

Charoen Pokphand Group

Biodiversity (TNFD) Report 2023

T N
F D Taskforce on Nature-related
Financial Disclosures



For a Better
Tomorrow

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1. INTRODUCTION



Nature and biodiversity is important to all human being. They provide essential ecosystem services that sustain life on Earth, including clean air and water, fertile soil, and climate regulation. However, biodiversity loss and ecosystem collapse continues to be a concerning trend globally. This problem is likely to accelerate, posing severe consequences for ecosystems and human well-being. Loss of biodiversity can disrupt ecosystem functioning, reduce ecosystem resilience to environmental changes, and negatively impact food security, water quality, and human health.

Biodiversity loss can directly impact businesses by disrupting their supply chains, increasing regulatory compliance costs and eroding social license. As a holding company operating in diverse business sectors, Charoen Pokphand Group recognizes that our business activities heavily rely on natural resources and ecosystem services, for instance provision of materials, climate control, soil erosion control and etc.

Lack of knowledge, capability, and data to understand the relationship between business and nature can be underestimated risk to the organization. As a result, the Group has decided to adopt the Taskforce on Nature-related Financial Disclosure (TNFD) framework to gain a deeper understanding of our dependence, impact, risk and opportunity. This is to integrate the nature-related issues into the decision-making, strategic planning, and enterprise risk management process.

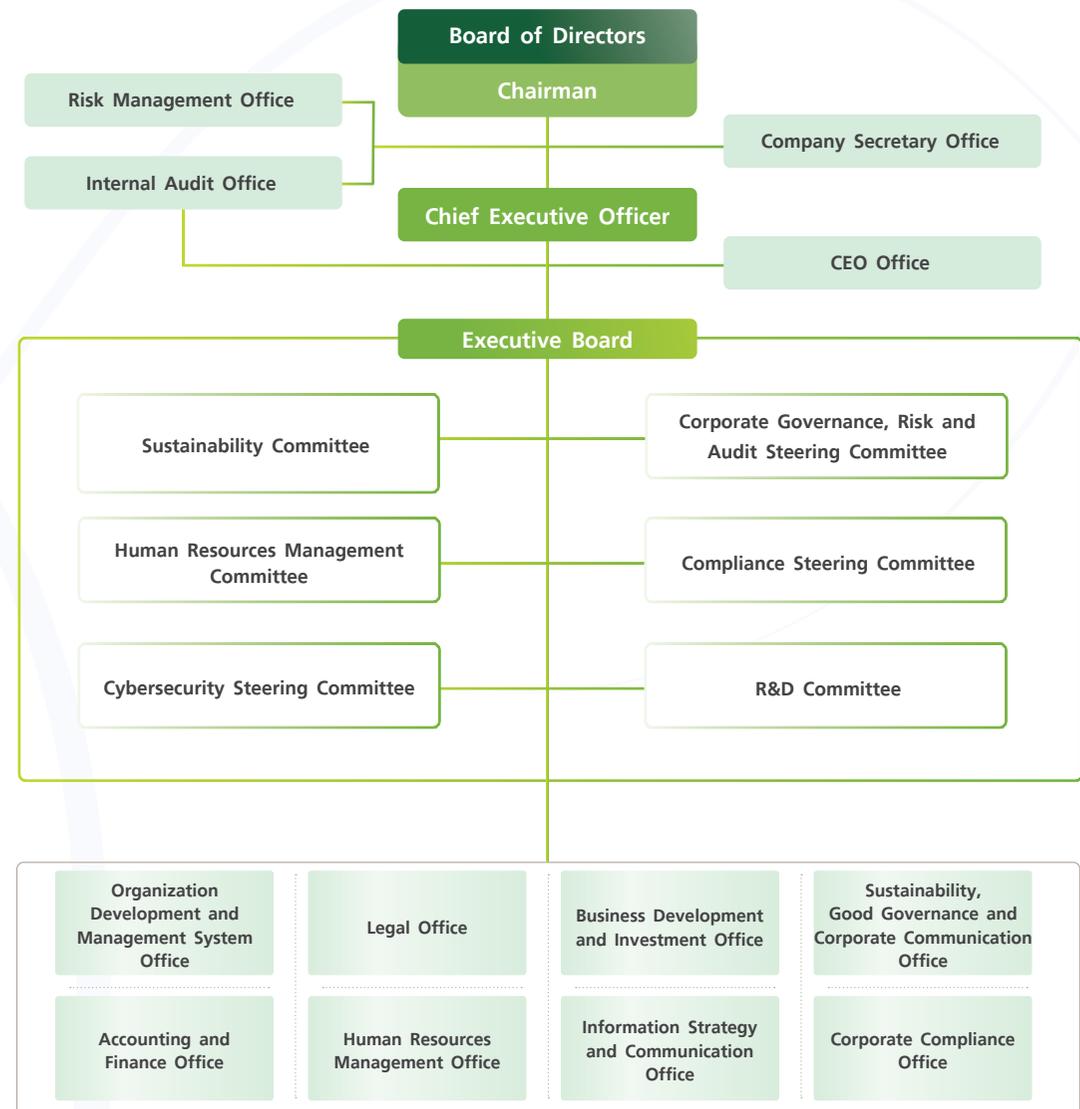
2. GOVERNANCE

2.1 Governance Structure

C.P. Group’s corporate governance structure consists of the Board of Directors (BOD), led by the Chairman, and the Executive Board, which is chaired by the Chief Executive Officer (CEO).

In addition, C.P Group has established a Sustainability Committee and Corporate Governance Risk and Audit Steering Committee. These two committees play a vital role in managing nature-related risks and opportunities and driving the implementation of nature climate strategies to all business units.

Under Executive Board, there are the working level which comprise of 8 functions including Sustainability, Good Governance, and Corporate Communication (SGC) Office and Corporate Compliance Office which are the main functions that implement the C.P. Group sustainability strategies and ensure that the nature and climate-related risks are managed appropriately under risk management framework model.



2.2 Role and Responsibility



The Board of Directors

The Board of Directors oversees the overall business operations to ensure adherence to C.P. Group 2030 Sustainability Framework and Goals. Sustainability performance against the Group's goals and targets (including climate and other nature-related topics) are periodically reported to the Board members as a part of monitoring process.



The Executive Board

The Executives are delegated by the BoD to oversee the C.P. Group's operations. The Management's role is to establish policies, targets, strategies, management approaches, and performance indicators for nature-related issues including climate, water, circularity, and biodiversity. The Management also provides the strategic advices and decision-making for Net Zero transition and nature-positive pathway.



Sustainability Committee

The Sustainability Committee, chaired by the Group's CEO, has responsibility to drive sustainability goals and strategies by determining key performance indicators, overseeing the sustainability governance, and monitoring the establishment of communication channels, and assessing key issues on sustainability. In addition, the Committee works closely with the Corporate Governance, Risk, and Audit Steering Committee to determine acceptable ESG risks including nature and climate and set up a risk management approach. The committee's meetings are arranged on the quarterly basis to discuss the progress of sustainability performance, and this is also a channel to report ESG risks (including nature-related risk and opportunity) and other ESG agenda.



Governance, Risk, and Audit Steering Committee

The Corporate Governance, Risk, and Audit Steering Committee comprises executives with expertise in risk management. The role is to oversee the enterprise risk management and monitor the implementation of the policies and regulation to ensure that the business are operated in accordance with corporate governance principles, as well as the effectiveness of the risk management, internal controls and audits.



Sustainability Good Governance and Corporate Communication Office

The main function to execute the sustainability strategy framework, which include the process of climate and nature-related risk assessment and management. The assessment outcomes are factored in the group-wide policy, strategy, and risk management framework which are leveraged across all business units.

2.3 Governance Framework

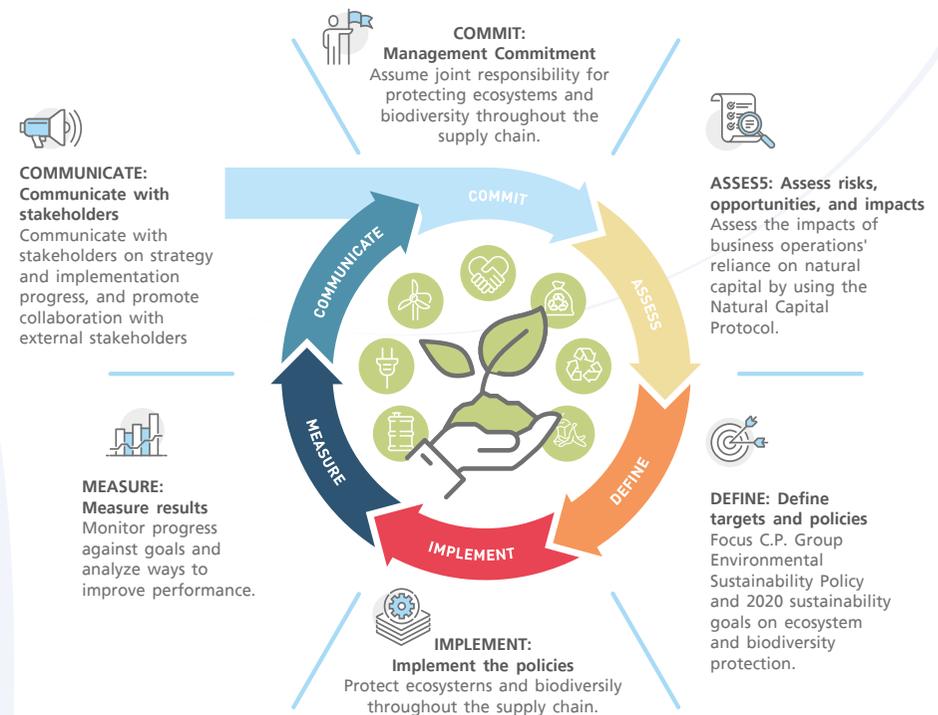
In a complex business environment characterized by rapid changes and uncertainties, Charoen Pokphand Group aims to drive corporate governance systematically across the Group. This approach integrates ecosystem and biodiversity protection into the company practices and supply chain management.

We have established comprehensive, group-wide policies and guidelines for protecting, preserving, and enhancing natural capital and ecosystem services. These policies and guidelines serve as a framework for all business units to implement across our entire value chain. Management has joint responsibility for protecting ecosystems and biodiversity throughout the supply chain.

The Group also assesses nature-related dependencies, impacts, risks, and opportunities according to the recommendations of the Task Force on Nature-related Financial Disclosures (TNFD) and the Task Force on Climate-related Financial Disclosures (TCFD). Additionally, we develop comprehensive risk management plans that address physical, technological, market, policy, legal, and reputational risks.

The climate targets, goals, and risks management are set and communicated to our employees and other stakeholders through various channels. The implementation of action plan depends on the dependency and impact of the business on the natural capital and ecosystem services. The nature-related performances are monitored and reported through various channels including Sustainability Report, corporate website, the Communication on Progress to the UN Global Compact, and CDP's disclosure

In addition, building capacity and raise awareness for nature actions, the appropriate trainings are provided to employees and stakeholders.



3. STRATEGY



Charoen Pokphand Group (CPG) has adopted the LEAP approach, a framework developed by the Taskforce on Nature-related Financial Disclosures (TNFD), to systematically assess and evaluate nature-related risks and opportunities. LEAP Approach comprises four main steps, which are

- **Locate:** analysis of business activities along the supply chain to identify activities that interface with to natural resources
- **Evaluate:** evaluation of dependency and impact on natural resources and ecological services.
- **Assess:** Identification of material risks and opportunities related to business operations
- **Prepare:** Mitigation measures and information disclosure

Considering Dependencies, Impacts, Risks, and Opportunities (DIRO) across all 8 business sectors, CPG acknowledges that its operations rely on natural resources as capital to produce goods and services, while also causing changes to these resources. The natural capital and ecosystem services the Group depends on vary according to business activities. Integrating the LEAP method allows CPG to perform thorough and structured analyses, ensuring that environmental factors are comprehensively considered in their financial and operational planning, thereby strengthening their corporate strategy.

3.1 Business Dependency on Nature

Overall success of CPG’s diverse business operations is intricately linked to the health and availability of these ecosystem services. In particular, the “Agro-Industry and Food” sector depends significantly on provisioning services e.g. water supply, fertile soil, and crop pollination. Additionally, regulating services like climate regulation, water purification, as well as supporting services like nutrient cycling and habitat provision, are critical to maintaining the productivity and sustainability of their agricultural activities. While other sectors, such as “E-commerce and Digital,” are less dependent on natural capital. Understanding and managing these dependencies is crucial for the group’s long-term resilience and sustainability.

Business Sectors	High	Medium	Low
1. CPG (Industrial Conglomerates)	<ul style="list-style-type: none"> Water Fiber and Materials Energy and Fuel Natural Hazards 	<ul style="list-style-type: none"> Air Quality Climate Water Run-off Water Purification Pest and Disease Control 	<ul style="list-style-type: none"> Food Medicine Erosion Control Pollination Water Cycling Soil formation Photo Synthesis
2. Agro-Industry and Food	<ul style="list-style-type: none"> Water Water Purification 	<ul style="list-style-type: none"> Fiber and Materials Energy and Fuel Air quality Climate Water Run-off Erosion Control Natural Hazards Pest and Disease Control 	<ul style="list-style-type: none"> Food Medicine Pollination Nutrient Cycling Water Cycling Soil Formation
3. Retail and Distribution Business	<ul style="list-style-type: none"> Energy and Fuel Natural Hazards 	<ul style="list-style-type: none"> Food Water Fiber & Materials Air quality Climate Water Run-off 	<ul style="list-style-type: none"> Erosion Water Purification Pest and Disease

3.1 Business Dependency on Nature

Business Sectors	High	Medium	Low
4. Telecommunication	<ul style="list-style-type: none"> ● Fiber & Materials ● Energy & Fuel ● Natural Hazards 	<ul style="list-style-type: none"> ● Climate ● Water Run-off ● Pest and Disease Control 	<ul style="list-style-type: none"> ● Water ● Air Quality ● Water Purification
5. Property Development	<ul style="list-style-type: none"> ● Water ● Fiber & Materials ● Energy & Fuel ● Air Quality ● Water Run-off ● Natural Hazards 	<ul style="list-style-type: none"> ● Climate ● Water Purification 	<ul style="list-style-type: none"> ● Erosion ● Pest and Disease
6. E-Commerce and Digital	<ul style="list-style-type: none"> ● Energy and Fuel 	<ul style="list-style-type: none"> ● Fiber and Materials ● Natural Hazards 	<ul style="list-style-type: none"> ● Water ● Air quality ● Climate ● Water Run-off ● Pest and Disease Control
7. Pharmaceutical	<ul style="list-style-type: none"> ● Water ● Fiber & Materials ● Energy & Fuel ● Medicine 	<ul style="list-style-type: none"> ● Air Quality ● Natural Hazards 	<ul style="list-style-type: none"> ● Climate ● Water Run-off ● Erosion ● Water Purification ● Photo Synthesis
8. Automotive and Industrial Products	<ul style="list-style-type: none"> ● Water ● Fiber & Materials ● Energy & Fuel 	<ul style="list-style-type: none"> ● Air Quality ● Water Run-off ● Natural Hazards ● Water Purification 	<ul style="list-style-type: none"> ● Climate
9. Finance and Investment	-	-	<ul style="list-style-type: none"> ● Water ● Energy & Fuel ● Water Run-off ● Erosion

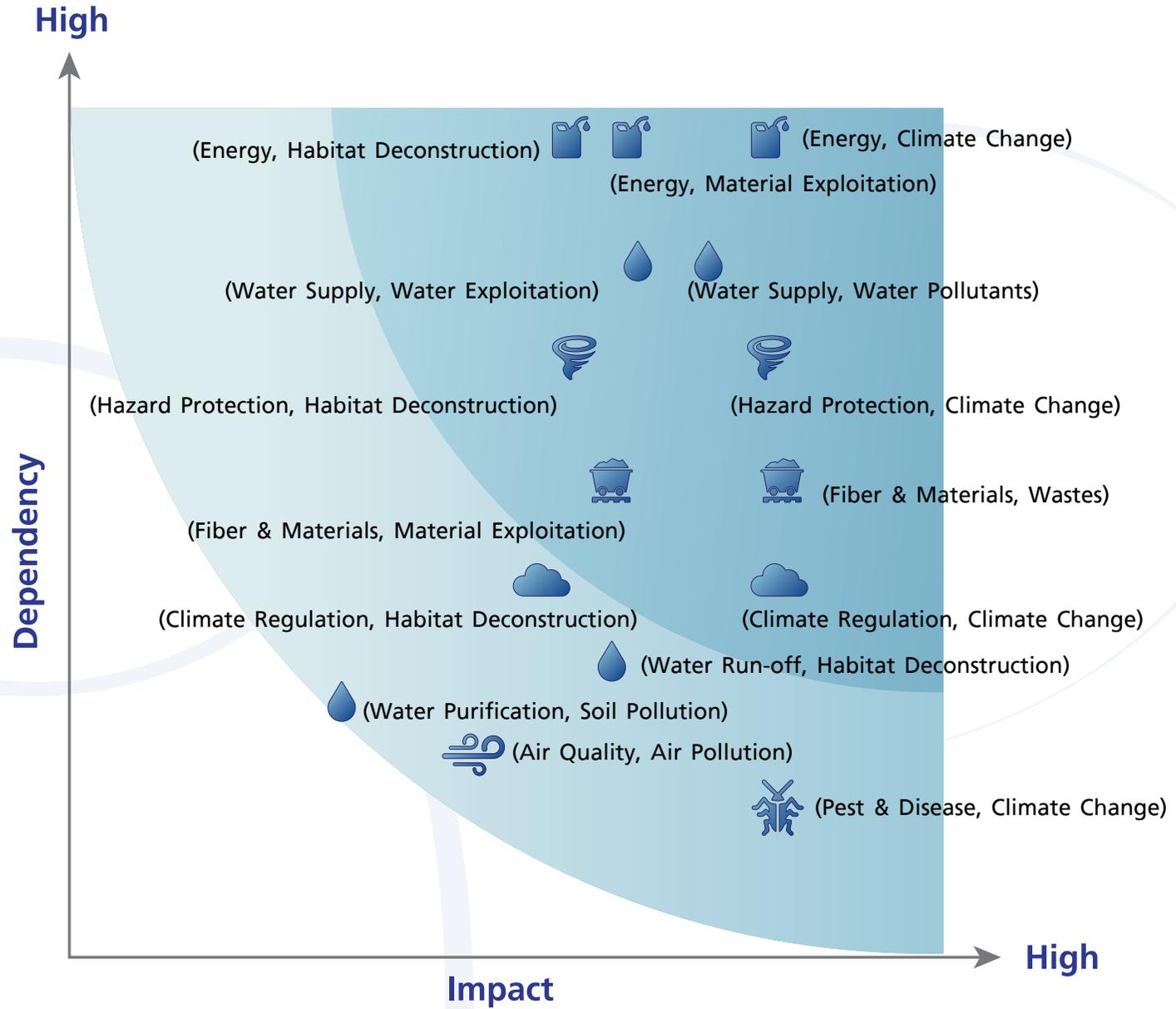
3.2 Business Impact on Nature

Considering business-related pressures on nature is one of the requirements of the Taskforce on Nature-related Financial Disclosure (TNFD). Charoen Pokphand Group has identified the following pressures from our business operations according to the Science-based Target for Nature (SBTN) guidelines

Business Sectors	High	Medium	Low
1. CPG (IDD)	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial ecosystem) Pollution (Water Pollutants, Wastes) Climate Change Resource Exploitation (Water, Other materials) 	<ul style="list-style-type: none"> Pollution (Air Pollutants, Soil Pollutants) 	<ul style="list-style-type: none"> Habitat Deconstruction (Freshwater and Marine Ecosystem) Invasive Species
2. Agro-Industry and Food	<ul style="list-style-type: none"> Pollution (Water Pollutants, Wastes) Climate Change 	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial Ecosystem) Pollution (Air Pollutants, Soil Pollutants) Resource Exploitation (Water Use, Other Materials) Invasive Species 	<ul style="list-style-type: none"> Habitat Deconstruction (Freshwater and Marine Ecosystem)
3. Retail and Distribution Business	<ul style="list-style-type: none"> Climate Change 	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial Ecosystem) Pollution (Air Pollutants, Waste) Resource Exploitation (Water Use, Other Materials) 	<ul style="list-style-type: none"> Habitat Deconstruction (Freshwater and Marine Ecosystem) Pollution (Soil Pollutants)
4. Telecommunication	-	<ul style="list-style-type: none"> Habitat deconstruction (Terrestrial ecosystem) Pollution (Waste) Climate Change Resource Exploitation (Other Materials) 	<ul style="list-style-type: none"> Habitat Deconstruction (Freshwater and Marine Ecosystem) Pollution (Soil Pollution)

3.2 Business Impact on Nature

Business Sectors	High	Medium	Low
5. Property Development	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial Ecosystem) Pollution (Waste) 	<ul style="list-style-type: none"> Pollution (Air Pollutants, Water Pollutants) Climate Change Resource Exploitation (Water Use, Other Materials) 	<ul style="list-style-type: none"> Habitat Deconstruction (Freshwater Ecosystem) Pollution (Water Pollution, Soil Pollution) Resource Exploitation (Water use)
6. E-Commerce and Digital	-	<ul style="list-style-type: none"> Climate Change 	<ul style="list-style-type: none"> Pollution (Air Pollutants, Waste) Resource Exploitation (Water Use, Other Materials)
7. Pharmaceutical	<ul style="list-style-type: none"> Pollution (Water Pollutants, Waste) Climate Change Resource Exploitation (Water Use, Other Materials) 	<ul style="list-style-type: none"> Pollution (Air Pollutants) 	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial Ecosystem) Pollution (Soil Pollutants)
8. Automotive and Industrial Products	<ul style="list-style-type: none"> Pollution (Air Pollutants, Water Pollutants, Waste) Climate Change Resource Exploitation (Water Use, Other Materials) 	<ul style="list-style-type: none"> Pollution (Air Pollutants, Water Pollutants) Climate Change Resource Exploitation (Water Use, Other Materials) 	<ul style="list-style-type: none"> Habitat Deconstruction (Terrestrial Ecosystem) Pollution (Soil Pollutants)
9. Finance and Investment	-	-	<ul style="list-style-type: none"> Pollution (Water Pollutants, Wastes) Resource Exploitation (Water Use)



After evaluating the Group's overall dependency and impact levels, we use the matrix to prioritize the critical nature-related topics. The topics with high dependency and impact are identified and plotted on the matrix above.

3.3 Nature-related Risks

Nature-related Risks		Time Horizon	Realms			
			Land	Freshwater	Ocean	Atmosphere
Transition Risks						
Policy and Legal	Adoption of Kunming-Montreal Global Biodiversity Framework Short	Short	●	●	●	●
	Enforcement of nature-related policies and regulations e.g. EUDR, CBAM etc.	Medium	●	●	●	●
Technological Innovation	Growth of digital agribusiness marketplaces Medium	Medium	●	●	●	●
	Emerging technology and innovation for natural conservation	Medium	●	●	●	●
Market Dynamics	Shifting of customer demands for no-deforestation products and eco-friendly product	Long	●			●
Reputation	Habitat deconstruction caused by the operation	Short	●	●	●	
Physical Risks						
Acute	Climate change creates new pest, animal diseases, and impact to crop productivity	Medium	●			●
	Water scarcity	Short		●	●	
Chronic	Loss of global pollinator due to agrochemical, climate change and other manmade activities	Long	●			●
	Soil degradation from business activities and climate change	Long	●			●
Systematic Risks						
Ecosystem Collapse	Permanently change in extent and condition of surface water from climate change or human made	Long		●		
Aggregated Risk	Air pollution from suppliers e.g. open burning, with other human activities could destroy the economy of entire region and reinforced by climate change	Medium	●			●

● Short-term (< 2 years)

● Medium-term (2-5 years)

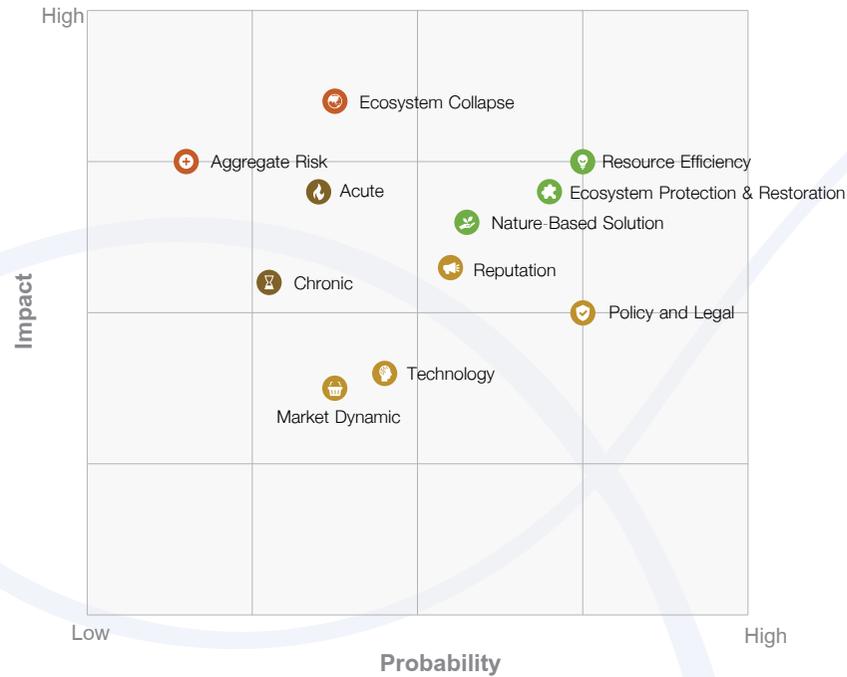
● Long-term (>5 years)

3.4 Nature-related Opportunity

Nature-related Risks		Time Horizon	Realms							
			Land	Freshwater	Ocean	Atmosphere				
Opportunity										
Resource Efficiency	<ul style="list-style-type: none"> Permanently change in extent and condition of surface water from climate change/ human made 	Short	●	●	●	●				
Sustainable Finance	<ul style="list-style-type: none"> Increasing volume of green finance, climate bond, sustainable loan in the market 	Short	●	●	●	●				
Nature Based Solution	<ul style="list-style-type: none"> Use Nature based solution to conserve, manage and restore natural and modified ecosystems in ways that address the ESG challenges 	Medium	●	●	●	●				
Ecosystem Protection and Restoration	<ul style="list-style-type: none"> Collaborate with the local community and stakeholders to drive the projects that protect, regenerate, and restore habitat and ecosystem 	Medium	●	●	●	●				

● Short-term (< 2 years)
 ● Medium-term (2-5 years)
 ● Long-term (>5 years)

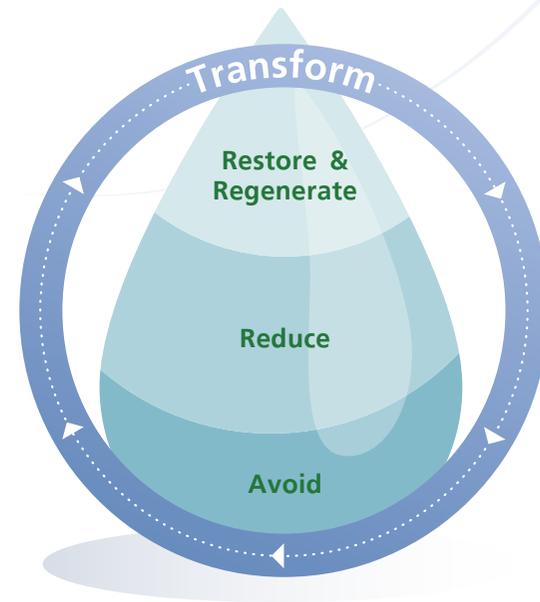
Risk



<p>Transition Risks</p> <ul style="list-style-type: none"> Policy and Legal Technology Market Dynamic Reputation 	<p>Physical Risks</p> <ul style="list-style-type: none"> Acute Chronic 	<p>Systematic Risks</p> <ul style="list-style-type: none"> Ecosystem Collapse Aggregate Risk 	<p>Opportunities</p> <ul style="list-style-type: none"> Resource Efficiency Nature Based Solution Ecosystem Protection and Restoration
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The identified risks as the outcome of the LEAP approach are further analyzed to understand the potential financial impacts on revenues, expenditures, values of assets and liabilities, and capital and financing. The strategies and measures both adaptation and preparedness are designated to mitigate the nature-related risks that are material to the group’s operation.

Charoen Pokphand Group and our subsidiaries have set a framework for managing risks and potential impacts on biodiversity from our operations. We observe the Mitigation Hierarchy based on the AR3T Framework developed by the Science-based Target for Nature (SBTN), which consists of “Avoid” negative impacts, “Reduce” impacts, “Restore & Regenerate”, and in the case that impacts are inevitable, “transform” them into positive impacts on nature, respectively.



3.5 Risk Management

Risk Type	Nature-related Risks	Financial Impact	Risk Management
Policy and Legal	<ul style="list-style-type: none"> Adoption of Kunming-Montreal Global Biodiversity Framework Emerging of Nature-related Policies and Regulations Major 	Major	<ul style="list-style-type: none"> Establish the policies, commitments, and internal procedures to address the regulatory requirements. Align the existing strategies and goals with the Kunming-Montreal Global Biodiversity Goal and 23 targets. Upgrade existing compliance system to include the nature-related topic. Build the capacity of the employees, compliance assessment, active leadership.
Technological Innovation	<ul style="list-style-type: none"> Digital agribusiness marketplaces Energy use and negative consequences 	Minor	<ul style="list-style-type: none"> Explore the use of new technologies e.g. blockchain, agricultural drones and satellite imagery to improve efficiency, reduce waste and bring transparency into supply chains for both agricultural and livestock products. Biotechnology is introduced to tackle GHG emission and climate adaptation including weather-resistant seeds, and eco-friendly animal feed. Shift from the energy and electricity consumption towards low emission energy and renewable resources. Develop new products which not only can be used for emission reduction in the direct operations, but also increase our revenues through access to new and emerging markets.
Market Dynamics	<ul style="list-style-type: none"> Shifting of customer demands for no-deforestation products and eco-friendly products 	Minor	<ul style="list-style-type: none"> Integrate nature-based solution into C.P. Group strategy for net-zero roadmap. Promote regenerative agriculture to reduce emissions from livestock, increase the soil quality, and restore the biodiversity in the agriculture land. Implement reforestation, afforestation, and agro-forestry projects for carbon sequestration and restoration of natural habitat.

3.5 Risk Management

Risk Type	Nature-related Risks	Financial Impact	Risk Management
Reputation	<ul style="list-style-type: none"> Any damage or effect on Key Biodiversity Area or important species caused by the operation 	Medium	<ul style="list-style-type: none"> Set the nature-related commitment and target including no-deforestation in the key raw materials including corn, soy, and palm oil. Implement traceability system to trace back to the sources of the key commodities.
Acute Risk	<ul style="list-style-type: none"> Climate change creates new pest threats, spread of animal diseases, and impact to crop productivity Habitat modification cause the GHG emission and biodiversity loss 	Medium	<ul style="list-style-type: none"> Explore nature-based solutions e.g. using biological control agents to control caterpillar pests in a wide range of horticultural and crop fields. Use technology and innovation to monitor climate-sensitive disease outbreaks. Integrate the climate-sensitive pest resistance plant into the product development. Utilize spatial data and tools including IBAT, global forest watch to avoid any impact from land conversion on natural habitat.
Chronic Risk	<ul style="list-style-type: none"> Loss of global pollinator due to agrochemical, climate change and other manmade activities Loss of organic matters and soil contamination 	Major	<ul style="list-style-type: none"> Take environmental issues into consideration in the process of innovating new food products to reduce environmental impacts while promoting the responsible use of resources. Implement the traceability system for key raw materials to ensure that these products are from sustainable sourcing. Implement the regenerative agriculture to maintain the soil health, nutrition, biodiversity, and carbon storage.

3.5 Risk Management

Risk Type	Nature-related Risks	Financial Impact	Risk Management
Ecosystem Collapse	<ul style="list-style-type: none"> Permanently change in extent and condition of surface water from climate change or human made 	Major	<ul style="list-style-type: none"> Implement the water management efficiency based on the 5Rs principle. Treat effluent to meet the local and national standard before discharge into nature to prevent impact on the environment and surrounding communities. Enhance sustainable water management throughout the value chain and implement measures to support and enhance water use efficiency for suppliers. Collaborate with partners from all sectors to drive water resources conservation and support local communities in improving access to clean water and sanitation.
Aggregated Risk	<ul style="list-style-type: none"> Air pollution from suppliers e.g. open burning, with other human activities could destroy the economy of entire region and reinforced by climate change 	Major	<ul style="list-style-type: none"> Support sustainable agriculture practice in the supply chain. Explore new technology to manage agricultural wastes. Find alternative sources for key raw materials. Implement the full traceability system.

3.6 Strategy



Our business thrives on a healthy planet. We recognize that our success relies on the health and diversity of natural ecosystems. These ecosystems provide essential services for our products and operations.

To ensure a thriving future, C.P. Group has implemented the Nature Positive Strategy. This strategy uses the DIRO framework (Dependency, Impact, Risk, and Opportunity) to evaluate our eight business lines. We leverage the LEAP approach to identify, assess, and manage nature-related risks and opportunities. These risks and opportunities are classified based on their short-, medium-, and long-term financial impacts.

The Nature Positive Strategy aligns with the Kunming-Montreal Global Biodiversity Framework. It aims to not only halt biodiversity loss but also restore degraded ecosystems. This strategy is our roadmap for managing nature-related risks throughout our operations and supply chain. It also empowers us to transform these risks into business opportunities.

4. RISK AND IMPACT MANAGEMENT

4.1 Interface with Nature

Our business footprint, especially near wilderness and biodiversity hotspots, carries potential nature and biodiversity risks. To address this, we've mapped our global sites against ecosystem types, biomes, and biodiversity importance. We used recommended TNFD tools like IBAT, Global Forest Watch, ENCORE, and Aqueduct. This analysis, valuable for our diversified businesses, helps us understand how our operations interact with surrounding natural resources. By assessing the current state and potential future changes in these ecosystems, we can identify nature-related risks as a first step towards mitigation.



IBAT

Web-based tool to screen the operating locations with the biodiversity important areas

ENCORE

Web-based tool which identify business's dependency and impact on nature

BESTCAT

Web-based tool which provides the ability to compare & contrast global assets based on value and condition of ecosystems and associated biodiversity



AQUEDUCT

The Aqueduct tools enable users to measure, map, and mitigate water risks around the world with its open-source, and high-resolution platform

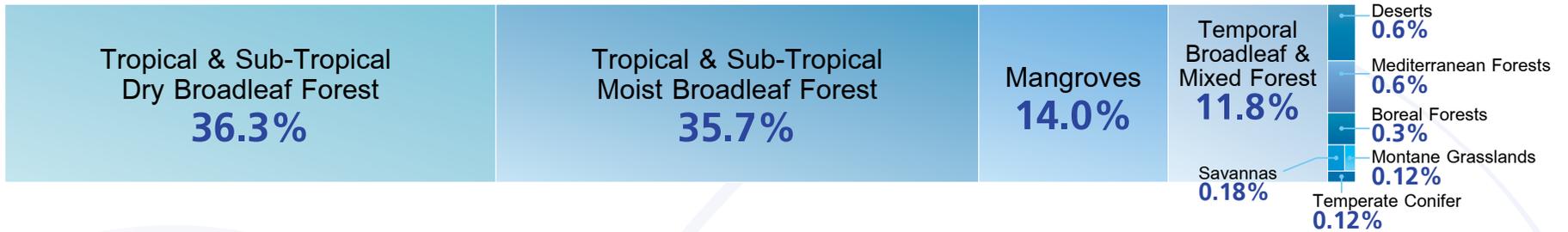
GLOBAL FOREST WATCH

GFW is an online platform with the best available data about forests. Ecosystem Integrity

WWF BIODIVERSITY RISK FILTER

Screening tool to prioritise action on what and where it matters the most to address water risks

Biomes



Ecosystem Integrity

Ecosystem integrity refers to the completeness and functionality of ecosystems, which are essential for supplying goods and providing ecosystem services. To evaluate the integrity of an ecosystem at a specific site, we utilize the “Global Forest Watch” tool, developed by the World Resources Institute and we use two primary indicators:

Forest Landscape Integrity Index

This indicator measures the degree to which forest landscapes remain undisturbed by human activities.

Biodiversity Intactness Index

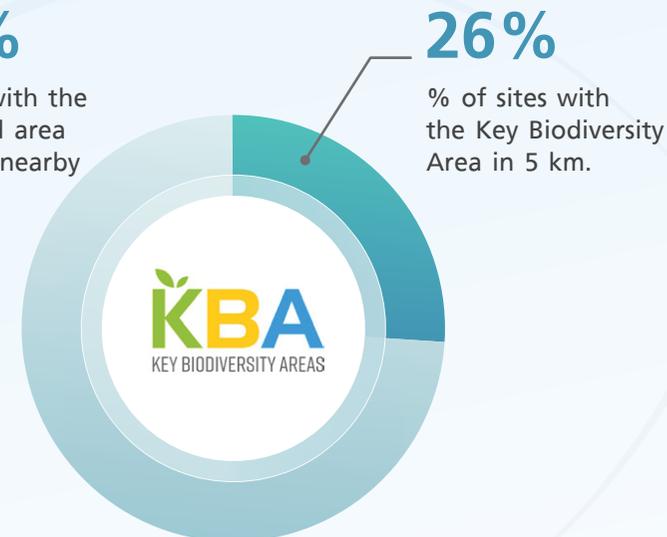
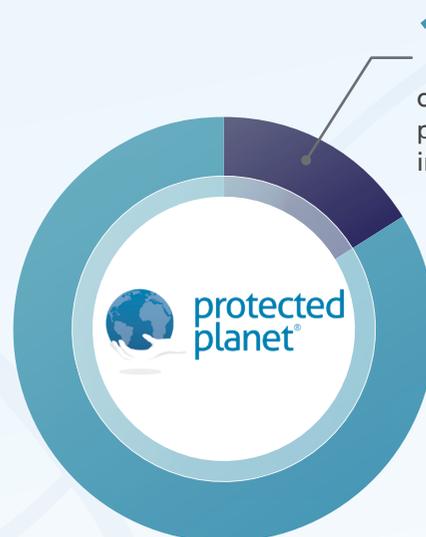
This indicator assesses the state of biodiversity within the ecosystem. It evaluates the presence and abundance of native species, considering how human activities have impacted them.

Indicator	Low	Medium	High
Forest landscape integrity index	99.52%	-	0.48%
Biodiversity Intactness Index	61.36%	12.56%	26.09%

Biodiversity Importance

CP. Group has undergone the rapid screening of biodiversity-related risk. The operating sites from major business units have been assessed using IBAT program that integrated 3 database including

- Protected Areas (PAs);
- Key Biodiversity Area (KBAs); and
- IUCN Red List species



The IUCN Red List of Threatened Species had found within 50 kilometers from the Sites.



47.19%

Critical Endangered



12.98%

Endangered



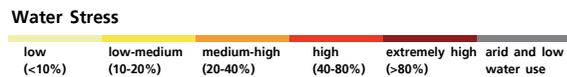
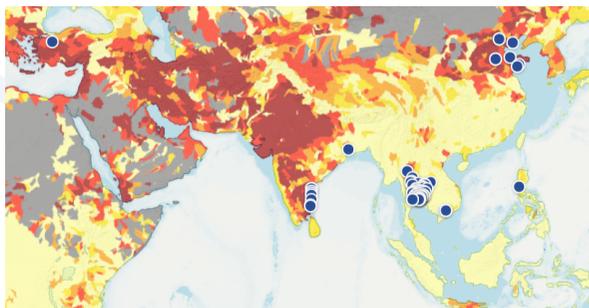
7.54%

Valuable

Water Stress

C.P. Group has adopted the internationally-recognized Aqueduct Water Risk Atlas tool of the World Resources Institute (WRI) as our preferred assessment tool to determine which operations are located in areas with water stress, where water-related impacts might be significant.

Based on the tool, water stress is defined as the ratio of total annual water withdrawal to total available annual renewable water supply (baseline water stress) is high (40-80%) or extremely high (>80%). The result reveals that 36% of all operation units under C.P. Group are in areas with water stress.



C.P. Group has also developed a water risk assessment framework that is applied across all operations in its business units. The assessment evaluates risk factors in various dimensions, including the volume of water withdrawal by organization, and baseline water stress level from Aqueduct Water Risk Atlas tool.

The results of the assessment are ranked according to three levels of water risk and are then used to develop appropriate management plans.

Water Risk Assessment Framework

Water Stress	The Volume of Water Withdrawal	Water Risk Level
 Low - Medium	Low - Medium Volume	Low Risk
	High Volume	Medium Risk
 High - Extremely High	Low Volume	Low Risk
	Medium Volume	Medium Risk
	High Volume	High Risk

Water Management Plan

Low Risk

- Regularly monitor water withdrawals through reporting systems

Medium Risk

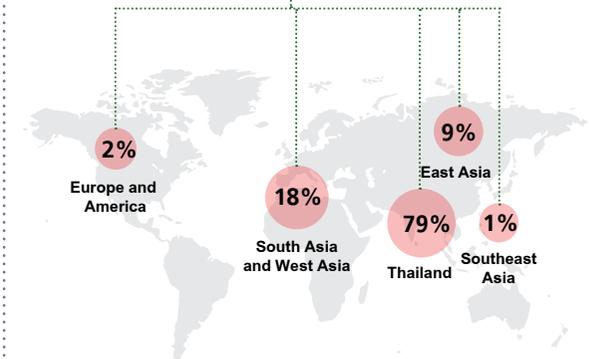
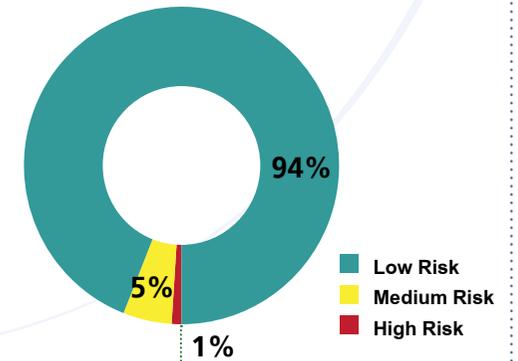
- Improve water use efficiency using the “5Rs” principle
- Regularly monitor water withdrawals through reporting systems

High Risk

- Improve water use efficiency using the “5Rs” principle
- Regularly monitor water withdrawals through reporting systems
- Assess local-level risks using the “Local Water Tool”
- Assess water risks for key suppliers

Based on the water risk assessment, only 1% of the C.P. Group’s operations with high level of water risk, 79% of which is located in Thailand. Accordingly, C.P. Group focuses on encouraging our Thailand-based business groups to develop intensive water-related measures and monitor water use reduction on a regular basis.

C.P. Group’s Operation Units with High Water Risk Level By Region



4.2 Identification of Nature-related Dependency

Ecosystem Service	Provision Services					Regulating Services								Supporting Services			
	Food	Water	Fiber & Materials	Energy & Fuel	Medicine	Air quality	Climate	Water Run-off	Erosion	Natural Hazards	Water Purification	Pest and Disease	Pollination	Nutrient Cycling	Water Cycling	Soil Formation	Photo Synthesis
Agro-Industry and Food Business																	
Seed	2	2	1	1	-	2	3	3	2	3	3	3	3	3	1	3	3
Fertilizer	-	2	3	2	-	1	1	1	1	1	2	1	-	-	-	-	-
Plant Protection Product	-	3	-	3	-	1	1	1	1	1	1	-	-	-	-	-	-
Crop Plantation	2	3	1	1	-	2	3	3	2	3	2	3	3	3	2	3	3
Animal Feed	1	2	3	2	-	1	2	1	1	1	3	2	-	-	-	-	-
Livestock Farming	1	3	3	2	1	2	3	2	2	2	3	2	-	-	2	-	-
Aquaculture	-	3	1	1	-	-	-	-	-	-	3	3	-	-	-	-	2
Overall	6	18	12	12	1	9	13	11	9	11	17	14	6	6	5	6	8
Retail and Distribution Business																	
Raw Material Sourcing	3	3	3	2	-	-	1	1	-	2	-	2	-	-	-	-	-
Transportation	-	-	-	3	-	2	2	2	1	2	-	-	-	-	-	-	-
Store operation	-	2	-	3	-	1	2	2	-	2	2	-	-	-	-	-	-
Overall	3	5	3	8	-	3	5	5	1	6	2	2	-	-	-	-	-



4.2 Identification of Nature-related Dependency

Ecosystem Service	Provision Services					Regulating Services								Supporting Services			
	Food	Water	Fiber & Materials	Energy & Fuel	Medicine	Air quality	Climate	Water Run-off	Erosion	Natural Hazards	Water Purification	Pest and Disease	Pollination	Nutrient Cycling	Water Cycling	Soil Formation	Photo Synthesis
Telecommunication Business Group																	
Supply of Materials	-	1	3	2	-	-	1	1	-	2	-	1	-	-	-	-	-
Operation	-	1	1	3	-	-	2	3	1	3	1	2	-	-	-	-	-
Overall	-	2	4	5	-	-	3	3	1	5	1	3	-	-	-	-	-
Property Development Business Group																	
Construction	-	3	3	3	-	3	2	3	1	3	2	1	-	-	-	-	-
Operation	-	1	3	3	-	3	2	3	1	3	2	1	-	-	-	-	-
Overall	-	6	6	6	-	6	4	6	2	6	4	2	-	-	-	-	-
E-Commerce and Digital Business Group																	
Fintech and Data Center	-	1	2	2	-	-	1	1	-	2	-	1	-	-	-	-	-
Overall	-	1	2	2	-	-	1	1	-	2	-	1	-	-	-	-	-

● Low
 ● Medium
 ● High
 Score = 1
 Score = 2
 Score = 3

4.2 Identification of Nature-related Dependency

Ecosystem Service	Provision Services					Regulating Services							Supporting Services				
	Food	Water	Fiber & Materials	Energy & Fuel	Medicine	Air quality	Climate	Water Run-off	Erosion	Natural Hazards	Water Purification	Pest and Disease	Pollination	Nutrient Cycling	Water Cycling	Soil Formation	Photo Synthesis
Pharmaceutical Business Group (Joint Venture)																	
Pharmaceutical Manufacturing	-	3	3	3	3	2	1	1	1	2	1	-	-	-	-	-	1
Overall	-	3	3	3	3	2	1	1	1	2	1	-	-	-	-	-	1
Automotive and Industrial Products Business Group (Joint Venture)																	
Automotive Manufacturing	-	2	3	3	-	2	1	2	-	2	2	-	-	-	-	-	-
Packaging Manufacturing	-	2	3	3	-	2	1	2	-	2	2	-	-	-	-	-	-
Overall	-	4	6	6	-	4	2	4	-	4	4	-	-	-	-	-	-
Finance and Investment Business Group (Joint Venture)																	
Financing Services	-	1	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-
Overall	-	1	-	1	-	-	-	1	1	-	-	-	-	-	-	-	-
Corporate Level (CPG)	9	38	35	43	4	24	29	32	15	36	29	19	6	6	4	6	9

● Low
 ● Medium
 ● High
 Score = 1
 Score = 2
 Score = 3

4.3 Identification of Nature-related Impact

Impact Drivers	Habitat Destruction			Pollution				Climate Change	Resource Exploitation		Invasive Species
	Terrestrial Ecosystem	Freshwater Ecosystem	Marine Ecosystem	Water Pollution	Air Pollutants	Soil Pollutants	Wastes		Water Use	Other Materials	
Agro-Industry and Food Business Group											
Seed	3	1	-	1	-	2	1	2	1	-	3
Fertilizer	1	-	-	3	1	1	3	2	2	3	-
Plant Protection Product	2	1	-	3	2	2	3	1	1	2	1
Crop Plantation	3	-	-	2	1	2	2	2	2	1	2
Animal Feed	1	-	-	3	2	1	3	3	2	1	-
Livestock Farming	3	-	-	3	1	1	3	3	2	1	2
Aquaculture Farming	-	2	2	3	-	-	2	1	1	1	3
Food Processing	1	-	-	3	1	-	3	3	2	1	-
Overall	14	4	2	21	8	9	20	17	13	10	11
Retail and Distribution Business Group											
Raw Material Sourcing	3	1	1	1	1	1	1	2	2	3	1
Transportation	-	-	-	1	3	-	-	3	1	1	-
Store operation	2	-	-	2	1	-	3	3	2	2	-
Sector Overall	5	1	1	4	5	1	4	8	5	6	1

● Low
 ● Medium
 ● High
 Score = 1
 Score = 2
 Score = 3

4.3 Identification of Nature-related Impact

Impact Drivers	Habitat Destruction			Pollution				Climate Change	Resource Exploitation		Invasive Species
	Terrestrial Ecosystem	Freshwater Ecosystem	Marine Ecosystem	Water Pollution	Air Pollutants	Soil Pollutants	Wastes		Water Use	Other Materials	
Telecommunication Business Group											
Supply of Materials	3	-	-	1	-	-	2	2	1	3	-
Operation	1	1	-	1	-	1	2	3	1	2	-
Overall	4	1	-	2	-	1	4	5	2	5	-
Property Development Business Group											
Construction	3	2	2	3	2	1	3	1	3	3	-
Operation	3	-	-	2	1	1	2	1	2	1	-
Overall	6	2	2	5	3	2	5	2	5	4	-
E-Commerce and Digital Business Group											
Fintech and Data Center	-	-	-	1	-	-	1	2	1	1	-
Overall	-	-	-	1	-	-	1	2	1	1	-

● Low
 ● Medium
 ● High
 Score = 1
 Score = 2
 Score = 3

4.3 Identification of Nature-related Impact

Impact Drivers	Habitat Destruction			Pollution				Climate Change	Resource Exploitation		Invasive Species
	Terrestrial Ecosystem	Freshwater Ecosystem	Marine Ecosystem	Water Pollution	Air Pollutants	Soil Pollutants	Wastes		Water Use	Other Materials	
Pharmaceutical Business Group (Joint Venture)											
Manufacturing	1	-	-	3	2	1	3	3	3	3	-
Overall	1	-	-	3	2	1	3	3	3	3	-
Automotive and Industrial Products Business Group (Joint Venture)											
Automotive Manufacturing	1	-	-	3	3	1	3	3	3	3	-
Packaging Manufacturing	1	-	-	3	3	1	3	3	3	3	-
Overall	2	-	-	6	6	2	6	6	6	6	-
Finance and Investment Business Group (Joint Venture)											
Financing Services	-	-	-	1	-	-	1	-	1	-	-
Overall	-	-	-	1	-	-	1	-	1	-	-
Corporate Level	32	8	5	42	24	16	43	41	35	34	11

● Low
 ● Medium
 ● High
 Score = 1
 Score = 2
 Score = 3

5. METRICS AND TARGETS

No Net Loss



100% of key raw materials are sourced from deforestation-free areas within 2030



20% reduction in water withdrawal per unit revenue compared to baseline year 2020



Zero food waste and waste to landfill and all plastic packaging are recyclable, reusable or compostable

Net Positive



100% business having participating in biodiversity programs with relevant international partners within 2023



Planting 20 million trees by 2025

6. DEFINITION

Biodiversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems
Dependencies	Aspects of ecosystem services that an organization or other actor relies on to function. Dependencies include ecosystems' ability to regulate water flow, water quality, and hazards like fires and floods; provide a suitable habitat for pollinators (who in turn provide a service directly to economies), and sequester carbon (in terrestrial, freshwater and marine realms).
Ecosystem Assets	A form of environmental assets that relate to diverse ecosystems, where an ecosystem is a dynamic complex of plant, animal and microorganism communities and the non-living environment that interacts as a functional unit
Environmental Assets	The naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity.
Ecosystem Services	<p>Ecosystem services provide benefits to business. The categories of ecosystem services are provided below:</p> <ul style="list-style-type: none"> ● Provisioning services represent the contributions to benefits that are extracted or harvested from ecosystems. ● Regulating and maintenance services result from the ability of ecosystems to regulate biological processes and to influence climate, hydrological and biochemical cycles, and thereby maintain environmental conditions beneficial to individuals and society. Provisioning services are dependent on these regulating and maintenance services. ● Cultural services are the experiential and intangible services related to the perceived or actual qualities of ecosystems whose existence and functioning contributes to a range of cultural benefits.

Impact	A change in the state (quality or quantity) of natural capital, which may result in changes to the capacity of nature to provide social and economic functions. Impacts can be positive or negative. A single impact driver may be associated with multiple impacts.
Impact Drivers	A measurable quantity of a natural resource that is used as a natural input to production or a measurable non-product output of a business activity
Impact Pathways	A particular impact driver can lead to changes in natural capital, and in turn, how these changes affect different stakeholders.
Nature	The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment.
Natural Capital	The stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
Nature Loss	The loss of, and/or decline in, the state of nature.
Nature-Related Opportunities	Activities that create positive outcomes for corporates and/or financial institutions and nature by avoiding or reducing impact on nature, or contributing to its restoration
Nature-related risks	Potential threats posed to an organisation linked to their and wider society's dependencies on nature and nature impacts. These can derive from physical, transition and systemic risks.
Timeframe	<p>The definition of the timeframe in this report are provided as follows:</p> <ul style="list-style-type: none"> ● Short-term – less than 2 years ● Medium-term – 2-5 years ● Long-term – more than 5 years.



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