consistency. The Transformation Office is also developing a standardised PowerApp-based project request form to streamline project tracking.

Cultivating Innovation

Innovation requires active support and cultivation. Our Mandai Co-Innovation Programme - Open Innovation Platform (OIP) is a Co-Branded Co-Innovation initiative that seeks collaborative partnerships and outreach with start-ups. We aim to identify finalists for each problem statement, fostering a vibrant ecosystem of innovation.

Embracing Generative Artificial intelligence (AI) at Mandai Wildlife Group

Contrary to the common perception that parks and zoos might lag in technological adoption, Mandai Wildlife Group has proactively embraced the significant productivity benefits of generative AI. We are in the early stages of crafting an AI Framework to guide the development, deployment, and management of AI systems and projects, with approval currently pending.

Scaling Innovation Through Open Innovation Platform

Our Open Innovation Platform is scaling several projects that enhances our ability to care for our animals, conservation efforts and operations. This includes an app for the Animal Care team where they can share items used for animal enrichment and optimise the items' usage. As we evaluate the outcomes of the projects, we are considering the potential scaling of other projects. The decision to develop these projects further will be based on an internal assessment that weighs factors such as productivity gains, daily utility, future operational costs, as well as other strategic considerations.

Case study

Wild-code: Mandai Wildlife Group Hackathon 2023

Held in May 2023, this hackathon aimed to gather and leverage on students' creative, unique and novel ideas to help Mandai build a low-code no-code solution using platforms such as PowerApps, Power BI and Power Automate. Through this, three readily available solutions were developed with the Microsoft's suite of product and aimed to streamline and automate processes within Internal Audit, Park Operations, and Sustainable Solutions teams.

- Key benefits of the hackathon included:
- Receiving joint support from Microsoft and their training partner, TotalEbiz, who provided platform training during the first two days, followed by three days of intensive on-site development at Microsoft's office.
 - Building on the success of the previous year's hackathon, we opened our doors to past participants, offering them internship opportunities at Mandai. This initiative provides valuable learning experiences and supports departmental efforts to refine and enhance the Power App solutions.
 - Fostering and expanding a network of partnerships with students and institutes of higher learnings (IHLs) for future collaboration.
 - To date, we have onboarded four interns from SMU, Singapore University of Technology and Design (SUTD), and NUS further bridging the gap between academic learning and practical application.



Group photo of the participants at the Mandai Wildlife Group Hackathon.



Mr Mike Barclay, Mandai Wildlife Group's CEO, speaking to the participants at the Hackathon.

Appendix

Data & Reporting Frameworks

In this section

- 63** Definitions and Methodologies
- 72** Data Tables
- 79** GRI Content Index

Nyungwe Heart of Africa is the largest aviary at Bird Paradise. It is also the most forested, mature trees preserved on-site during construction.

Appendix: Data & Reporting Frameworks

Definitions and Methodology

This section details definitions, methodologies and data boundaries otherwise not already specified, applied to the sustainability performance data disclosed in our sustainability report. They are made with reference to the GRI 2021 Standards and the reporting guidance set out in the respective GRI topic-specific disclosures. The GRI topic-specific disclosures covered are listed out in the GRI Content Index of this report.

Sustainability at MWG

Approach to Sustainability Governance

To effectively steer Mandai Wildlife Group towards its strategic objectives, a robust governance structure is essential, comprising board committees, management-level committees, and external advisory panels, each with distinct responsibilities that collectively ensure oversight, strategic alignment, and informed decision-making.

Our Board Committees

The following Board committees have been set up, each chaired by internal directors unless otherwise stated:

- **Audit Risk Committee:** The Internal Audit department reports to the Group CEO and Audit and Risk Committee so that critical issues are deliberated fairly and confidentially.
- **Operational Risk and Safety Committee:** Responsible for reviewing the Group's approach to managing material operational risks. This includes assessing the strategy, policies, and procedures for identifying, measuring, reporting, and mitigating risks, while ensuring compliance with relevant laws and regulations. Any significant findings and recommendations are reported to the Board.
- **Development Committee:** Assists the Board in fulfilling its responsibilities of overseeing the development of the Mandai Precinct, monitoring the Project's progress, ensuring timely, cost-effective, and quality development, and reports to the Board. It approves key contractors, consultants and operators from a pre-approved shortlist, ensuring process integrity and policy compliance.
- **Partnership Committee:** Oversees Partnerships entered into by Mandai Wildlife Group and provides oversight, guidance, recommendations and support to the Board on the identification and cultivation of prospective partnerships and the formulation of partnership strategies. The Partnership Committee also provides governance oversight of partnerships to ensure that appropriate guidelines and policies are adhered to, to ensure transparency and ethical behaviour.
- **Executive Resources & Compensation Committee:** Assists the Board to nurture and cultivate a strong and motivated team of Board and Management members that will drive and build upon the strategic vision of the company. Its main responsibilities include Board Nomination, Leadership Development and Succession Planning, and oversight on the remuneration of the Board and Senior management.

Management-Level Committees

- **Executive Committee (ExCo):** The ExCo is the highest decision-making body at management level, comprising the Group CEO, DCEOs, Chiefs and selected Heads of Department. It makes decisions on organisation-wide EESG-level topics and regularly provides the Board significant sustainability updates.
- **Environmental Sustainability Committee:** Comprising of the Group CEO, DCEOs and senior management with responsibilities in environmental sustainability, the committee meets every quarter to discuss and approve environment-related sustainability issues and tracks progress of sustainability targets in our corporate scorecard. It sets and reviews Environmental Sustainability strategies and endorses workplans. The committee also serves as a forum to enhance Mandai Wildlife Group's collective knowledge and competencies in all matters related to Environmental Sustainability.
- **People Development Committee:** Responsible for identifying and addressing the training and development needs of employees, ensuring that the workforce is equipped with the skills and knowledge necessary to meet current and future challenges. The committee also oversees the creation and implementation of comprehensive development programmes, career advancement opportunities, and initiatives aimed at enhancing employee engagement and satisfaction.

Definitions and Methodology

Sustainability at MWG

Approach to Sustainability Governance

- **Diversity, Equity and Inclusion (DEI) Panel:** Responsible for creating a harmonious workplace through respect for diversity, promoting equitable access, and ensuring a fair, inclusive, and culturally safe environment for all. The DEI Panel provides advice, guidance and resources to enhance DEI best practices.
- **Health & Safety Committee:** Responsible for reviewing and monitoring health and safety policies, procedures, and practices set by the Operational Risk and Safety Committee. This includes promoting a safe and healthy working environment, ensuring compliance with health and safety regulations and standards, and identifying and managing health and safety risks.
- **Enterprise Risk Management Committee:** Responsible for serving as the risk management governing body, providing direction and oversight to the identification, assessment, monitoring, management, and reporting of risks. It reports to the Audit Risk Committee on the adequacy and effectiveness of the Enterprise Risk Management framework, policies and resources employed to identify, manage and report risks relating to the company's activities. The Committee is chaired by the Group CEO and comprises Chiefs and Senior Vice Presidents.
- **Transformation Steering Committee (TSC):** Responsible for the strategic guidance and oversight of transformation initiatives. The TSC is tasked to develop strategies that integrate the 3Ps into the corporate vision, prioritising projects based on their potential impact and alignment with organisational goals and allocating resources effectively. The TSC also assesses project potentials and outcomes, ensuring that each initiative delivers significant value and contributes positively to Mandai Wildlife Group's long-term objectives.
- **Transformation Project Committee (TPC):** Oversees the day-to-day management and monitoring of transformation projects to ensure consistent progress through monthly meetings where project charters, descriptions, and action plans are thoroughly documented. The TPC is also tasked to develop clear action plans, ensure compliance with internal policies, and provide regular reports on projects to the TSC and other stakeholders, thereby facilitating informed decision-making and continuous improvement.

External Advisory Panels

- **Environmental Advisory Panel:** The panel comprises external experts from the scientific community, academia, nature groups and the private sector. They advise on environmental issues for the Mandai Rejuvenation Project and guide development plans to achieve good environmental stewardship. The panel guides the implementation of mitigation measures set out in the Environmental Impact Assessment (EIA) report. These are documented in an Environmental Management and Monitoring Plan (EMMP) and reviewed in consultation with the relevant government agencies on an on-going basis. The panel monitors and reviews the application and efficacy of the measures set out in the design, construction and operation of the project and, if and when required, provides oversight and guidance on corrective actions, which may include modifications to the EMMP.
- **Animal Welfare and Ethics Committee (AWEC):** The AWEC is composed of members from diverse backgrounds to ensure a balanced perspective on animal welfare and ethics at the Mandai Wildlife Reserve. The Committee, which convenes at least annually, includes veterinary professionals, wildlife care experts, and independent community representatives. Its primary role is to maintain high welfare standards, advise on best practices, review management plans, and evaluate research proposals, ensuring all aspects of animal care meet ethical guidelines. AWEC also responds to welfare-related complaints, recommends measures for managing welfare issues, and conducts regular inspections of facilities.
- **Education Advisory Panel:** The panel comprises external experts from specialised educational fields, including outdoor education, special needs education and engagement, mother tongue languages, and early childhood education. The panel provides strategic advice to strengthen Mandai Wildlife Group's positioning as a Living Classroom for All. It guides the alignment of the Group's educational offerings to best practices in education, aiming to nurture future-ready citizens who champion sustainability, wildlife conservation, and climate action. The panel convenes every six months and is supported by the DCEO of Mandai Wildlife Group and the Vice President, Education of Mandai Wildlife Group, who serves as the secretariat.

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Energy Consumption

- **Boundary:** Unless otherwise stated, emission boundary includes the operation of four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST), activities from Mandai X, our venture division, as well as non-operational parks, i.e. Jurong Bird Park, and development activities of Mandai Park Development.
- **Fuel Consumption Definition:** Total fuel consumed within the group. Unless otherwise stated, this relates to diesel, petrol and LPG consumption from vehicles and equipment owned or used in offices and locations of which Mandai Wildlife Group operates.
- **Electricity Consumption Definition:** Total electricity consumed within the group, expressed in megawatt hour (MWh). Unless otherwise stated, this relates to the purchased electricity consumption in offices and locations of which Mandai Wildlife Group operates.
- **Renewable Energy Consumption:** Total renewable energy consumed in offices and locations of which Mandai Wildlife Group operates expressed in MWh. This includes solar energy generation at Mandai Wildlife Group operations.
- **Methodology:** The direct energy consumption from fuel was calculated using the consumed fuel volume used multiplied by the density of fuel and energy density of the fuel.

Greenhouse Gas (GHG) Emissions

Mandai Wildlife Group adopts the use of the GHG Protocol Corporate Accounting and Reporting Standard as well as the ISO 14064-1 standard and accounts for its direct (Scope 1), energy indirect (Scope 2), and value-chain indirect (Scope 3) GHG emissions using operational control as the basis for consolidation.

Since FY19/20, Mandai Wildlife Group has obtained external limited assurance to verify its GHG emissions across all the three scopes in accordance with ISO14064-3:2019. However, this excludes the GHG emissions from non-operational parks i.e. Jurong Bird Park and the development activities of Mandai Park Development, which are only included in the verification exercise from FY23/24 onwards.

- **GHG Definition:** GHG emissions refer to gas that contributes to the greenhouse effect by absorbing infrared radiation. Where available, Carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) were included in the GHG emissions calculation and expressed in carbon dioxide equivalents (CO₂e).
- **Boundary:** Unless otherwise stated, emission boundary includes the operation of four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST), activities from Mandai X, our venture division but excludes Jurong Bird Park and development activities of Mandai Park Development as per ISO 14064 certification.

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Greenhouse Gas (GHG) Emissions

The following table details the definition, boundaries and sources of emission factors for each GHG emission source mapped against the ISO 14064-1 and GHG protocol categories.

ISO 14064-1 Category	GHG Protocol	Definition and Boundaries	Source of Emission Factors
Category 1: Direct GHG emissions or removals components	Scope 1 – Direct GHG Emissions	<p>Definition and Boundary: Direct GHG emissions from vehicles and equipment owned by the Mandai Wildlife Group, expressed in tonnes of carbon dioxide equivalent (tCO₂e). This also includes fugitive emissions in anthropogenic systems and FLAG emissions from direct land use change.</p> <ul style="list-style-type: none"> Liquefied Petroleum Gas (LPG) used in Mandai Wildlife Group’s kitchens. Fuel used by petrol-driven machinery and diesel-based equipment, such as horticulture equipment and grass cutters. Fuel used by company owned commercial vehicles (vans and lorries). Fugitive emissions from the operation of Mandai Wildlife Reserve’s Wastewater Recycling Plant and food waste digester. Fugitive emissions from refrigerant top-ups for: <ul style="list-style-type: none"> Air-conditioning and chillers of indoor spaces, buildings and offices Fridges and walk-in chiller rooms at Animal Kitchen, Back-of-Houses, Hospital and F&B Outlets Fire Suppressant Systems in data centres and kitchens Chillers for Life Support Systems Emissions from change in land use from Mandai Rejuvenation Project <p>List of Data Exclusions from the GHG Inventory:</p> <ul style="list-style-type: none"> Refrigerant top up for domestic fridges Potential carbon removals from the Mandai Wildlife Bridge GHG emissions from enteric fermentation were excluded as our animal collection is part of our ex-situ conservation efforts, as part of our mission to protect wildlife. GHG emissions from animal waste fermentation were as animal waste is collected daily and disposed off-site. Emissions from the disposal of animal waste was included in Scope 3 Cat 5: Operation Waste Disposed. GHG emissions from fertilisers were excluded because there is no use of chemical fertilisers in MWG’s operating parks. GHG emissions from pesticide used were excluded as the volume of pesticides used are minimal, less than 1% of total emissions. 	<ul style="list-style-type: none"> IPCC Sixth Assessment Report Working Group I, 2021 (AR6) 2006 IPCC Guidelines for National Greenhouse Gas Inventories UK Department for Energy Security & Net Zero: Greenhouse gas reporting: conversion factors 2023 Chevron (Singapore) Safety Data Sheets for Unleaded Gasoline and Diesel Gas Oil Hsein, et al., 2019, Life cycle assessment of water supply in Singapore – A water-scarce urban city with multiple water sources. A*Star Singapore Institute of Manufacturing Technology, Deloitte and Temasek – Environmental Impact of Key Food Items in Singapore

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Greenhouse Gas (GHG) Emissions

The following table details the definition, boundaries and sources of emission factors for each GHG emission source mapped against the ISO 14064-1 and GHG protocol categories.

ISO 14064-1 Category	GHG Protocol	Definition and Boundaries	Source of Emission Factors												
Category 2: Indirect GHG emissions due to imported energy	Scope 2 – Energy Indirect GHG Emissions	<p>Definition and Boundary: Indirect GHG emissions that result from the generation of purchased electricity consumed in Mandai Wildlife Group’s premises excluding recharges from tenants, expressed in tonnes of carbon dioxide equivalent (tCO₂e).</p> <p>We have adopted a location-based and market-based approach for our Scope 2 GHG emissions in accordance with the GHG Protocol Scope 2 Guidance. Through this approach, we aim to provide more accurate emissions quantifications by accounting for different contractual instruments and enhancing the precision of emissions factors, including methods to account for renewable energy certificates (RECs).</p> <p>All RECs sourced are in line with the requirements of the Singapore Standards (SS) 673: Code of Practice for Renewable Energy Certificates.</p>	<p>GHG emissions were calculated using the grid emissions factors (GEF) sourced from the Singapore Energy Statistics, the Energy Market Authority’s (EMA) annual publication on energy statistics in Singapore.</p> <p>The following table details the GEF values (in kgCO₂/kWh) used for the reporting years.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Emission factor (kgCO₂/kWh)</th> <th>Published year</th> </tr> </thead> <tbody> <tr> <td>FY23/24</td> <td>0.4168</td> <td>EMA published in 2023</td> </tr> <tr> <td>FY22/23</td> <td>0.4057</td> <td>EMA published in 2022</td> </tr> <tr> <td>FY21/22</td> <td>0.4080</td> <td>EMA published in 2021</td> </tr> </tbody> </table>	Year	Emission factor (kgCO ₂ /kWh)	Published year	FY23/24	0.4168	EMA published in 2023	FY22/23	0.4057	EMA published in 2022	FY21/22	0.4080	EMA published in 2021
Year	Emission factor (kgCO ₂ /kWh)	Published year													
FY23/24	0.4168	EMA published in 2023													
FY22/23	0.4057	EMA published in 2022													
FY21/22	0.4080	EMA published in 2021													
Category 3: Indirect GHG emissions due to transport	Scope 3 Cat 4: Upstream Transport and Distribution	<p>Definition and Boundary: Emissions from the following transport sources:</p> <ol style="list-style-type: none"> Land transport for delivery of goods from local warehouse to Mandai Wildlife Group premises International air travel for animal collection, including both imported and exported animals Bus services chartered by Mandai Wildlife Group Transport of waste from Mandai Wildlife Group premises to waste disposal sites <p>Methodology and Assumptions Used:</p> <ul style="list-style-type: none"> Fuel-based method for a, c and d Distance-based method for b 	<ul style="list-style-type: none"> UK Department for Energy Security & Net Zero: Greenhouse gas reporting: conversion factors 2023 Land Transport Authority, Fuel Cost Calculator 												

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Greenhouse Gas (GHG) Emissions

The following table details the definition, boundaries and sources of emission factors for each GHG emission source mapped against the ISO 14064-1 and GHG protocol categories.

ISO 14064-1 Category	GHG Protocol	Definition and Boundaries	Source of Emission Factors
Category 3: Indirect GHG emissions due to transport	Scope 3 Cat 6: Staff Business Travel	Definition and Boundary: Emissions from International air travel for Mandai Wildlife Group’s staff for business trips Methodology and Assumptions Used: Distance-based method for air-travel	<ul style="list-style-type: none"> UK Department for Energy Security & Net Zero: Greenhouse gas reporting: conversion factors 2023
	Scope 3 Cat 7: Staff Commuting	Definition and Boundary: Emissions from employees travelling to and from main work location. Methodology and Assumptions Used: Distance-based method	<ul style="list-style-type: none"> Land Transport Authority, Land Transport Master Plan 2013 Dollar and sense, 2022, Cost Of Owning A Motorcycle In Singapore Over 10 Years.
	Scope 3 Cat 9: Downstream Transport and Distribution	Reason for Exclusion: GHG emissions from Scope 3 Cat 9 (estimated) excluded because it was assessed to be less than 1% of total inventory. Small scale e-commerce activities started in October 2021. In FY23/24, a total of 1968 orders were delivered across Singapore.	
Category 4: Indirect GHG caused by products used by the organisation	Scope 3 Cat 1: Purchased Goods and Services	Definition and Boundary: Emissions from the goods and services procured to support Mandai Wildlife Group’s business operations within our identified operational boundaries. Methodology and Assumptions Used: Average-data method and Spend-based method	<ul style="list-style-type: none"> United States Environmental Protection Agency (US EPA) Supply chain Greenhouse Gas Emission Factors for US Industries and Commodities (v1.2)
	Scope 3 Cat 2: Capital Goods		
	Scope 3 Cat 3: Fuel and Energy-Related Activities	Definition and Boundary: Emissions related to the production of fuels and energy purchased and consumed. Methodology and Assumptions Used: Average-data method	<ul style="list-style-type: none"> UK Department for Energy Security & Net Zero: Greenhouse gas reporting: conversion factors 2021 The Singapore Energy Statistics, the Energy Market Authority’s (EMA) annual publication on energy statistics in Singapore

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Greenhouse Gas (GHG) Emissions

The following table details the definition, boundaries and sources of emission factors for each GHG emission source mapped against the ISO 14064-1 and GHG protocol categories.

ISO 14064-1 Category	GHG Protocol	Definition and Boundaries	Source of Emission Factors
Category 4: Indirect GHG caused by products used by the organisation	Scope 3 Cat 5: Operation Waste Disposed	Definition and Boundary: E-Waste collected from MWG's premises, including leased warehouse facility in an external location Methodology and Assumptions Used: Average data method	<ul style="list-style-type: none"> National Environment Agency, 2022, Singapore's Fifth National Communication and Fifth Biennial Update Report
	Scope 3 Cat 8: Upstream Leased Assets	Definition and Boundary: Scope 1 and 2 emissions from leased office space. Methodology and Assumptions Used: Lessor-specific method	<ul style="list-style-type: none"> Refer to Scope 1 and 2 sources
Category 5: Indirect GHG emissions associated with the use of the organisation's products	Scope 3 Cat 10: Processing of Sold Products	Reason for Exclusion: Not relevant to Mandai Wildlife Group as we do not have sold intermediate products.	
	Scope 3 Cat 11: Use of Sold Products	Reason for Exclusion: Assessed to be immaterial to MWG as less than 1% of MWG's sold products lead to emissions. Examples of such products are souvenirs that require electricity or battery to operate.	
	Scope 3 Cat 12: End of Life Treatment of Sold Products	Definition and Boundary: Emissions due to disposal of Mandai Wildlife Group's sold products. These are items sold from its retail outlets, including souvenirs, apparel, and toys. Methodology and Assumptions Used: Average-data method	<ul style="list-style-type: none"> National Environment Agency, 2022, Singapore's Fifth National Communication and Fifth Biennial Update Report
Scope 3 Cat 13: Downstream Leased Assets	Definition and Boundary: Scope 1 and 2 emissions from tenants. Tenants who did not submit information per data request were excluded from the GHG inventory. We plan to engage them more closely in FY24/25 to obtain the information required. Methodology and Assumptions Used: Asset-specific method	<ul style="list-style-type: none"> Refer to Scope 1 and 2 sources 	

Definitions and Methodology

Planet Pillar

Sustainable Operations Management

Energy and Greenhouse Gas (GHG) Management

Greenhouse Gas (GHG) Emissions

The following table details the definition, boundaries and sources of emission factors for each GHG emission source mapped against the ISO 14064-1 and GHG protocol categories.

ISO 14064-1 Category	GHG Protocol	Definition and Boundaries	Source of Emission Factors
Category 5: Indirect GHG emissions associated with the use of the organisation's products	Scope 3 Cat 14: Franchises	Reason for Exclusion: MWG does not have existing franchises.	
	Scope 3 Cat 15: Investments	Reason for Exclusion: MWG does not have existing investments.	
Category 6: Indirect GHG emissions from other sources	NA	-	-

Material Efficiency, Circularity and Waste Management

Waste

- **Boundary:** Consumption includes the operation of four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST), activities from Mandai X, our venture division and our non-operational park, Jurong Bird Park.
- **Definition of Waste Generated:** Total waste generated from Mandai Wildlife Group premises that directs to recovery and disposal.
 - ◊ **Categories of Recycled Waste:** Paper, cardboard, horticulture garden waste, wood from pruning and electronic waste.
 - ◊ **Non-Hazardous Waste:** This includes general waste, food waste, and animal dung, which do not pose a significant risk to health or the environment.
 - ◊ **Hazardous Waste:** In Mandai Wildlife Group, it includes animal carcasses, which require special handling and disposal procedures due to potential health risks.
- **Methodology for Calculating Waste Intensity:** Derived by taking the total waste generated divided by the total number of visitors for the reporting year.

Water and Effluents Management

Water and Effluents

- **Boundary:** Consumption includes the operation of four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST), activities from Mandai X, our venture division and our non-operational park, Jurong Bird Park.
- **Water Consumption Definition:** Water used by an organisation such that it is no longer available for use by the ecosystem or local community in the reporting period.
- **Potable Water Definition:** Potable water is defined as water that is safe for human consumption, sourced exclusively from a third-party supplier, the Public Utilities Board (PUB).
- **NEWater Definition:** NEWater is a high-grade reclaimed water produced by further purifying treated used water through advanced membrane technologies and ultra-violet disinfection, making it safe for a range of uses.
- **Methodology for Calculating Water Intensity:** Derived by taking the total water consumed divided by the total number of visitors for the reporting year.

Definitions and Methodology

People Pillar

Employee Health, Safety and Well-being

Employment Type and Contract

- **Employee Definition:** An individual who is in an employment relationship with Mandai Wildlife Group according to the respective national laws or legislations. All employee data relates to the year's headcount as at 31 March 2024.
- **Boundary:** Total employees reported covers Mandai Wildlife Group's operations including the four parks (Singapore Zoo, River Wonders, Night Safari, Bird Paradise and Mandai Wildlife WEST) and Mandai X, our venture division.
- **Permanent Full-Time Definition:** An employee whose working hours are defined according to national legislation and practice regarding working time. Based on Singapore's Employment Act by MOM, a full-time employee is an individual required under his/her contract of service to work for not less than 35 hours a week.
- **Contract Definition:** A contract with an employee, for full-time or part-time work, for an indeterminate period.

Parental Leave

- **Parental Leave Definition:** Leave granted to male and female employees on the grounds of the birth of a child. This includes maternity, paternity, shared parental leave and childcare leave.
- **Return to Work Rate Methodology:** Number of employees who returned to work after parental leave ended, over number of employees who took parental leave, expressed as a percentage.
- **Retention Rate Methodology:** Number of employees who returned to work after parental leave ended and who were still employed 7 months after their return to work, over number of employees who took parental leave, expressed as a percentage.
- **Boundary:** Return to work rate and retention rates reported follow the same boundary as Employment Type.

Workplace Health and Safety

Work-Related Incidents and Injuries

- **Work-Related Incidents Definition:** An unexpected and unplanned occurrence arising out of or in the course of work that could or does result in injury or ill health or death. As per MOM's definition, it could also be a Dangerous Occurrence, an Occupational Disease or:
 - ◊ Traffic accidents that happen at the workplace or in the course of work, e.g. a traffic accident while commuting to work on company transport.
 - ◊ Accidents that are incidental to or from work, e.g. slipping and falling within the workplace but when not performing official work duties.
 - ◊ Conditions of a medical nature, such as heart attacks or strokes, that may be triggered by work.

This definition is based on ISO 45001:2018 and MOM's Guidelines.

- **Boundary:** The coverage for occupational incidents includes all employees and workers who are non-employees at Mandai Wildlife Group premises.
- **Definition of a Workers Who Is a Non-Employee:** An individual whose work, or workplace, is controlled by Mandai Wildlife Group. This includes contractors for conservancy and security services.
- **Definition of Major Injuries:** As per MOM's definition, non-fatal injuries which are more severe in nature. These include amputation, blindness, deafness, paralysis, crushing, fractures and dislocations: head, back, chest, neck and hip, exposure to electric current, asphyxia/drowning, burns with more than 20 days of medical leave, concussion with more than 20 days of medical leave, mosquito borne diseases with more than 20 days of medical leave, virus outbreak with more than 20 days of medical leave.
- **Definition of Minor Injuries:** As per MOM's definition, minor injuries refer to non-severe injuries with any instance of medical leave or light duties.
- **Methodology for Calculating Workplace Injury Rate:** $\text{Number of Major and Minor Injuries} / \text{No. of staff} \times 100$
- **Methodology for Calculating Guest Incident Frequency Rate:** $\text{Number of Guest Incidents} / \text{No. of attendance} \times 100,000$

Data Tables

Planet Pillar						
Material Topic: Animal Welfare and Life-Sciences Research						
Mandai Wildlife Group Breeding Programmes (GRI 304-4)						
	FY21/22		FY22/23		FY23/24	
	Species	Specimen	Species	Specimen	Species	Specimen
Total animal collection	978	21,861	963	21,938	941	22,126
Total Threatened species <i>*Threatened species include animals that are Extinct In The Wild; Critically Endangered; Endangered and Vulnerable, classification is based on The IUCN Red List Threatened Species.</i>	255	3,537	262	3,759	272	3,833
Extinct in the wild	0	0	1	3	1	3
Critically endangered (CR)	60	489	62	560	64	546
Endangered (EN)	93	2,118	98	2,448	102	2,407
Vulnerable (VU)	102	930	101	748	105	877
Near threatened (NT)	68	1,119	65	1,028	62	983
Least concern (LC)	531	9,723	532	10,402	535	11,759
Non Evaluated (NE) & Data Deficient (DD)	124	7,482	104	6,749	72	5,551
Total Number of Managed Species and Number of Animals Born						
	FY21/22		FY22/23		FY23/24	
Total number of managed species	155		162		151	
Number of animals born	-		834		1,126	

Data Tables

Material Topic: Animal Welfare and Life-Sciences Research			
Total Number of Peer-reviewed Journals Published			
	FY21/22	FY22/23	FY23/24
Number of peer-reviewed journals published	20	15	19
Material Topic: Sustainable Operations Management			
Emissions Performance (GRI 305-1, 305-2, 305-3, 305-4)			
	FY21/22	FY22/23	FY23/24
Direct GHG Emissions			
Scope 1 emissions (tCO ₂ e)	957.2	1,000.9	990.3
Indirect GHG Emissions from Imported Energy			
Scope 2 – Location-based (tCO ₂ e)	8,553.7	8,557.9	14,524.5
Scope 2 – Market-based (tCO ₂ e)	6,525.2	3,689.5	2,228.9
Other Indirect GHG Emissions			
Scope 3 emissions (tCO ₂ e)	133,504.8	122,610.1	157,963.8
Scope 3 emissions intensity (tCO ₂ e / per guest)	70.3	42.4	36.0
Indirect GHG Emissions from Transportation			
Cat 4: Upstream Transport & Distribution	565.4	763.6	862.1
Cat 6: Staff Business Travel	1.9	197.9	679.9
Cat 7: Staff Commuting	549.2	570.3	681.3
Indirect GHG Emissions from Products Used by Organisation			
Cat 1: Purchased Goods and Services (including FLAG Emissions from Food & Feed)	26,160.4	24,972.2	20,024.1
Cat 2: Capital Goods	103,360.4	92,490.8	130,276.9

Data Tables

Material Topic: Sustainable Operations Management			
Emissions Performance (GRI 305-1, 305-2, 305-3, 305-4)			
	FY21/22	FY22/23	FY23/24
Indirect GHG Emissions from Products Used by Organisation			
Cat 3: Fuel and Energy-related Activities	1,340.4	1,386.1	2,120.5
Cat 5: Operation Waste Disposed	1,357.9	2,030.4	2,466.7
Cat 8: Upstream Leased Assets	N/A	N/A	1.1
Indirect GHG Emissions Associated with the Use of Products from the Organisation			
Cat 12: End of Life Treatment of Sold Products	85.3	130.6	180.8
Cat 13: Downstream Leased Assets	83.9	68.2	670.4
Total Scope 1, 2 and 3 Emissions			
Total - Location-based (tCO ₂ e)	143,015.7	132,168.9	173,478.6
Total - Market-based (tCO ₂ e)	140,987.2	127,300.5	161,183.0
Emissions Performance (GRI 305-1, 305-2, 305-3, 305-4)			
	FY21/22	FY22/23	FY23/24
Total energy consumption (MWh)	21,757.1	24,918.3	37,893.0
Total fuel consumption from non-renewable sources (MWh)	434.1	545.3	789.0
Energy Performance (GRI 302-1)			
	FY21/22	FY22/23	FY23/24
Total electricity consumption (MWh)	21,323	24,373	37,104
Total electricity consumption from non-renewable sources (MWh)	16,291	11,904	6,905
Total electricity consumption from renewable sources (MWh)	32	469	699
Purchased Renewable Energy Certificates (RECs) from solar facility in Vietnam (MWh)	5,000	12,000	29,500

Data Tables

Material Topic: Sustainable Operations Management			
Waste Performance (GRI 306-3, 306-4, 306-5)			
	FY21/22	FY22/23	FY23/24
Total Waste Generated (tonnes)¹	3,437.0	3,656.6	3,544.4
Waste Intensity (kg/Visitor)	1.23	1.16	0.82
Total waste disposed (tonnes)	2,204.7	2,936.1	2,782.1
General Waste	1,360.7	2,110.9	2,048.8
Animal Dung	844.0	825.2	733.3
Total waste recycled (tonnes)	1,232.3	720.5	762.3
Cardboard	32.4	33.2	40.6
Commingled Recyclables	69.3	10.0	7.2
Horticulture	1,130.6	677.3	714.5
Waste Performance (GRI 306-3, 306-4, 306-5)			
	FY21/22	FY22/23	FY23/24
Non-hazardous waste (tonnes)	3,437.0	3,656.6	3,544.4
Non-hazardous waste incinerated	2,204.7	2,936.1	2,782.1
Non-hazardous waste recycled	1,232.3	720.5	762.3
Hazardous waste (tonnes)	4.8	5.4	7.4
Hazardous waste incinerated	4.8	5.4	7.4
Hazardous waste recycled	0	0	0
Water Performance (GRI 303-5)			
	FY21/22	FY22/23	FY23/24
Potable water (m³)	765,529	839,920	815,739
NEWater (m³)	127,355	130,280	89,759

¹ Refers to total non-hazardous waste only.

Data Tables

People Pillar

Material Topic: Employee Health, Safety and Well-being

Breakdown of Employees by Employment Type as of 31 Mar 2024 (GRI 2-7)

Employment Type	Female	Male	Grand Total
Permanent (Full Time)	624	717	1341
Contract	31	21	52

Breakdown of Employees by Employment Type as of 31 Mar 2024 (GRI 2-7)

Employment Type	Female	Male	Grand Total
Permanent (Full Time)	624	717	1341
Contract	31	21	52

Breakdown by Employment Type/Entity/Gender as of 31 Mar 2024 (GRI 2-7)

Entities/ Employment Type	Female	Male	Grand Total
Mandai Global	14	13	27
Permanent (Full Time)	13	13	26
Contract	1	0	1
Mandai Park Development	52	44	96
Permanent (Full Time)	37	35	72
Contract	15	9	24
MPD Operations	70	86	156
Permanent (Full Time)	68	83	151
Contract	2	3	5

Data Tables

Material Topic: Employee Health, Safety and Well-being			
Breakdown by Employment Type/Entity/Gender as of 31 Mar 2024 (GRI 2-7)			
Entities/ Employment Type	Female	Male	Grand Total
Spore Zoological Gardens	519	595	1,114
Permanent (Full Time)	506	586	1,092
Contract	13	9	22
Grand Total	655	738	1,393
Material Topic: Employee Health, Safety and Well-being			
Parental Leave (Period : 1 Jan 2023 – 31 Dec 2023) (GRI 401-3)			
	Female	Male	Grand Total
Parental Leave Usage (1 Jan 2023 – 31 Dec 2023)	11	19	30
Total number of employees that returned to work, after Parental Active as of 1 Jan 2024	10	17	27
Total number of employees that returned to work, after 7 months Active as of 31 Jul 2024	9	16	25
% Return to work (as of 1 Jan 2024)	90%		
% Retention Rate (as of 31 Jul 2024)	83%		
Work-related Injuries (GRI 403-9)			
Indicators for Employees	FY21/22	FY22/23	FY23/24
Workplace Injuries	-	103	142
Major Injuries	-	5	8
Minor Injuries	-	98	134
Workplace Injury Rate	-	8.1	9.4
Major Injury Rate	-	0.4	0.5

Data Tables

Material Topic: Employee Health, Safety and Well-being			
Work-related Injuries (GRI 403-9)			
Indicators for Employees	FY21/22	FY22/23	FY23/24
Minor Injury Rate	-	7.8	8.8
Man-day Lost	-	458	565
Indicators for Injuries in Development Operations	FY21/22	FY22/23	FY23/24
Major	0	0	1
Minor	1	0	2
Indicators for Guests	FY21/22	FY22/23	FY23/24
All Parks			
Frequency Rate	-	-	19
Number of Incidents	-	-	848
Major Injury Rate	-	0.4	0.5
Minor Injury Rate	-	7.8	8.8
Topics of Interest: Diversity, Equity and Inclusion			
Diversity of Governance Bodies (GRI 405-1)	Female	Male	Grand Total
Total number of board members	23%	77%	13
	Under 30 years old	30 - 50 years old	Above 50 years old
Board members (Age group)	0%	8%	92%
	Executive	Independent	From minority or vulnerable groups
Board members (Age group)	0%	8%	92%

GRI Content Index

GRI Standards Disclosures	Mandai Wildlife Group has reported the information cited in this GRI Content Index for the period 1 April 2023 to 31 March 2024 with reference to the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Sector Standard(s)	Not applicable

GRI Standards Disclosures		References and / or Explanation	Page Number
GRI 2: General Disclosures 2021			
The Organisation and its Reporting Practices			
2-1	Organisation details	About Mandai Wildlife Group & About this Report	4
2-2	Entities included in the organisation's sustainability reporting	About Mandai Wildlife Group & About this Report	4
2-3	Reporting period, frequency and contact point	About Mandai Wildlife Group & About this Report	4
2-4	Restatements of information	Not applicable, as this is Mandai Wildlife Group's inaugural sustainability report.	-
2-5	External Assurance	About Mandai Wildlife Group & About this Report; Energy and Greenhouse Gas (GHG) Management	4, 25-29
Activities and Workers			
2-6	Activities, value chain, and other business relationships	About Mandai Wildlife Group & About this Report; Sustainable Supply Chain Management	4, 56-58
2-7	Employees	Data Tables	72-78
2-8	Workers who are not employees	Not disclosed because information incomplete with limited coverage of workers.	-
Governance			
2-9	Governance structure and composition	Sustainability Governance	11
2-10	Nomination and selection of the highest governance body	Not disclosed due to confidentiality considerations.	-
2-11	Chair of the highest governance body	Sustainability Governance	11
2-12	Role of the highest governance body in overseeing the management of impacts	Sustainability Governance	11

GRI Content Index

GRI Standards Disclosures		References and / or Explanation	Page Number
GRI 2: General Disclosures 2021			
Governance			
2-13	Delegation of responsibility for managing impacts	Sustainability Governance	11
2-14	Role of the highest governance body in sustainability reporting	Sustainability Governance	11
2-15	Conflicts of interest	Sustainability Framework	7-8
2-16	Communication of critical concerns	Sustainability Governance	11
2-17	Collective knowledge of the highest governance body	Not disclosed due to confidentiality considerations.	-
2-18	Evaluation of the performance of the highest governance body	Not disclosed due to confidentiality considerations.	-
2-19	Remuneration policies	Not disclosed due to confidentiality considerations.	-
2-20	Process to determine remuneration	Not disclosed due to confidentiality considerations.	-
2-21	Annual total compensation ratio	Not disclosed due to confidentiality considerations.	-
Strategy, Policies and Practices			
2-22	Statement on sustainable development strategy	Message from the Acting Chairman and GCEO; Sustainability Framework	3, 7-8
2-23	Policy commitments	Sustainability Framework; shown throughout the report	7-8
2-24	Embedding policy commitments	Sustainability Framework; shown throughout the report	7-8
2-25	Processes to remediate negative impacts	Sustainability Framework	7-8
2-26	Mechanisms for seeking advice and raising concerns	Sustainability Framework	7-8
2-27	Compliance with laws and regulations	<p>Mandai Wildlife Group is committed to complying with all applicable laws and regulations set forth by the Singapore Government. We continuously monitor and ensure adherence to these legal requirements through robust internal controls and regular audits.</p> <p>There were no material instances of non-compliance with laws and regulations in this context during the reporting year.</p>	-

GRI Content Index

GRI Standards Disclosures		References and / or Explanation	Page Number
GRI 2: General Disclosures 2021			
Stakeholder Engagement			
2-28	Membership associations	About Mandai Wildlife Group & About this Report	4
2-29	Approach to stakeholder engagement	Stakeholder Engagement	12
2-30	Collective bargaining agreements	Employee Well-being	45-46
Material Topics			
GRI 3: Material Topics 2021			
3-1	Process to determine material topics	Materiality Assessment	6
3-2	List of material topics	Materiality Assessment	6
Topic-Specific Disclosures			
GRI Standards Disclosures		References and / or Explanation	Page Number
Planet Pillar			
Material Topic: Biodiversity Protection and Management			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Biodiversity Protection and Management	15-19
GRI 304: Biodiversity 2016			
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity Protection and Management; Animal Welfare and Life-Sciences Research	15-21
304-2	Significant impacts of activities, products and services on biodiversity	Biodiversity Protection and Management; Animal Welfare and Life-Sciences Research	15-21
304-3	Habitats protected or restored	Biodiversity Protection and Management; Animal Welfare and Life-Sciences Research	15-21
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Biodiversity Protection and Management; Animal Welfare and Life-Sciences Research; Data Tables	15-21, 72-78

GRI Content Index

Topic-Specific Disclosures			
GRI Standards Disclosures		References and / or Explanation	Page Number
Material Topic: Animal Welfare and Life-Sciences Research			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Animal Welfare and Life-Sciences Research	20-23
Material Topic: Sustainable Operations Management			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Sustainable Operations Management	24
GRI 302: Energy 2016			
302-1	Energy consumption within the organisation	Energy and Greenhouse Gas (GHG) Management; Data Tables	25-29, 72-78
302-4	Reduction of energy consumption	Energy and Greenhouse Gas (GHG) Management	25-29
GRI 303: Water and Effluents 2018			
303-1	Interactions with water as a shared resource	Water and Effluents Management	34-35
303-2	Management of water discharge-related impacts	Water and Effluents Management	34-35
303-5	Water consumption	Water and Effluents Management; Data Tables	34-35, 72-78
GRI 305: Emissions 2016			
305-1	Direct (Scope 1) GHG emissions	Energy and Greenhouse Gas (GHG) Management; Data Tables	25-29, 72-78
305-2	Energy indirect (Scope 2) GHG emissions	Energy and Greenhouse Gas (GHG) Management; Data Tables	25-29, 72-78
305-3	Other indirect (Scope 3) GHG emissions	Energy and Greenhouse Gas (GHG) Management; Data Tables	25-29, 72-78
305-4	GHG emissions intensity	Energy and Greenhouse Gas (GHG) Management; Data Tables	25-29, 72-78
305-5	Reduction of GHG emissions	Energy and Greenhouse Gas (GHG) Management	25-29

GRI Content Index

Topic-Specific Disclosures			
GRI Standards Disclosures		References and / or Explanation	Page Number
Material Topic: Sustainable Operations Management			
GRI 306: Waste 2020			
306-1	Waste generation and significant waste-related impacts	Material Efficiency, Circularity and Waste Management	30-33
306-2	Management of significant waste-related impacts	Material Efficiency, Circularity and Waste Management	30-33
306-3	Waste generated	Material Efficiency, Circularity and Waste Management; Data Tables	30-33, 72-78
306-4	Waste diverted from disposal	Material Efficiency, Circularity and Waste Management; Data Tables	30-33, 72-78
306-5	Waste directed to disposal	Material Efficiency, Circularity and Waste Management; Data Tables	30-33, 72-78
People Pillar			
Material Topic: Community Engagement and Advocacy			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Community Engagement and Advocacy	39-42
Material Topic: Visitor Health, Safety, Experience and Satisfaction			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Visitor Health, Safety, Experience and Satisfaction	43-44
Material Topic: Employee Health, Safety and Well-Being			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Employee Health, Safety and Well-being	45-46
GRI 401: Employment 2016			
401-3	Parental leave	Data Tables	72-78

GRI Content Index

Topic-Specific Disclosures			
GRI Standards Disclosures		References and / or Explanation	Page Number
Material Topic: Employee Health, Safety and Well-Being			
GRI 403: Occupational Health and Safety 2018			
403-1	Occupational health and safety management system	Workplace Health and Safety	46
403-2	Hazard identification, risk assessment, and incident investigation	Workplace Health and Safety	46
403-3	Occupational health services	Workplace Health and Safety	46
403-4	Worker participation, consultation, and communication on occupational health and safety	Workplace Health and Safety	46
403-5	Worker training on occupational health and safety	Workplace Health and Safety	46
403-6	Promotion of worker health	Employee Well-being	45-46
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Workplace Health and Safety	46
403-8	Workers covered by an occupational health and safety management system	Workplace Health and Safety	46
403-9	Work-related injuries	Workplace Health and Safety; Data Tables	46, 72-78
Topic of Interest: Diversity, Equity and Inclusion			
GRI 405: Diversity and Equal Opportunity 2016			
405-1	Diversity of governance bodies and employees	Data Tables	72-78
Topic of Interest: Talent Management and Development			
GRI 404: Training and Education 2016			
404-2	Programmes for upgrading employee skills and transition assistance programmes	Talent Management and Development	48
Material Topic: Corporate Governance and Ethics			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Corporate Governance and Ethics	49

GRI Content Index

Topic-Specific Disclosures			
GRI Standards Disclosures		References and / or Explanation	Page Number
Material Topic: Corporate Governance and Ethics			
GRI 205: Anti-Corruption 2016			
205-1	Operations assessed for risks related to corruption	Corporate Governance and Ethics	49
205-2	Communication and training about anti-corruption policies and procedures	Corporate Governance and Ethics	49
205-3	Confirmed incidents of corruption and actions taken	Corporate Governance and Ethics	49
Performance Pillar			
Material Topic: Economic Value Creation			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Economic Value Creation	52-55
GRI 201: Economic Performance 2016			
201-1	Direct economic value generated and distributed	Economic Value Creation	52-55
Material Topic: Sustainable Supply Chain Management			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Sustainable Supply Chain Management	56-58
Material Topic: Innovation and Technology			
GRI 3: Material Topics 2021			
3-3	Management of material topics	Innovation and Technology	59-61

Mandai

WILDLIFE GROUP

Come to Life For nature, wildlife and our planet

Learn more about our conservation and sustainability work through our [Yearbook](#) and [Mandai Nature Impact Report](#).

We invite individuals, organisations, and sponsors to partner with us in our mission to protect biodiversity.

For feedback or to explore collaboration opportunities, please contact us at: sustainable.solutions@mandai.com