



MITR PHOL  
GROUP

# BIODIVERSITY RISK ASSESSMENT REPORT 2024

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# Mitr Phol Business in Overview

Mitr Phol Group delivers quality product with the world class sustainability standard. We realizes the importance of environment existsence and apply digital innovation and technology to stimulate business by adding value to sugarcane to have the product of the world standard. Furthermore, the concept "From Waste to Value" can be added to the business and brought forward to various development i.e., sugar product into biomass power-ethanol, wood substitute, fertilizers and bio-business.

Mitr Phol Group's business is divided into 7 categories: Sugar, Energy, Wood Substitute, Fertilizer, Transportation and Warehouses and other business.

## The world's Fourth largest and Thailand's largest Sugar Producer



- Thailand**
- 8 Sugar Mills
  - 12 Power Plants
  - 4 Ethanol Plants
  - 3 Fertilizer Plants
  - 1 Tapioca Starch Plant
  - 1 Yeast & Yeast Specialty Plant
  - 2 Particle Board Plants
  - Logistics & Warehouse service provider



- Third Largest Sugar Producer in China**
- 5 Sugar Mills
  - 1 Refinery
  - 3 Power Plants
  - 1 Fertilizer Plant
  - 1 Animal Feed Plant



- Third Largest Sugar Producer in Indonesia**
- 2 Sugar Mill
  - 2 Refinery



- Largest Sugar Producer in Laos**
- 1 Sugar Mill
  - 1 Fertilizer Plant



- Third Largest Sugar Producer in Australia**
- 3 Sugar Mills
  - 1 Power Plant





PLANTATION BUSINESS



SUGAR BUSINESS



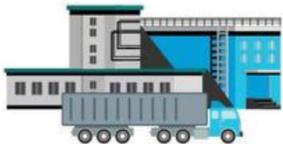
RENEWABLE ENERGY BUSINESS



WOOD SUBSTITUTE MATERIALS BUSINESS



FERTILIZER BUSINESS



LOGISTICS & WAREHOUSE BUSINESS



OTHER BUSINESS



**Biodiversity &  
No deforestation  
commitment**

# BIODIVERSITY & NO DEFORESTATION COMMITMENT

Mitr Phol Group, with respect to biodiversity, committed to preserving biodiversity and addressing deforestation throughout the value chain.

## Our commitment toward biodiversity and No Deforestation

- We are committed to preserving biodiversity in all operations and the value chain. Biodiversity conservation is one of the Mitr Phol sustainability frameworks that we approach.
- Determine to conduct business without impact on net forestation area (NO Net Deforestation) with an aim to compensate forest loss from current or future business operations.
- Strive to prevent any net loss of biodiversity (No Net Loss: NNL) and promote new project implementation to have Net Positive Impact (NPI) if feasible.
- The Biodiversity Risk Impacts assessment has been conducted and its results have been considered in prevention and mitigation measures in order to lessen environmental impacts and loss of biodiversity as per the Biodiversity Management Statement.
- Integrate the biodiversity assessment and management by imposing Mitr Phol Group's Security, Safety, Occupational Health, and Environment policy.



15 LIFE ON LAND



The Company has systematically implemented proactive management strategies, committed to achieving no net loss (NNL) of biodiversity, and promoted new projects to deliver a net positive impact (NPI) on biodiversity



# Biodiversity Risk Assessment

Methodology – Process - Results

# BIODIVERSITY RISK ASSESSMENT METHODOLOGY



Mitr Phol Group conduct biodiversity risk assessment using the WWF biodiversity risk filter (WWF BRF). The WWF BRF methodology consists of four modules and four steps of assessing process. The assessment is directed throughout 2 major biodiversity-related business risk types: Physical and Reputational risk.

## WRF-Module

 <b>INFORM MODULE</b>	To inform about impacts and dependencies of different economy sectors on biodiversity
 <b>EXPLORE MODULE</b>	To explore global maps of a biodiversity data, such as timber availability, marine fish availability, pollination services, ect
 <b>ASSESS MODULE</b>	ASSESS the biodiversity risks at the different locations of production
 <b>RESPOND MODULE</b>	The Respond Module, is currently under development.

## Risk Level and Scoring

Indicator	Very Low	Low	Medium	High	Very High
Scoring	1.0-1.8	1.8-2.6	2.6-3.4	3.4-4.2	4.2-5.0

## Biodiversity Risk Type

<b>Physical Risk</b> 	<b>company's operations and value chain</b> <ul style="list-style-type: none"> <li>located in land that decline in ecosystem services</li> <li>heavily dependent upon ecosystem services or increase pressures on biodiversity with their activities</li> </ul>
<b>Reputational Risk</b> 	A company may face reputational risk if <ul style="list-style-type: none"> <li>stakeholders and local communities perceive that it does not conduct business in a sustainable, responsible and respect to biodiversity.</li> <li>its operational performance and certain preconditions in the land that can make reputational risk more likely to manifest (e.g., media scrutiny, conflict, protected areas).</li> </ul>

## Tool and Source of Data

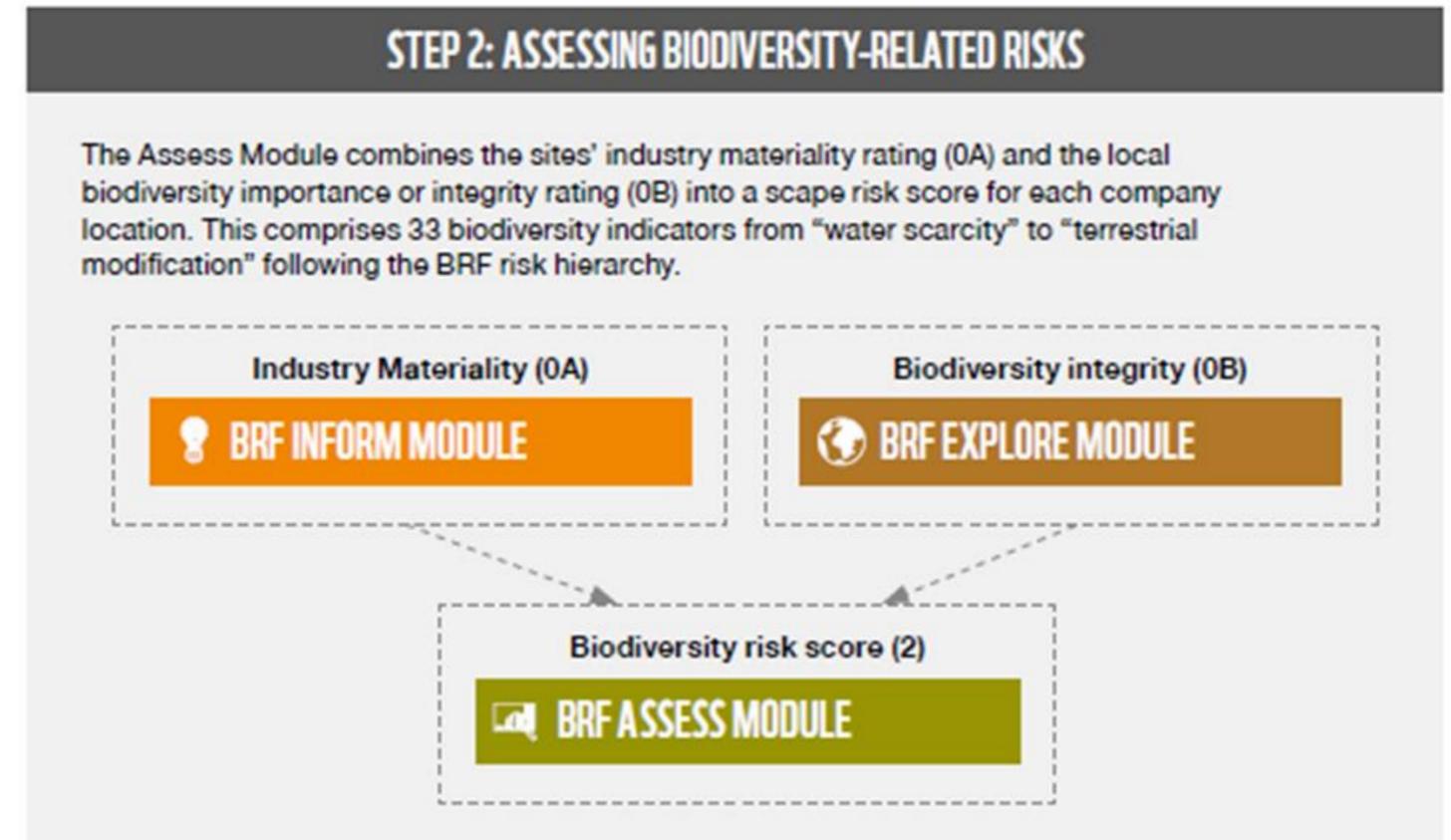
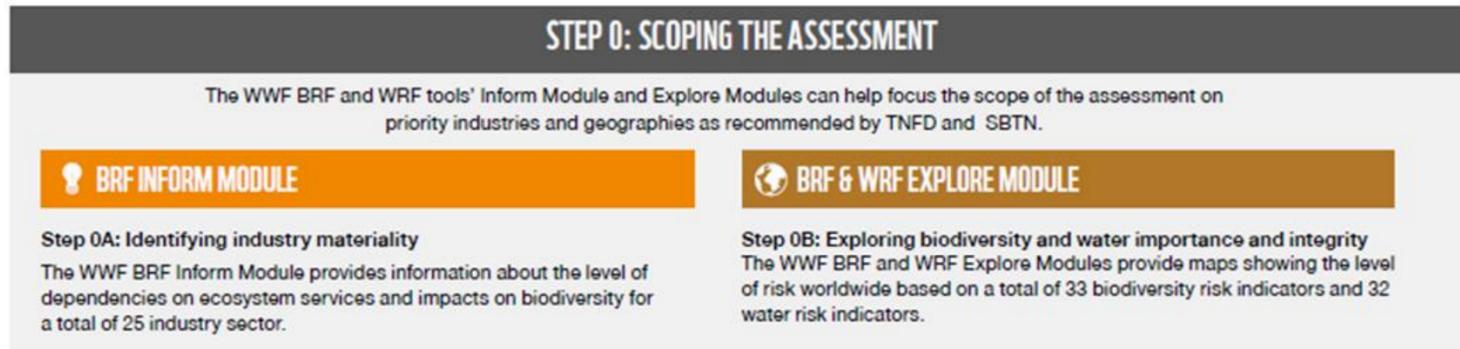
Tool - Assessment		Explore Module		Assess Module
		GUIDANCE A: COMPANY DATA	GUIDANCE B: SUPPLY CHAIN DATA	IUCN * : Guidelines for Applying Protected Area Management Categories

# BIODIVERSITY RISK ASSESSMENT METHODOLOGY



## Methodology : Step of Assessment

Currently, the WWF Biodiversity Risk Filter tool can apply for assesses two types of biodiversity-related business risk: Physical and Reputational. The implementation steps to run the WWF BRF or WRF Assess Modules are consist of scoping the assessment, assessing biodiversity-related risks, collecting location - specific company and supply chain data, and aggregating biodiversity risk to the company and portfolio level and the details show as the figure below.





# Process and results

# Biodiversity risk assessment process

The Scope of biodiversity risk assessment of Mitr Phol Group includes our own operations sites upstream and downstream activities in Thailand. To assess and prioritize biodiversity risks at the corporate and portfolio levels, we apply the WWF biodiversity risk filter (WWF BRF).

01

## SCOPING THE ASSESSMENT

- Identifying industry materiality-level of dependencies on ecosystem services and impacts on biodiversity
- Identifying the site to assess through the company value chain

02

## COLLECTING LOCATION-SPECIFIC COMPANY AND SUPPLY CHAIN DATA

- Collecting the data to assess the WWF BRF which includes
  - Geographic location of sites
  - Industry classification of sites
  - Business importance of sites

03

## ASSESSING BIODIVERSITY-RELATED RISKS

- Scope risk score for each company location.
- Interpret the risk assessment results

04

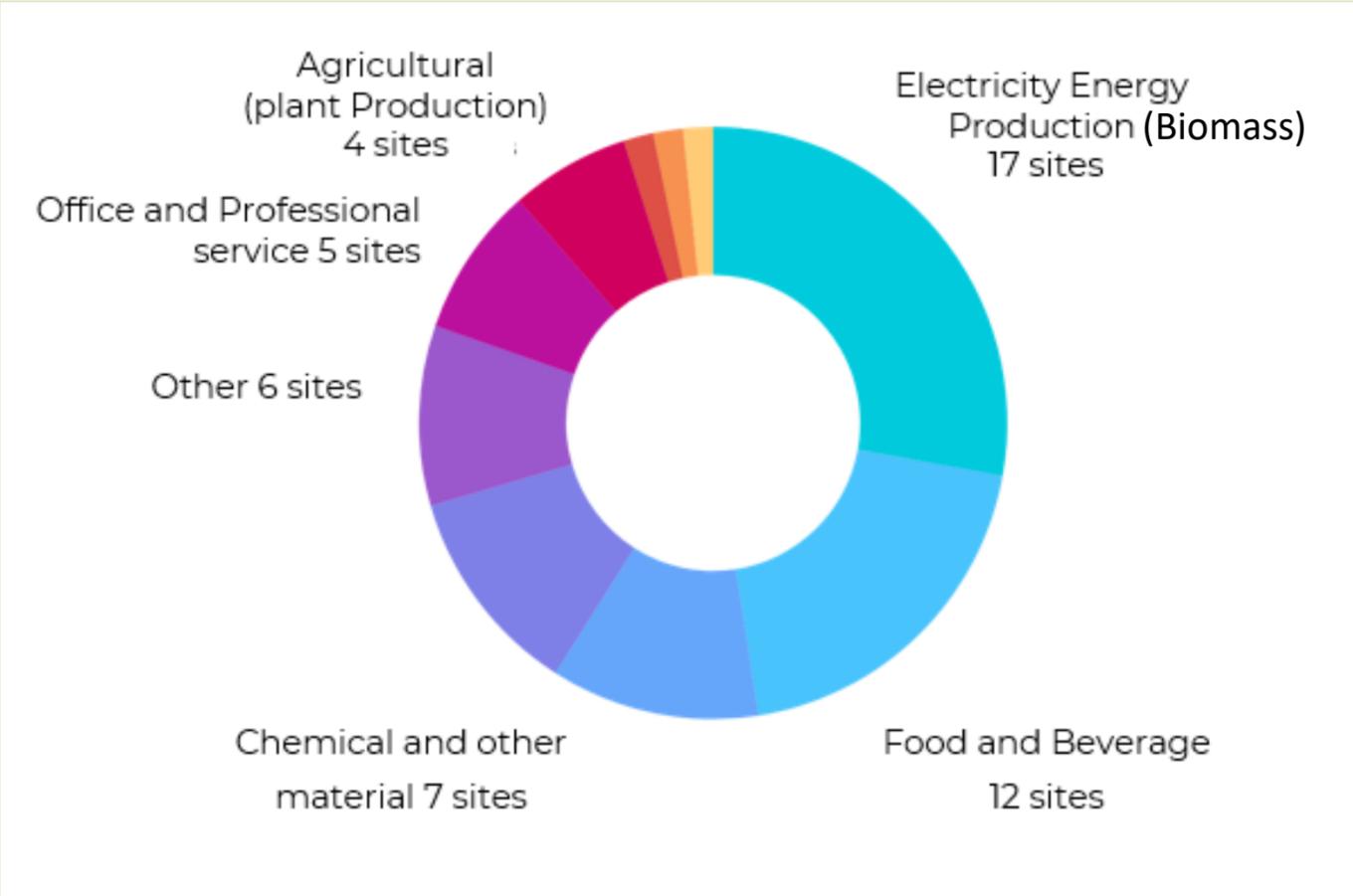
## AGGREGATING BIODIVERSITY RISK TO THE COMPANY AND PORTFOLIO LEVEL

- Integrated biodiversity risks into multi disciplinary company wide risk management processes



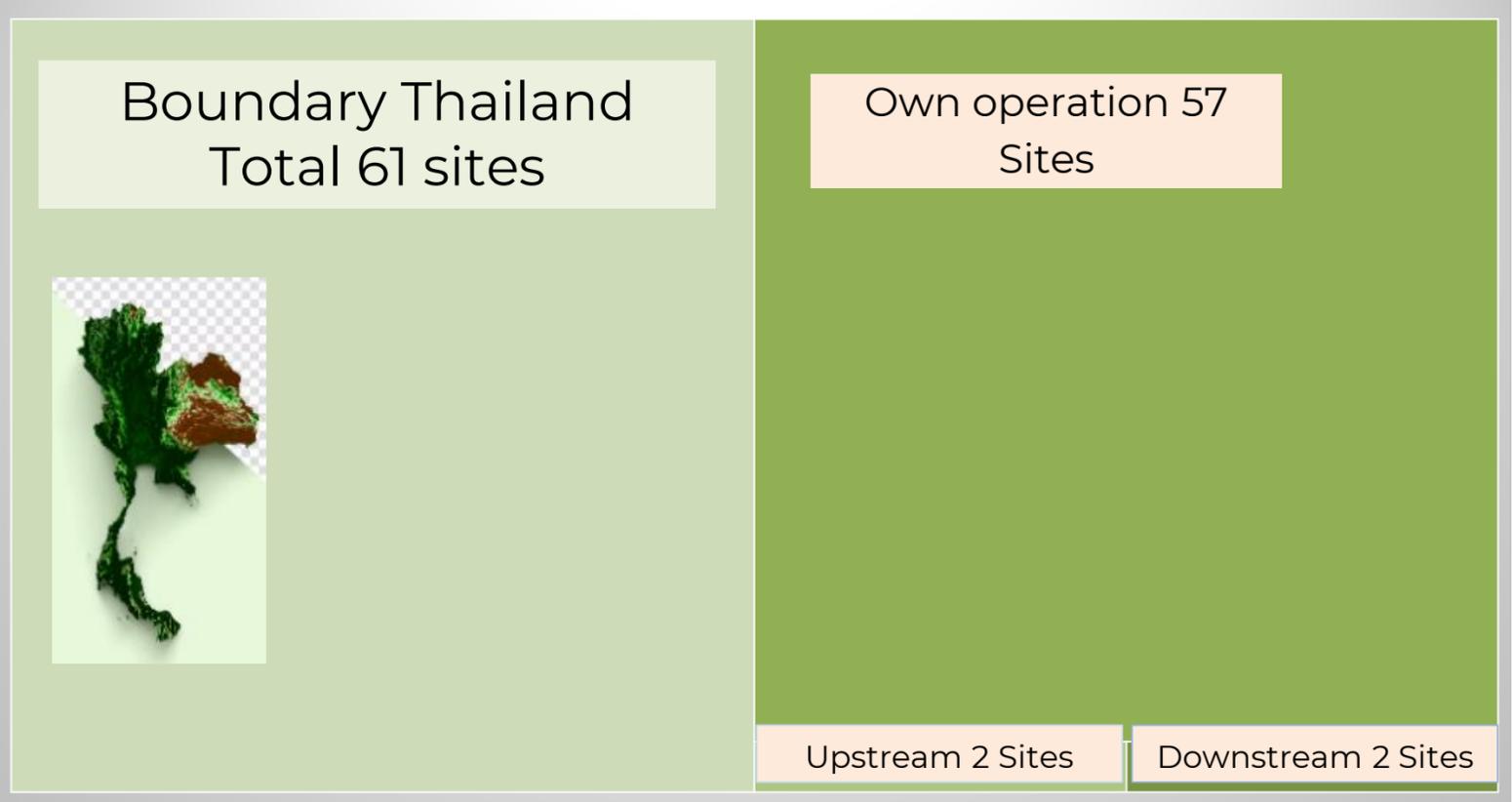
## Step 01 SCORING THE ASSESSMENT

### Sector on Biodiversity



<b>Agricultural (Plant Production)</b>	<b>6 sites</b>	Office and Professional	6 site	Chemical and other material	7 sites
Food and Beverage	12 sites	Other	6 sites	Electricity Energy Production	17 sites

### Identifying industry materiality



# Biodiversity risk assessment results

## Step 02 COLLECTING LOCATION-SPECIFIC COMPANY AND SUPPLY CHAIN DATA

### Steps to identify industry materiality

- Collect information on the site names and the specific location in each area operated and the supply chain
- Identify criteria for classifying different levels of business importance of own operational sites and the supply chain

### Criteria

#### Own operations



#### High business importance level

- Operational controls
- High revenue

#### Medium business importance level

- Operational controls
- Medium revenue

#### Low business importance level

- Operational controls
- Low revenue



#### Upstream activities

The representatives of key suppliers

#### Downstream activities

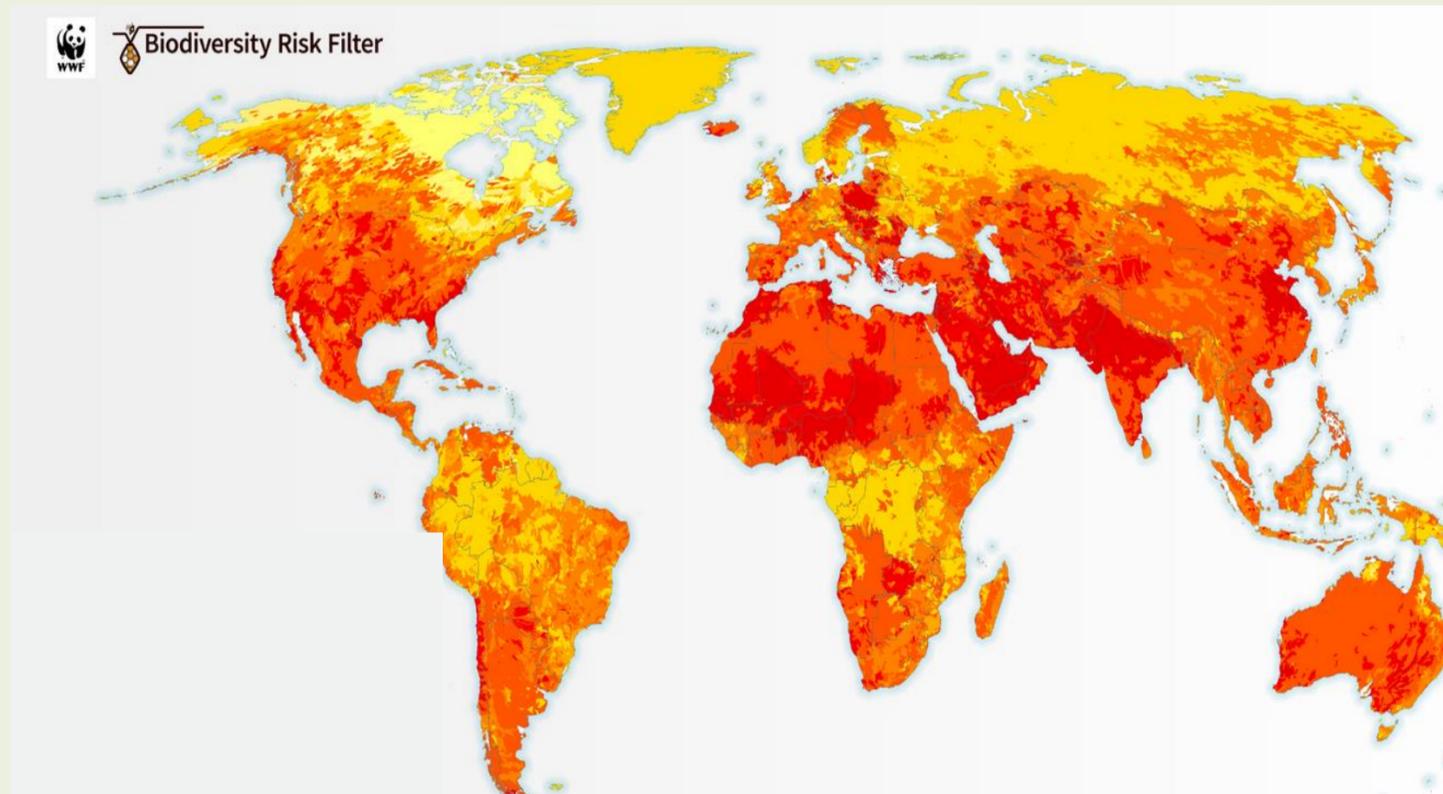
The representatives of key customers

# Biodiversity risk assessment results

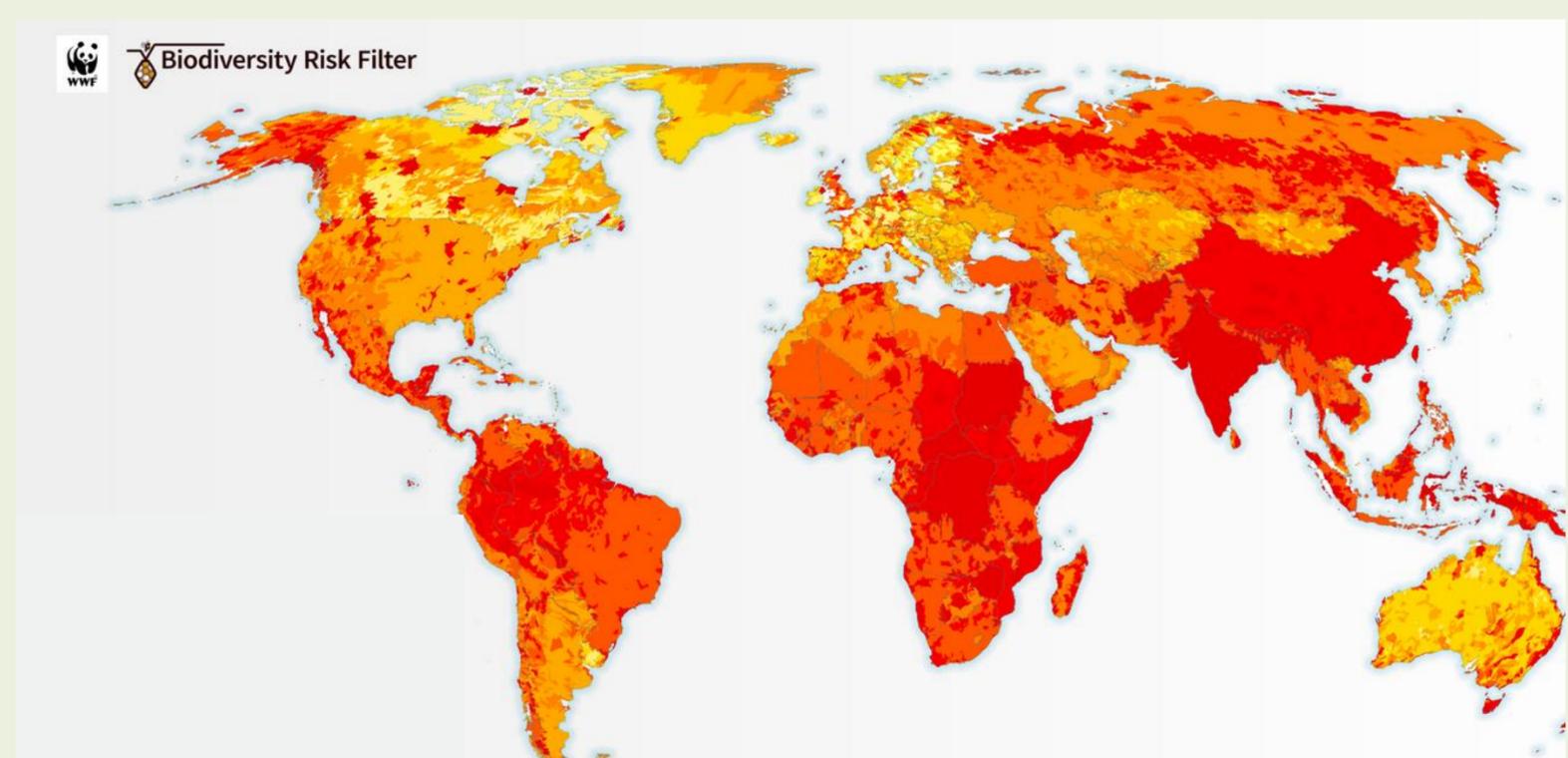
## Step 03 ASSESSING BIODIVERSITY-RELATED RISKS

### Scape risk score for each company location

#### Global Physical Risks



#### Global Reputational Risks



### RISK TYPE and Categories

#### PHYSICAL BIODIVERSITY RISKS

-   
 Provisioning Services
-   
 Enabling Services
-   
 Mitigating Services
-   
 Cultural Services
-   
 Pressures on Biodiversity



#### REPUTATIONAL BIODIVERSITY RISKS

- Environmental Factors
- Socioeconomic Factors
- Additional Factors



# Biodiversity risk assessment results

## Step 03 ASSESSING BIODIVERSITY-RELATED RISKS

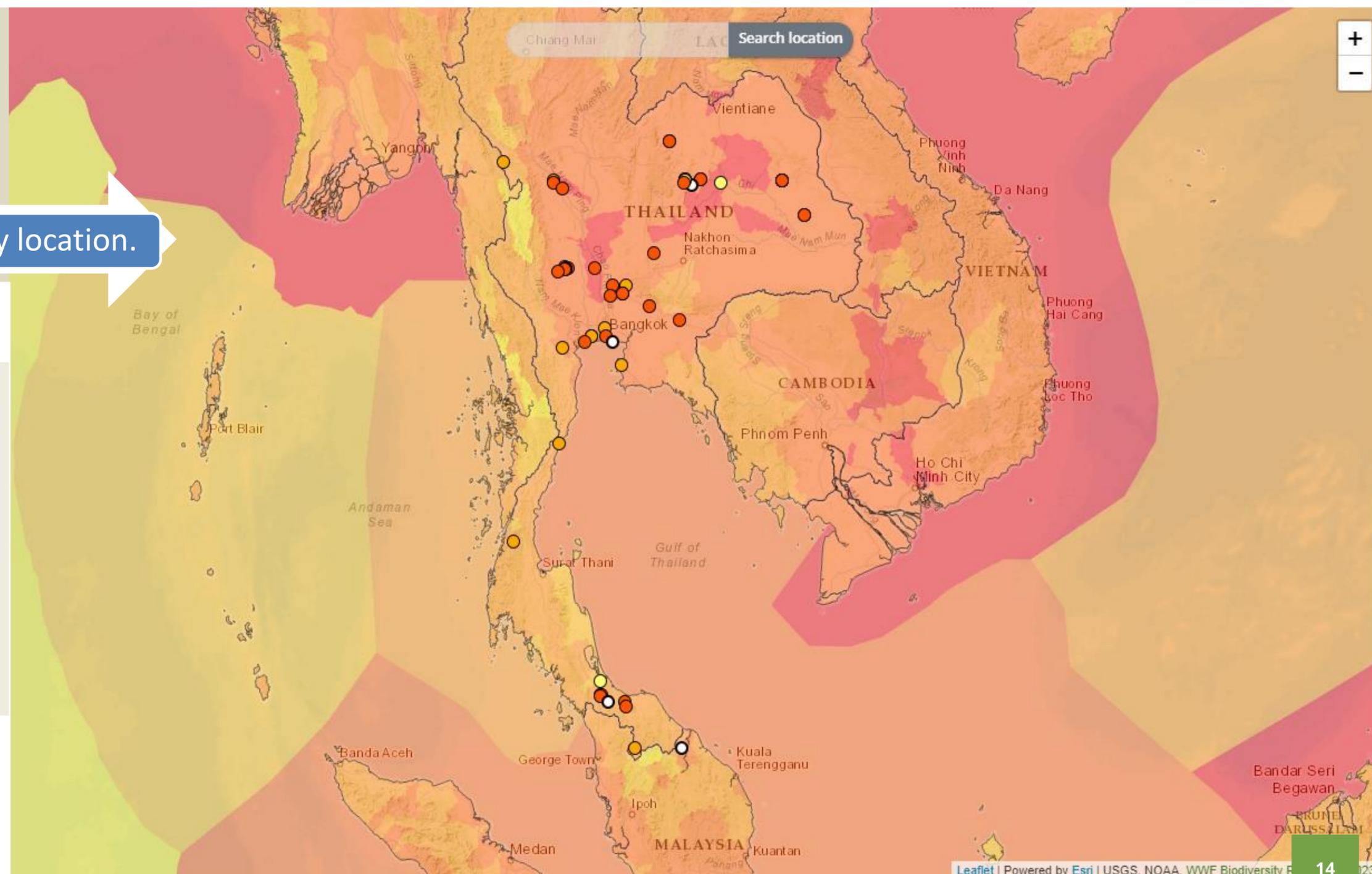
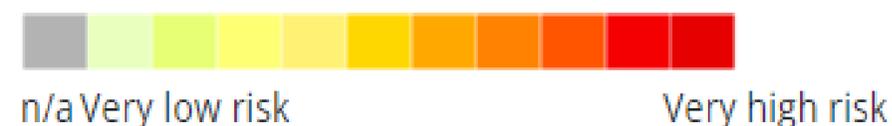
### Mitr Phol Group Physical Risk

Scape risk score for each company location.

#### Physical Risk

Physical Risk is driven by the ways in which a business depends on nature and can be affected by both natural and human-induced conditions of land- and seascapes. It comprises the risk categories: 1) Provisioning Services, 2) Regulating & Supporting Services - Enabling, 3) Regulating Services - Mitigating, 4) Cultural Services and 5) Pressures on Biodiversity. Therefore, physical risks account for the status of the ecosystem services that companies, or their suppliers, rely on.

WWF Biodiversity Risk Filter (2023)



# Biodiversity risk assessment results

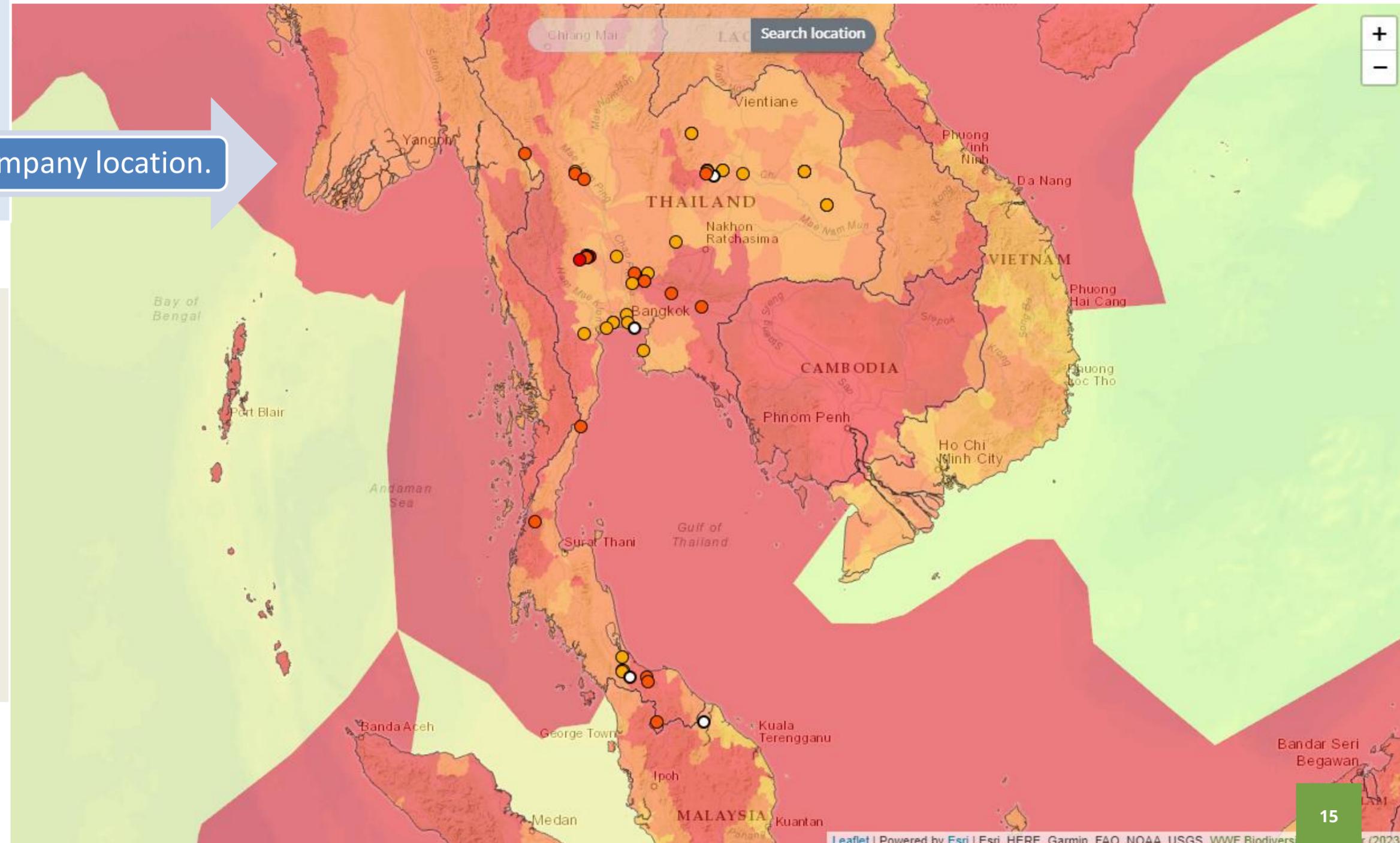
## Step 03 ASSESSING BIODIVERSITY-RELATED RISKS

### Mitr Phol Group Reputational Risk

Scape risk score for each company location.

#### WHAT AM I SEEING HERE?

Reputational Risk can result from a company's actual or perceived impacts on nature and people. Reputational risk represents stakeholders' and local communities' perceptions on whether companies conduct business sustainably or responsibly with respect to biodiversity, and can ultimately affect brand value and market share, among other factors. While a considerable amount of reputational risk is operational (not scape-related), there are some pre-conditions that make reputational biodiversity risk more likely to manifest. It comprises the risk categories: 1) Environmental Factors; 2) Socioeconomic Factors and 3) Additional Reputational Factors.



WWF Biodiversity Risk Filter (2023)



# Biodiversity risk assessment results

## Step 03 ASSESSING BIODIVERSITY-RELATED RISKS

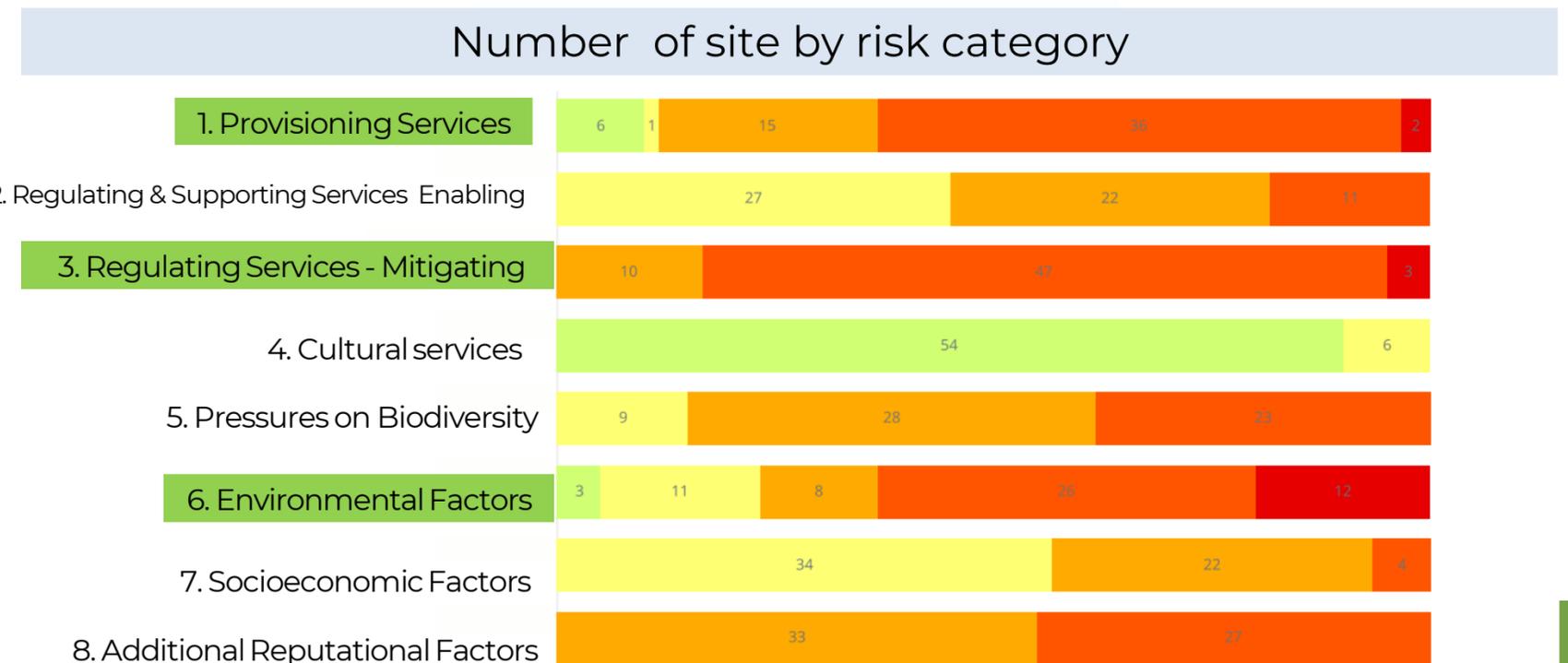
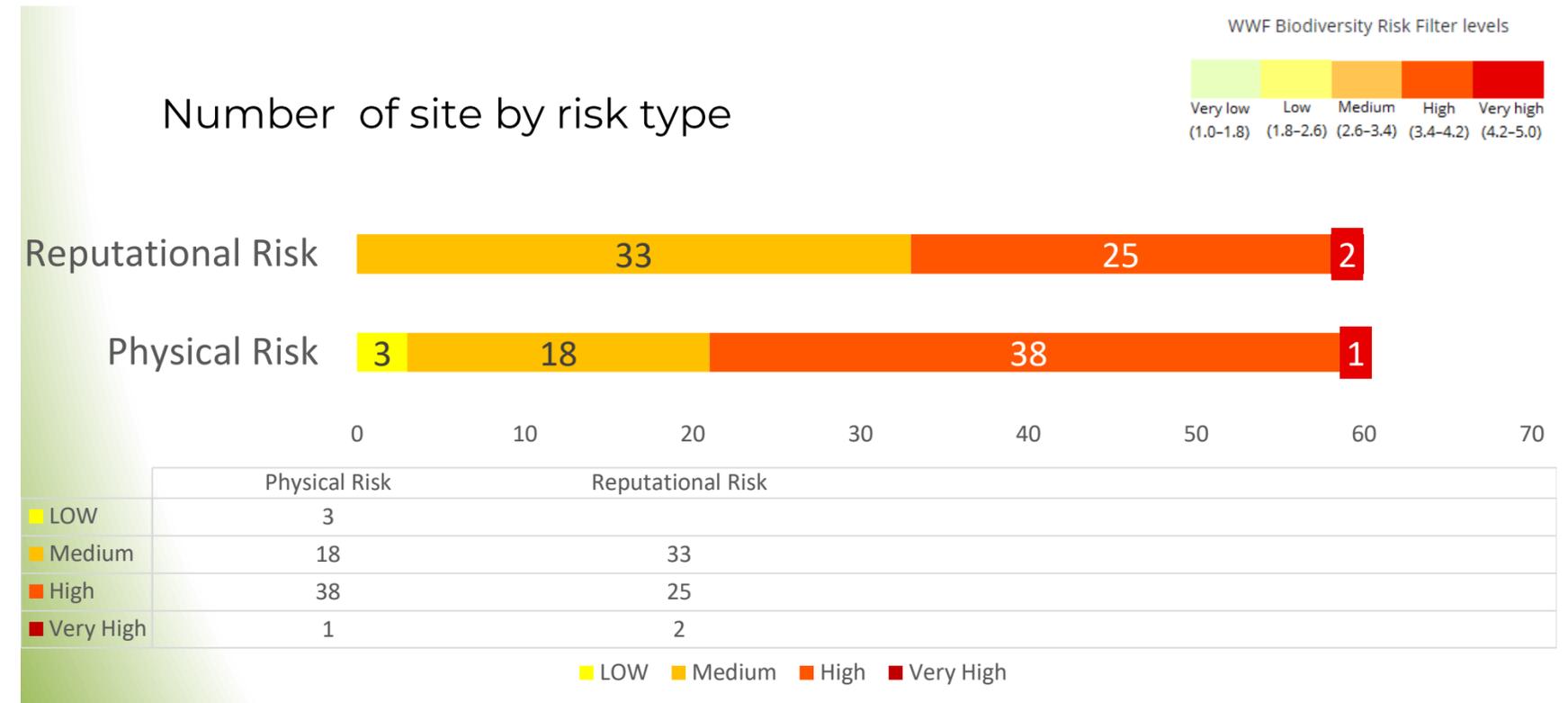
### Interpret the Risk Assessment Results

#### Biodiversity risk analysis for: Mitr Phol Group 2024

- Result of impact of each risk type : Comparing both risks, by focusing on high and very-high impact, there are 39 sites of physical risk and 27 sites of reputation risk. Therefore the total scoring of physical risk, also focus on high to very high impact, the physical risk has higher risk scores than the reputation risk.
- Result of risk categories : The evaluation is based the high to very high risk scoring. Resulting as show three categories that has high risk scores are environmental factors – 38 sites , regulating services—mitigating – 50 sites and provisioning services. -38 sites.

#### Prioritize of Location

- By using result from the interpret result above , there are two areas which have very high risk impact. The locations are Rai Dan Chang and sugarcane farmer (supplier) in Dan Chang.



# Biodiversity risk assessment results

## Step 03 ASSESSING BIODIVERSITY-RELATED RISKS

### Biodiversity Exposure and Assessment

We have assessed own operational sites to identify sites with significant biodiversity impacts



	Number of sites	Area (Hectares)
<b>Overall area of r own operational sites</b>	<b>57</b>	<b>12,165.3</b>
<b>Biodiversity impact assessments for own operational sites</b>	<b>57</b>	<b>12,165.3</b>
<b>The total exposure of the sites assessed</b>	<b>1</b>	<b>799.2</b>
<b>Total area of Management plans</b>	<b>1</b>	<b>799.2</b>

# Biodiversity risk assessment results

## Step 04 AGGREGATING BIODIVERSITY RISK TO THE COMPANY AND PORTFOLIO LEVEL

### Risk Management Overview

The Mitr Phol Group’s risk management system and policy have been approved by the risk management committee (RMC). Since 2012, the enterprise risk management department has been established to function on a risk management basis in all business units.

This department conducted risk assessments, managed risk, and promoted risk awareness. The risk management policy and assessment are reviewed by the enterprise risk management department and RMC once a year. Generally, enterprise risk has been classified into the areas of strategic, operational, financial, compliance and digital risk. In addition, climate change is classified as part of strategic risk. Risks description are clearly stated and embedded in all business units. The risk system and management are carried out by the COSO Enterprise Risk Management framework, which is integrated into ESG-related risk management.

The process of risk identification is done on an ongoing basis, such as for workshops and engineering requirements. The measurement of each risk is subject to each business unit, which depends on both the perspective of likelihood and potential impact in line with the COSO framework.

### Risk Management Framework



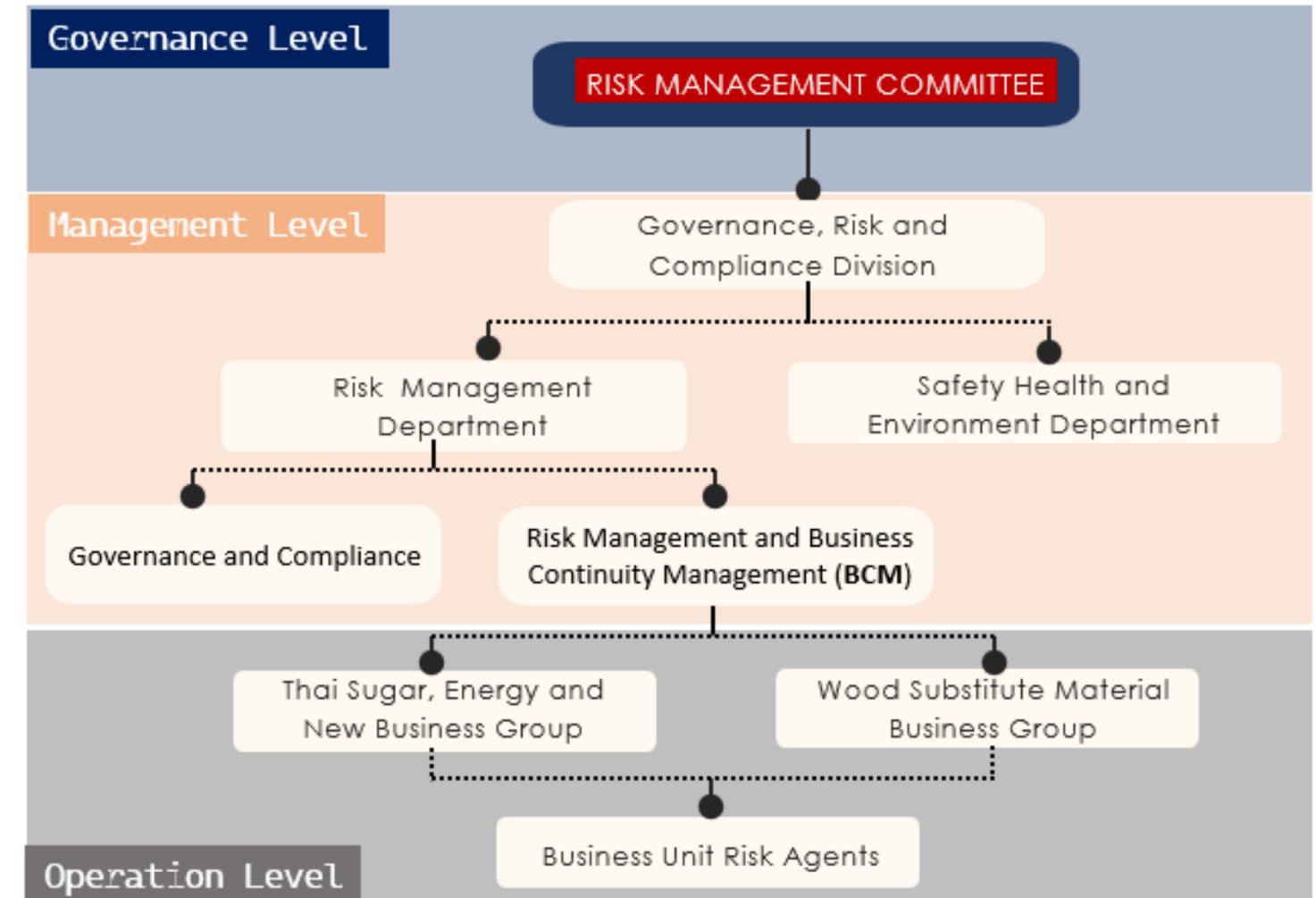
# Biodiversity risk assessment results

## Step 04 AGGREGATING BIODIVERSITY RISK TO THE COMPANY AND PORTFOLIO LEVEL

### Risk Management Structure

Mitr Phol Group has a clear structure of risk management structure. They are divided into three levels: governance, management, and operation.

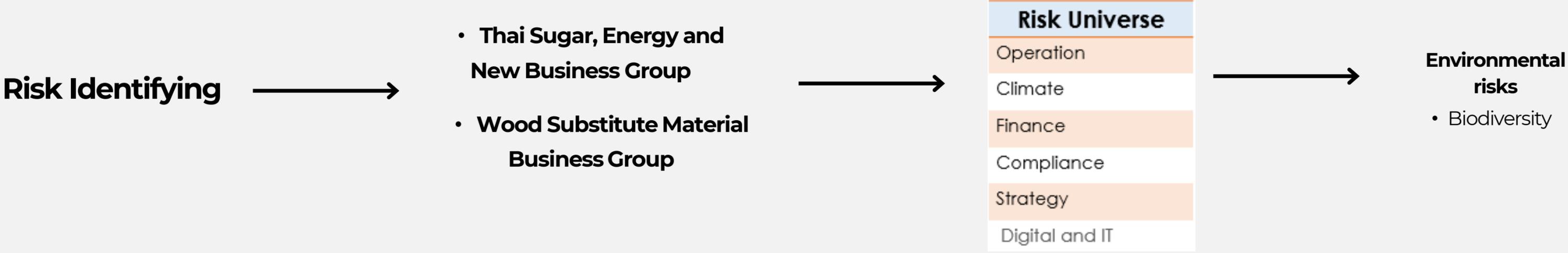
- At the governance level, risk management is overseen by RMC, which is responsible for overseeing policy, evaluation, and annual risk reviews to identify potential risks and provide recommendations to minimize impact.
- At the GRC - management level, the tier above has cascaded the goals and targets on risk issues down to the Governance, Risk, and Compliance Division (GRC). The goals are determined and put into action in the organization's strategy and likelihood as part of risk management.
- Operation Level creates impact through the entire organization, from management to operation level. At this level, organization strategy has been cascaded from the above level to a business group composed of each business in the Thai Sugar, Energy, and New Business Group and the Wood Substitute Material Business Group. In this level, business unit risk agents have been put into action to respond, monitor, control, and report to the above tier.



# Biodiversity risk assessment results

## Step 04 AGGREGATING BIODIVERSITY RISK TO THE COMPANY AND PORTFOLIO LEVEL

Risk Identify, Assessing, and managing nature-related risks are integrated into the organization’s overall risk management.



### Biodiversity Risk Assessment

### Risk Analysis and Evaluation



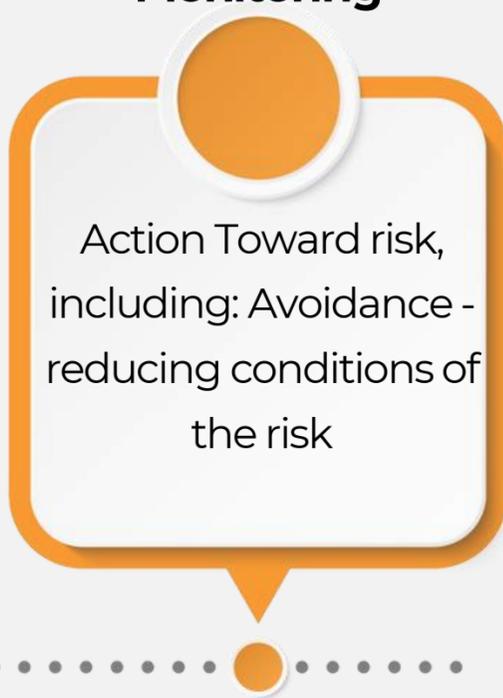
### Prioritize



### Risk Response



### Risk Control and Monitoring



### Review



**Biodiversity**

**Mitigation Actions**

# Application of the mitigation hierarchy



## **Avoid**

Plan and manage factory and operational areas to ensure responsible processes, particularly in biodiversity-sensitive areas. This includes the issuance of safety, security, occupational health, and environmental protection policies, which establish oversight and control of business activities to preserve biodiversity and ecosystem richness.

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## **Restore**

Continuous ecosystem development and maintenance through the forest restoration project in cooperation with various stakeholders. The aim is to plant 2.2 million trees over a 10-year period (2022-2032). This includes biodiversity conservation projects in community forests and FSC-certified (Forest Stewardship Council) rubber plantations under Mitr Phol's wood substitute material business.

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## **Reduce**

Improve business operations under the 'From Waste to Value Creation' concept, which focuses on adding value to waste by transforming residues from the sugar production process into materials for various industries, alternative energy sources, and new business opportunities. For example, bagasse is used as a fuel for biomass power generation, producing electricity for internal business operations and for sale to external parties. Molasse is fermented with yeast to produce ethanol. Vinasse, a byproduct of ethanol production, is combined with filter cake, a byproduct of sugar production, to create bio fertilizer for use in sugarcane plantations. This helps reduce the impact on the ecosystem by capitalizing on waste recycling.

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## **Regenerate and Transform**

Promote the 'Mitr Phol ModernFarm,' a sustainable modern farming method for sugarcane farmers. This involves the utilization of modern agricultural machinery and technology, soil conservation with various methods such as crop rotation with legumes, green cane trash blanketing, and efficient water management. These methods help increase farm management efficiency and reduce the use of resources, such as raw materials, equipment, and labor, leading to lower costs per rai and promoting eco-friendly farming practices.





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