# Biodiversity & No-Deforestation Resolve and implementation 2024

Osotspa Public Company Limited







Osotspa Public Company Limited recognize the importance of natural ecosystem and the urgent need of biodiversity conservation, which we intent to help preserve natural ecosystem from deforestation and any operation that cause negative impacts

Osotspa also strive to protect the important significant conservation or biodiversity areas which included UNESCO World Heritage Sites, Wetlands listed under the Ramsar Convention, Protected areas I-IV categories defined by IUCN, and protected areas defined by the local law.

### Scope

Osotspa Public Company Limited and subsidiaries including the business value chain.

# **Our Biodiversity Resolve**



- 1. To be aware, protect, maintain, enhance, or conserve global and national important biodiversity and critical natural ecosystems.
- 2. To Apply the "Mitigation Hierarchy" into our operation: (avoid, minimize, restore & offset)
  - Avoid avoid creating impacts on biodiversity.
  - Reduce reduce the intensity of impact on biodiversity that is unable to avoid.
  - Restore rehabilitate degraded ecosystem.
  - Offset compensate for the loss of biodiversity
  - Transform change to the suitable method to avoid negative impact on nature
- 3. To comply with regulations, adopt the voluntary requirements and align with local and global standards that relate to environment and biodiversity protection to achieve "No Net Loss".

# **Our No-Deforestation Resolve**



- 1. To be aware, protect, maintain, enhance, or conserve global and national important biodiversity and critical natural ecosystems.
- 2. To Apply the "Mitigation Hierarchy" into our operation: (avoid, minimize, restore & offset)
  - Avoid avoid creating impacts on biodiversity.
  - Reduce reduce the intensity of impact on biodiversity that is unable to avoid.
  - Restore rehabilitate degraded ecosystem.
  - Offset compensate for the loss of biodiversity
  - Transform change to the suitable method to avoid negative impact on nature
- 3. To comply with regulations, adopt the voluntary requirements and align with local and global standards that relate to environment and biodiversity protection to achieve "No Net Loss".





- 1. Avoid implementing business activities across value chain that may affect biodiversity and seek for opportunity to deploy biodiversity related project into significant conservation or biodiversity areas, such as UNESCO World Heritage Sites, wetlands listed under the Ramsar Convention, protected areas I-IV categories defined by IUCN, and protected areas defined by the local law.
- 2. Operate business with concerns of no net loss in biodiversity or no net deforestation. Where negative impact is unavoidable, assess the potential impact and set remedial measures in place aligning with the biodiversity mitigation hierarchy, which includes avoid, reduce, restore, offset and transform.
- 3. Review the processes and practices to ensure compliance with applicable regulations and/or mandatory standards.
- 4. Conduct a comprehensive biodiversity risk assessment to identify critical importance of biodiversity conservation and the impact for Osotspa's operating site.
- 5. Evaluate and monitor the risks of Osotspa's activities as well as monitor biodiversity value regularly.
- 6. Communicate and engage with stakeholders to enhance our understanding and promote conservation efforts for driving positive change for the biodiversity.

# **Biodiversity Risk Assessment**

Osotspa conducted an initial assessment of its dependencies and impacts on nature using the Taskforce for Nature-related Financial Disclosure (TNFD)'s **LEAP framework**. This framework guided the company in **Locating**, **Evaluating**, **Assessing**, **and Preparing** to address its nature-related issues.



# Osotspa's Value Chain



Osotspa has mapped out and assess the value chain components to identify which sectors are involved throughout Osotspa's value chain.

**Evaluate** 

- Upstream Supplier
  - Responsible Consumption of Natural Resources
  - Sustainable Sourcing
- Direct Operations
  - o Healthy & Responsible Consumption
  - o Recycling and Recovery
  - o Manufacturing Efficiency & Packaging Intelligence
  - o Innovative Distribution
- Downstream- Customer/ Sustainable Partnerships with Retailers

Sector classification systems such as the Global Industry Classification Standard ("GICS") is used to determined the sector and sub-industry selection (which is also used in the ENCORE tool).

### L - Locate

# **Location sensitivity summary**

Third party global open-source data sets are used to determine the state of nature and asset red flags for sensitivity locations using GIS analysis with key indicators mentioned below:

Four criteria to be evaluated:



Biodiversity Importance



Ecosystem Integrity



Water Stress Ecosystem service delivery importance

Value Chain Osotspa Public Company Limited Pharmaceuticals services Direct Operation Osotspa iPGLNakhon Si Siam Glass Direct Operation Ayutthaya Siam Cullet Company limited Company Limited Soft Drinks Direct Operation Paper Packaging Direct Operation Osotspa PCL Osotspa PCL Ayutthaya Osotspa Public Company Limited Metal, Glass & Plastic Containers | Direct Operation (Energy Drink) Osotspa Public Company Limited Metal Glass & Plastic Containers Direct Operation Siam Glass Avutthava Company limited Metal, Glass & Plastic Containers | Direct Operation Siam Cullet Company Limited Metal, Glass & Plastic Containers | Direct Operation Nakhon Navok Greensville Company Limited Personal Products Direct Operation Greensville Company Limited Direct Operation THAI CONTAINERS Nong Suea THAI CONTAINERS GROUP CO., LTD.(THAI CON) Upstream GROUP CO., TD.(THAI CON) General Merchandise Stores CP Axtra Public Company Limited General Merchandise Store Downstream General Merchandise Stores Ek-Chai Distribution System Co., Ltd Downstream Luano Ongkharak Bio C Supercenter Public Company Limited General Merchandise Stores Downstream Pathur Pathum Than Kamphaeng Saer Khlong Thi Yi Sip E Ban Sang Nakhon Pak Kre Nonthabur Bang Nam Ek-Chai Distribution Nakhon Pathom Osotspa PCL (Sport Drink) Ban Pond Nakhon Chai Si Ban Osotspa PCL (Pharmaceutical) Greensville Company Osotspa PCL Bangkok (Energy Drink) Ratchasan Limited (Liquid Supercenter Public Company Limited Greensville Company CP Axtra Public Limited (Talcum) Company Limited 100°40' Site Locations, Value Chain Segmen Scale: 1:470,000 Value Chain with Sensitivity Level Downstream with High Sensitivity Level Coordinate System: GCS WGS 1984 ▲ Upstream with Medium Sensitivity Downstream with Medium Sensitivity Level Service Credit: NOSTRA, Esri, TomTom, Garmin, 0731414 OSP Sustainability 2024 Direct Operation with High Sensitivity Level Province Boundary FAO, NOAA, USGS, Esri, USGS Client: Osotspa Public Company Limited Date: 16/05/2024 Drawn By: SS ERM

- > Sites are prioritized based on:
  - High water stress
  - High current biodiversity importance
  - High ecosystem integrity
  - High Ecosystem service delivery
  - importance

- Buffer zones are added to analysis the nature condition of adjacent areas
- ➤ Sites are analyzed in detail and prioritized to determine high-value or high-risk habitats to align with leading frameworks.

Value Chain	Number of Sites Assessment		
	Low	Medium	High
Direct Operation	1	-	11
Upstream	5	1	1
Downstream	-	3	1
Total	6	4	12

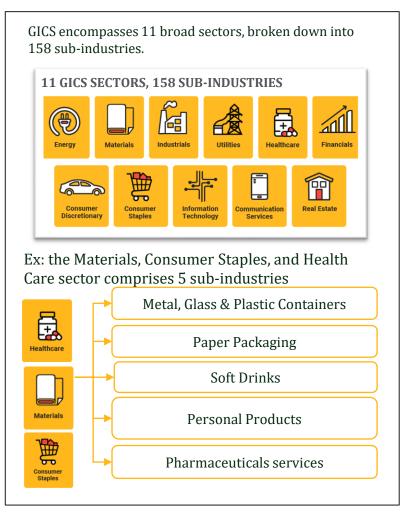
The medium to high sensitivity location in terms of nature-related issues are the first-order prioritization of site locations and are registered in the WWF risk assessment.

#### Number of site exposure to significant biodiversity impact

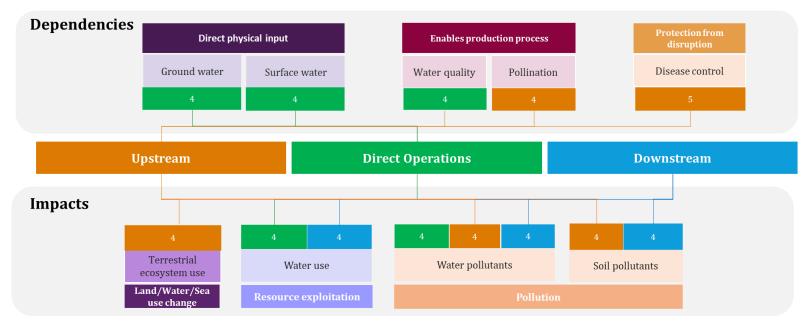
	Number of sites	Total areas (Hectares)
Number of sites of own operation	12	54.2569
Number of sites for Biodiversity Impact Assessment	12	54.2569
Number of site exposure to significant biodiversity impact	11	40.9769
Number of sites with a biodiversity management plan	11	40.9769

### E - Evaluate

The evaluation of sector-level impact and dependency scores is conducted with the ENCORE tool. In order to use the ENCORE tool to assess impact and dependency scores, Osotspa activities were translated into the Global International Classification Standard (GICS) nomenclature used in ENCORE (→ link to ENCORE nomenclature)



The diagram shows nature-related impacts and dependencies that have been identified as priority to Osotspa business based on the ENCORE sector-level assessment along with the adjustment from Osotspa business model and current concerns.



### A - Assess





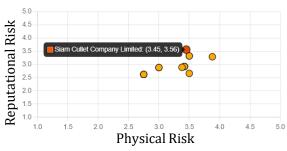
**WWF biodiversity risk filter (WWF BRF)** is used as a tool to assess the potential biodiversity risks from Osotspa operation and value chain as a location-specific approach. The risks assessed involved both impact- and dependency-related biodiversity risks.

#### Number of Sites by Risk type



This graphic shows the distribution of the number of sites at different risk levels for all selected sites

#### **Physical Risk vs Reputational Risk**



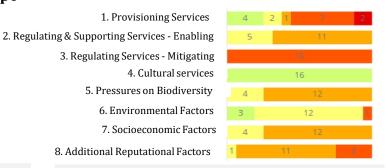
This graphic compares physical risk scores vs reputational risk scores for all selected sites

#### **Number of Sites by Land- or Seascape**



This graphic shows, up to 10 land- or seascapes with the highest number of sites and displays the number of sites associated with physical risk scores.

#### **Number of Sites by Risk Category**



This graphic shows the distribution of risk across the 8 risk categories for all selected sites

#### Low risk **Medium risk** High risk • Air Water Scarcity • Land, Freshwater and Condition Limited Wild Flora & Fauna Availability Sea Use Change · Water Condition Physical risk Fire Hazard • Plant/Forest/Aquatic Pests and Diseases Extreme Heat Tropical Cyclones Pollution • Protected/Cons Key Resource Scarcity Reputational risk erved Areas Biodiversit Media Scrutiny Other y Areas • Labor/Hu **Important** Delineated man Rights Areas Ecosystem Condition

Osotspa grouped and considered nature-related risks identified into 2 main risks types that are integrated into Company-wide risk management system which are;

- Biodiversity related risks including (1) water scarcity and low-quality water condition and (2) scarcity in natural resources including flora and fauna
- Emerging risks (the other identified risks from the tool)

# P - Prepare



Osotspa Public Company plans to publish its first TNFD report by 2025, detailing our nature-related financial disclosures. This report will offer comprehensive insights into our nature-related risks, dependencies, and impacts, in alignment with TNFD recommendations. The process will involve extensive data collection, stakeholder engagement, and rigorous internal reviews to ensure accuracy and relevance. By December 2025, the finalized report will be published and communicated to all stakeholders, demonstrating our commitment to transparency and sustainability

### **Our preparation steps for TNFD Report 2025**

- Data Collection: Gather data on nature-related risks, dependencies, and impacts from various departments.
- Stakeholder Engagement: Conduct meetings with key stakeholders to understand their concerns and expectations.
- Analysis and Assessment: Analyze the collected data to assess nature-related risks and opportunities.
- **Drafting the Report:** Begin drafting the TNFD report, incorporating insights from the analysis.
- **Internal Review:** Share the draft report with internal teams for feedback and revisions.
- **Board Review:** Present the draft report to the Board of Directors for review and approval.
- **Final Revisions:** Make final revisions based on feedback from the Board and other stakeholders.
- **Design and Formatting:** Prepare the report for publication, including design and formatting.
- Approval and Sign-off: Obtain final approval and sign-off from the Board of Directors.
- Pre-publication Checks: Conduct final checks to ensure accuracy and completeness.
- **Publication:** Officially publish the TNFD report and distribute it to stakeholders.
- **Communication:** Announce the publication through press releases, social media, and other communication channels.

# **Risk Management**

Integrating Biodiversity issues into COSO: Enterprise Risk Management Framework

Risk
Identification

The Risk Management and Internal Control (RMIC) team, in collaboration with the Osotspa Leadership Team (OLT), undertakes a comprehensive identification and assessment of biodiversity risks across the entire value chain. This process ensures a thorough understanding of the potential impacts and vulnerabilities that biodiversity-related issue may pose to the organization.

**Z**Risk
Prioritization

Following the identification phase, the RMIC team prioritizes the biodiversity risks based on their materiality and plots these risk factors within a risk matrix. This visual representation aids in understanding the severity and likelihood of each risk. The RMIC team then presents these prioritized risks to the OLT, the Executive Committee (Excom), the Risk Management Committee (RMC), and the Board of Directors (BOD) for their endorsement, ensuring alignment and consensus on the most critical risks to address.

**3**Risk
Management

On a quarterly basis, the RMIC team updates and finalizes the progress of risk mitigation efforts in management meetings. These updates ensure that mitigation strategies are on track and effective. The RMIC team then reports the results of these efforts to the RMC quarterly, and to the RMC and Audit Committee (RMC&AC) and BOD biannually. This regular reporting ensures that senior management and the board remain informed and engaged in the risk management process.

4 Monitoring

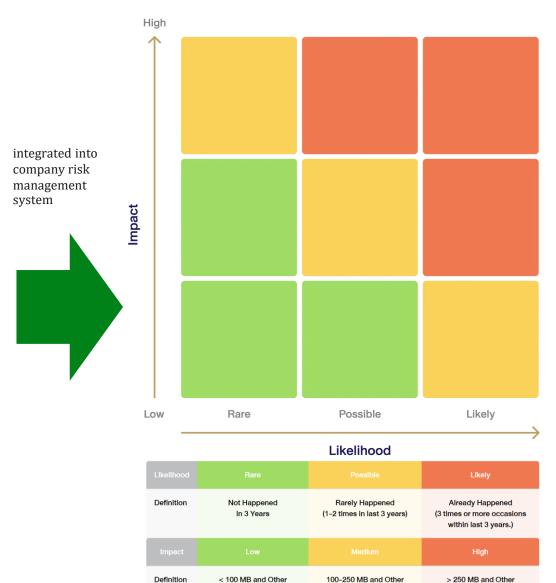
Throughout the year, the RMIC team remains vigilant for any new emerging biodiversity risks. If such risks are discovered, the RMIC team promptly proposes discussions with the OLT and RMC to evaluate and address the new risks and their potential mitigation strategies. If the emerging risk is deemed severe enough, it will be integrated into the enterprise risk management framework, ensuring it is managed with the appropriate level of attention and resources.



### Osotspa's Biodiversity related Risk: Integration to Company Risk Management System



### **Scape Physical Risk** 1. Provisioning Services 1.1 Water Scarcity 1.3 Limited Wild Flora & Fauna Availability 2. Regulating & Supporting Services - Enabling 2.2 Water Condition 2.3 Air Condition 3. Regulating Services - Mitigating 3.2 Fire Hazard 3.3 Plant/Forest/Aquatic Pests and Diseases 3.5 Extreme Heat 3.6 Tropical Cyclones 5. Pressures on Biodiversity 5.1 Land, Freshwater and Sea Use Change 5.4 Pollution **Scape Reputational Risk** 6. Environmental Factors **6.1 Protected/Conserved Areas 6.2 Key Biodiversity Areas 6.3 Other Important Delineated Areas 6.4 Ecosystem Condition** 7. Socioeconomic Factors 7.2 Resource Scarcity: Food - Water - Air 7.3 Labor/Human Rights 8. Additional Reputational Factors 8.1 Media Scrutiny



Qualitative Factors

Qualitative Factors

Qualitative Factors

# **Biodiversity Risk 1: Water scarcity and low-quality water condition**



Risk Item	Mitigation Plan
BD1: Water scarcity and low-quality water condition may lead to disruption in production costs of Beverage, PC HCC and OEM Businesses.  Risk level: Low Likelihood: Low	<ul> <li>Regular monitoring the pumping rate and amount of water sources</li> <li>Regular water treatment/real time monitoring on water quality</li> <li>Initiate Water reduction &amp; Water efficiency programs to support the efficiency of water usage</li> </ul>
	<ul> <li>Identify alternative sources of water and prepare for Business Continuous Plan (BCP) in case of water shortage</li> <li>Study about Deep well license and opportunity to get more licenses for prevent the water shortage</li> </ul>

# Biodiversity Risk 2: Scarcity in natural resources (flora and fauna)



Risk Item	Mitigation Plan	
BD2: Scarcity in natural resources (flora and fauna) may lead to key raw material shortage and mainly impact to production costs of Beverage products	<ul> <li>Change</li> <li>Sourcing and Qualifying the additional suppliers for key materials.</li> <li>Seek for alternative sources for key materials supply with different in country of origin.</li> <li>Seek for substitute supplier to support key raw material supply or replace the key suppliers</li> </ul>	
Risk level: Medium Likelihood: Low	<ul> <li>Collaborate</li> <li>Closely monitoring the key material suppliers, sources and market trend to ensure the market supply situation.</li> <li>Ensure proper inventory level for key materials using in production.</li> <li>Material usage forecast with the production plan to obtain the accurate data for the best material sourcing plan.</li> <li>Reduce</li> <li>Reformulate products' composition to seek the potential of less key materials usage</li> </ul>	

# **Emerging Risk: Biodiversity Related Risk**



Emerging Risk	Potential Impact	Mitigation Plan
Unseen Climate Effects:  Climate change may cause unforeseen disasters, potentially damaging company assets and endangering worker safety, such as extreme heat, cyclones, and fire hazards.	<ul> <li>Sudden environmental disasters those may disrupt company's business continuity by damaging company's assets and natural resources' supply.</li> <li>Damage from natural disasters may cause asset &amp; property losses and human injuries and fatalities</li> <li>High temperature can cause significant health issues of workers such as heat exhaustion, heat stroke, and other heat stress related illnesses.</li> <li>High temperature can increase the levels of air pollution and harmful exposures to workers, such as fine particulate matter (PM) pollution, the buildups of air pollution due to air stagnation, etc.</li> <li>High temperature and humidity can decrease product quality, changes in nutrient composition, color and texture during production, storage and transportation</li> </ul>	<ul> <li>upgrade the existing assets' structure, facilities and equipment as needed based on company's evaluation.</li> <li>Create the appropriate fire buffer zone between community and operational site and</li> </ul>

# **Mitigating Actions**



### Avoidance

- Avoid creating impacts on biodiversity



### Reduction

- Reduce the intensity of impact on biodiversity that is unable to avoid



# Restoration/Regeneration

- Rehabilitate degraded ecosystem



#### Offset

- Compensate for the loss of biodiversity



### **Transform**

- change to the suitable method to avoid negative impact on nature



### **2023-2024** activities



#### Landfill Avoidance, Waste Reduction

In 2023, Siam Cullet Co., Ltd., a subsidiary of Osotspa responsible for waste management within the group, partnered with ATHIBHATTKIJFAIFAH Co., Ltd., the operator of a biogas electricity generating plant. Together, they repurposed deteriorated beverages as raw material for electricity production. This joint initiative successfully utilized 143,490 kilograms of beverages to generate electricity. Both companies plan to maintain this practice going forward.



### Restoration and Offset

In 2023, Osotspa planted a total of 2,510 trees: 1,649 were planted at Triangular Park next to Piya Phirom Park, 161 were planted on the median strip of the Yellow Line BTS Skytrain from Yaek Lam Sali Station to Kalantan Station, and 690 were planted at the Tree Bank.

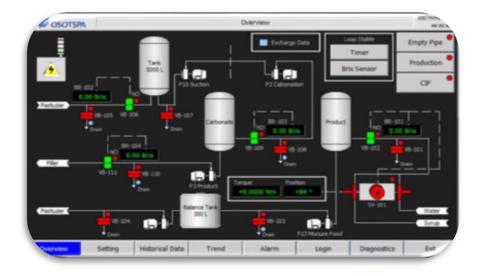


### 2023 activities



### Transform, Technology adaptation

In 2023, Osotspa installed solar rooftops at five Osotspa plants, generating a total capacity of 7,218,771 kWh. This resulted in renewable energy production of up to 25,988 GJ and a reduction of 3,609 tCO2e. These efforts help avoid GHG emissions, supporting better air quality and reducing pollution.



### Waste Reduction, Technology adaptation

In 2023, The manufacturing operation integrates automatic product quality measurement technology and an automated control system to replace manual labor. This results in a reduction of product loss and time spent on quality inspection processes at the start of production, Leading to a decrease in product loss of 287,014 kilograms per year.

