Preliminary Report of

Biodiversity Risk Assessment

Advanced Info Service Public Company Limited

July 2023

Table of Contents

List of Figure

List of Table

1 Introduction

1.1 Approach and Methodology

AIS realizes the importance of natural capital and ecosystem services in our business operations, leading us to prioritize the conservation and protection of biodiversity and ecosystems across our value chain. We are firmly committed to protect and conserve the key important biodiversity areas and forests that align with the national and international organizations. Our ambitious target is to achieve 'No Net Loss' (NNL) of biodiversity by 2027. In order to understand the risks and opportunities related to biodiversity arising from business operations, we have conducted a biodiversity risk assessment according to the framework of the **Taskforce on Nature-related Financial Disclosures (TNFD)** version v0.4 Beta. This framework recommends disclosing the 4 pillars as the following: governance, strategy, risk & impact management, and metrics & targets, as recommended for disclosure. By adopting this comprehensive approach, we aim to enhance our sustainability practices and contribute to biodiversity conservation and preservation.

We engaged with the related business units and the experts from environmental consultancy firm on the biodiversity and natural ecosystem to prepare the Preliminary Biodiversity Risk Assessment Report (the Report). Then seek advice and endorsement from the executive management level.

Assumption

The biodiversity risk is considered by the risk related to the telecommunication services industry with a rating of moderate to very high risk referring to the Biodiversity Risk Filter by World Wildlife Fund (WWF).

Limitations

This Report is the first study on the related risk to biodiversity. At this stage, due to the data availability and site access to all identified risk locations, the Report covers the governance, strategy, and risk & impact management pillars, which conducts preliminary risk assessment on 2 topics i.e. water stress and tree cover loss. However, we will conduct comprehensive study on risk & impact management and include metrics & targets pillars, and related financial impact for the next phase.

The Report is focused on the operation sites located in or near sites containing globally or nationally important biodiversity and water stress area. It is prepared based on the existing facilities that affect the financial performance in 2022.

1.2 Scope of Disclosures

In 2022, the scope of biodiversity risk assessment is coverage own operations and the adjacent areas to own operations as shown in ***Table 1***. For the next phase, it will be expanded the assessment of upstream and downstream activities to cover the risks and opportunities in the business value chain.

Table 1 Scope of this Report (AIS Own Operations and the Adjacent Areas to Own Operations)

Key Activity	Asset	Biomes & Ecosystems
Site preparation Site installation Water use/ water discharge Maintenance Storage and distribution of products The presence of the installation Chemical usage (Herbicide)	Data Center Transmission tower/ based stations Office Building Warehouse AIS Shop	Tropical rainforest Rainforest Pond & lakes Streams & rivers Marine Mangrove

2 Governance

2.1 Management Structure

The overview of sustainability and the ESG related issues is oversighted by the Board of Directors (BOD). The BOD also assigns the Sustainable Development Committee, which is a Sub-Board level Committee, chaired by an independent director and consisting of the CEO and 2 non-executive directors, to guide and review of the priority issues and progress of efforts related to the ESG issues. Biodiversity is one of the environmental issues that AIS assesses both risks and opportunities and formulate plan to mitigate risks. At the Executive Management level, it is responsible for managing ESG risks and opportunities and guiding the relevant business units to execute the mitigation and control measure, see more details in ***Figure 1***.

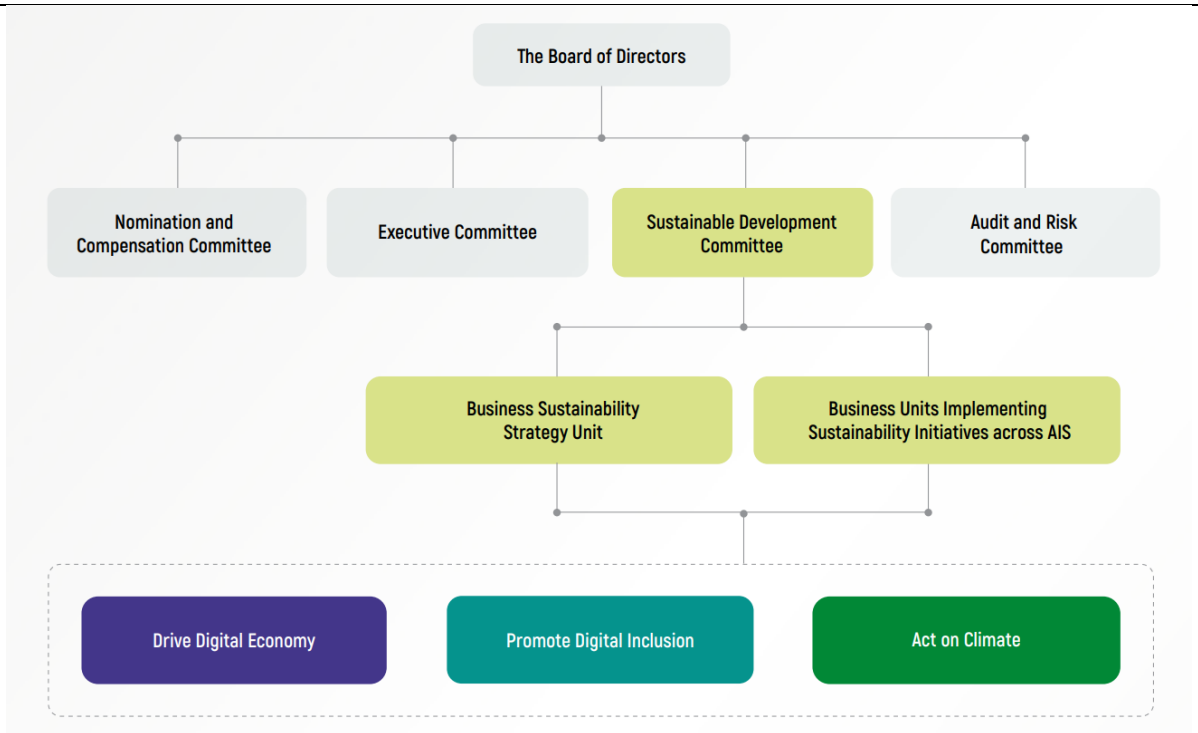

Figure 1 Governance Structure

3 Strategy

The nature-related risks and opportunities are assessed by considering the-interaction between natural capital and business activities/ society from the two perspectives of “dependencies” and “impacts” on the natural capitals base on the telecommunication service industry, provide by Biodiversity Risk Filter of WWF. The actual and potential effects from nature-related risks and opportunities will be integrated into AIS's business model, strategy, and financial planning. Moreover, the mitigation measures have been determined to prevent and reduce the potential risks and impact, as identified through the assessment process.

The biodiversity areas are screened referring to national and international organizations such as the International Union for Conservation of Nature (IUCN), UNESCO World Heritage Centre, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Ramsar Area, Key Biodiversity Areas (KBAs), and Alliance for Zero Extinction (AZE).

The responsible business units (i.e. site acquisition, procurement, network planning and implementation, maintenance) and related stakeholders are engaged to provide background information on biodiversity and identify the nature-related risks and opportunities, as well as the affected financial indicators in AIS’s business.

3.1 Nature-related Dependencies, Impacts, Risks, and Opportunities

3.1.1 Nature-related Dependencies, Impacts and Risks

Based on the Biodiversity Risk Filter of WWF, the telecommunication services industry's actual and potential dependency-related and impact-related biodiversity risks are identified and summarized below.

- Dependency-related biodiversity risks: landslides, fire hazard, extreme heat, and tropical cyclones.
- Impact-related biodiversity risks: land use change, tree cover loss, and protected/conserved areas.

The risks of biodiversity-related with the time horizon and affected financial indicators are described in ***Table 2***.

Table 2 An Overview of Dependency-Related and Impact-Related Biodiversity Risks

Issues	Description		
	Time horizon[1/]	**Risk**	**Affected financial indicators**
Dependency-related biodiversity risks			
Landslides	Short term	• Soil erosion might damage base stations which would lead to higher operational cost for maintenance to prevent the disruptions on our services or to repair the damaged asset. • As telecommunication and its network are considered an important infrastructure for people and businesses, the damage, which disrupts the services, would cause widespread casualties, and affect our reputation.	• Capital expenditure • Operating costs Value of assets • Revenue
Fire Hazard	Medium - long term	• Fire damage base stations including the equipment and the structure itself. It might affect the adjacent areas cause by the toppled structure. • The damaged equipment and the structure disrupt the services, would cause widespread casualties, and affect the company reputation.	• Capital expenditure • Operating costs Value of assets • Revenue
Extreme Heat	Medium - long term	• Air-conditioning system, water-cooling system, and other equipment might work harder, increasing the chances of equipment deteriorating more quickly and having a shorter lifespan. Moreover, they might need to be replaced by better heat resistant technologies. • Another risk is the increased energy usage to power the cooling system. • These have a direct impact on the financial aspects and business continuity of the company.	• Capital expenditure • Operating costs Value of assets • Revenue
Tropical Cyclones	Short term	• Typhoon or Cyclone cause damage through wind and water. Wind can cause direct force damage when it run into directly into base stations or installations. Water can cause damage through flooding, storm surge, and high tides. The equipment and the structure itself might be damaged, which would lead to higher operational cost for maintenance to prevent the disruptions on our services or to repair the damaged asset.	• Capital expenditure • Operating costs Value of assets • Revenue

Issues	Description		
	Time horizon[1/]	Risk	Affected financial indicators
Impact-related biodiversity risks			
Land Use Change	Long term	• The installations (tower base/ base station/ building) need the pilling and secure foundation for the safety reason. Land use change might not be avoided, however the modified areas for tower base/ station base installation is very small (3x3 to 10x10 square meter). The building is only located in the urban area. • The change of land use will impact the habitat ecosystem services directly, based on the type of habitat and the scale of land use change. • It affects the company's reputation and needs to restore or offset for the changed habitat.	• Operating costs Value of assets • Revenue
Tree Cover Loss	Long term	• The site preparation for construction and asset installment might be cause tree cover loss in the strategic area, in cases where it cannot be avoided. • Tree cutting causes change the existing habitat and impacts to ecosystem services. It affects the company's reputation and needs to offset for the restoration.	• Operating costs Value of assets • Revenue
Protected/ Conserved Areas	Medium - long term	• Operating in or nearby protected or conserved areas might disturb the animal and ecosystem services, which would lead to unintentional violation of the laws and regulations on biodiversity. Even the permission to operate is granted by the regulatory agencies. • It affects the company's reputation and needs to relocate the operation site, which directly impacts the company's services and business continuity.	• Capital expenditure • Operating costs Value of assets • Revenue

Remark: Time horizon[1/]; Short term: 1-3 years, Medium term: 4-6 years, Long term: 7-10 years

3.1.2 Opportunities

The opportunity of biodiversity-related in AIS business are identified as below.

Resilience opportunity

The investors, financial institutions and customers are looking for the company that contribute to the reduction of dependence and impact on nature. It attracts the investors/ funds to invest in the company. Moreover, integration of biodiversity and no-deforestation in the green procurement process to promote sustainable sourcing and circular economy to reduce the nature-related impact on biodiversity and natural ecosystem services. It will reduce business interruption from any shortage in the business value chain.

Market opportunity

The business partners and enterprise customers also need the products/ services those aware of biodiversity risk as a part of their business value chain. AIS will gain the trust from our partners, and gain loyalty and confidence from our enterprise customers. Additionally, general customers who pay attention on the ESG products and services will put priority on the company that cares and takes action to protect the biodiversity and natural ecosystem.

3.2 Location

The operation sites are assessed for their dependencies and impacts on nature and related impacts on biodiversity. This assessment is based on the sites located in or near sites containing globally or nationally important biodiversity, which includes Protected Areas (PA), Key Biodiversity Areas (KBA), Ramsar Convention areas (Ramsar), UNESCO World Heritage (WH) areas, and Water Stress (WS) areas with location-specific approach.

The assessment covers all of AIS's own operational sites by asset type, representing a 100 percent assessment. The findings of this assessment are summarized in ***Table 3***. Additionally, ***Figure 2*** illustrates an example map showing the locations of the Protected Areas (PA) and AIS operational sites within a 1 km-radius.

Table 3 Potential Biodiversity Risks by Location and AIS Asset Type

Asset Type	Potential Biodiversity Risks by Locations				
	PA	KBA	Ramsar	WH	WS
Data Center	NA	NA	NA	NA	NA
Transmission tower/ Based station	Y	Y	Y	NA	NA
Office building	NA	NA	NA	NA	NA
Warehouse	NA	NA	NA	NA	NA
AIS shop	NA	NA	NA	NA	NA

Remark: NA = Not applicable / Not relevant to AIS' activity / None of assets are located in these areas
Y = The sites are located in areas identified as Potential Biodiversity Risks by Locations
PA = Protected areas
KBA = Key Biodiversity areas
Ramsar = Ramsar Convention areas
WH = UNESCO World Heritage areas
WS = Water Stress areas

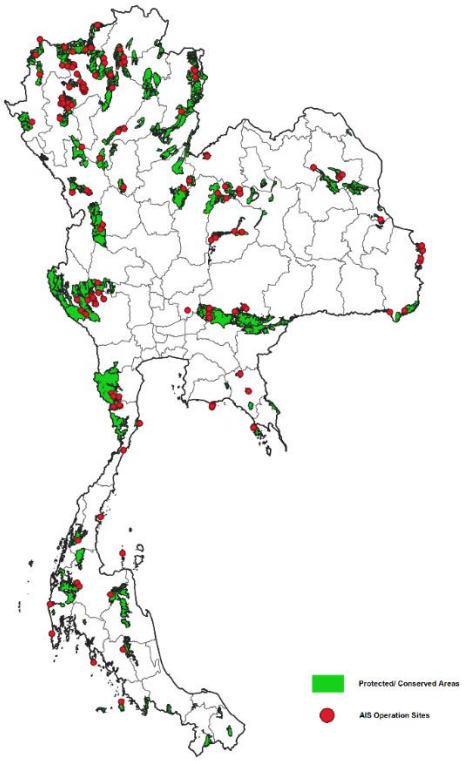

Figure 2 The Protected Areas (PA) and AIS Operational Sites in 1 km-Radius

4 Risk and Impact Management

4.1 The Result of Biodiversity Risk Assessment

4.1.1 The Screening Result of Dependency and Impact-related Risks

The 4 dependency-related biodiversity risks have been screened and found to have potential risks in the range of moderate to high, as showed in ***Table 4.***

Likewise, the 3 impact-related biodiversity risks are screened and found the potential risks have been screened and found to have potential risks in the range of moderate to very high, as showed in ***Table 4.***

Table 4 The Summary of Dependency-Related and Impact-Related Biodiversity Risks

Biodiversity Risk	Potential Risk Rating		
	Moderate	High	Very High
Dependency-related			
Landslides	✓	✓	-
Fire Hazard	✓	✓	-
Extreme Heat	✓	✓	-
Tropical Cyclones	✓	✓	-
Impact-related			
Land Use Change	✓	✓	✓
Tree Cover Loss	✓	✓	✓
Protected/ Conserved Areas	✓	✓	✓

Remark: The screening result of biodiversity risk rating by Biodiversity Risk Filter Tool (WWF) is based on the granularity of data, that provided the data source for this screening process.

4.2 Priority Biodiversity Risks

The key priority areas are water stress and the important biodiversity protection. We avoid undertaking operational activities near those areas or apply the mitigation hierarchy principles to manage risk and reduce the impact on the biodiversity. The initiatives that promote biodiversity such as water efficiency and water recycling program, and none-cutting restricted trees/ tree cover loss avoidance in the protected areas.

4.2.1 Water Stress

As a result of the risk assessment, it has been determined that none of data centers are located in the water stress area. Additionally, the transmission towers and based stations do not have any activities activity that related to water consumption. Consequently, there is no impact on the water stress area or water condition stemming from these facilities and operations.

4.2.2 Tree Cover Loss

A total of 1,654 of AIS sites are located in the protected or conserved areas or within a 1 km-radius from its boundary. These areas pose a potential risk of tree cover loss due to the existing operation, such as maintenance activities and chemical substance usage for weed control, as showed in ***Figure 2***. However, AIS has developed a mitigation plan to reduce the risk that may arise by its operation. Moreover, AIS follows the mitigation hierarchy principles across all operations, with a special focus on site acquisition.

Furthermore, before commencing any operations, AIS ensures that the location site is approved by the authorized agencies (i.e. Royal Forest Department, Department of National Parks, Wildlife and Plant Conservation, etc.). Additionally, community acceptance is sought prior to commencement and implementation to ensure responsible and sustainable practices.

4.3 Mitigation Measures

In relation to AIS's key activities as outlined in ***Table 1*** (refer to section **1.2 Scope of Disclosures**), AIS places great emphasis on assessing the potential impact on the biodiversity risks from telecommunication services industry and its activities. The mitigation measures are determined in accordance with the mitigation hierarchy principle, which focuses on preventing and reducing risk or impact, as demonstrated in ***Table 5***.

Table 5 Mitigation Measures of Biodiversity Risk

Activity	Mitigation Measures	Responsible Unit
All activities	• Apply the mitigation hierarchy principles (avoid, minimize, restore & offset) in site selection process and all operating activities.	• Site Acquisition • Network planning and implementation • Procurement • Maintenance
	• Operate within the allowed areas in accordance with the laws and regulations. • Limit the implementation or operational activities in authorized site only, which could control the potential or actual impact that contain within the operation sites.	• Network planning and implementation • Maintenance
Infrastructure design	• Integrate green infrastructure into the design, such as green roofs and walls on buildings, which can provide habitats for local wildlife and contribute to urban biodiversity. • Implement innovative and low-impact designs for telecommunication towers and equipment installations, aiming to minimize the footprint on natural areas. • Incorporate wildlife-friendly features into the infrastructure, such as bird-safe designs and structures, to avoid collision risks and promote a safer environment for wildlife.	• Network planning and implementation • Maintenance
Site preparation	• Avoid construction in the protected areas or site preparation in areas with restricted trees according to the laws. If it is unavoidable, the restricted trees will be transplanted to a suitable area.	• Network planning and implementation
Site maintenance	• Prioritize the importance of areas based on the biodiversity risks to establish a managing approach for important biological areas. • Chemical substance usage is not allowed in the sites identified with high or very high risk. • Use chemical substances in the appropriate quantities to control weeds for the sites with low to moderate risk only, and limit usage within the site strictly.	• Maintenance

5 Next Steps and Recommendations

- Roadmap for implementation and adoption of nature-related financial disclosures to enhance transparency and accountability regarding our impact on biodiversity and nature-related risks.
- Engagement with stakeholders and collaboration with existing reporting frameworks to ensure alignment and foster a collective effort towards sustainable practices and AIS's biodiversity conservation.