Sustaining an incredible future

NATURAL IMPACT ASSESSMENT REPORT 2023

Catalog

Message from the Chairman

The World Economic Forum's Global Risks Report 2024 highlights that four of the top five risks over the next decade are related to biodiversity and natural ecosystems. These risks include biodiversity loss, ecosystem disruption, climate change impacts from greenhouse gas emissions, and extreme weather events. The report[1] estimates that up to $58 trillion of global economic activity depends on natural resources and their ecosystem services. The depletion of natural capital and the degradation of ecosystems will inevitably have a significant impact on business operations, supply chain security, and end markets.

In 2021, the World Business Council for Sustainable Development (WBCSD) published the Natural Capital Protocol, which guides businesses in assessing their impacts and dependencies on natural capital from a holistic operational perspective. This protocol enables companies to identify and measure associated risks and opportunities, serving as a valuable reference for corporate management decisions. The United Nations Biodiversity Conference (COP15) in 2022 adopted the Kunming-Montreal Global Biodiversity Framework, establishing clearer implementation goals that have gained increasing attention in capital markets.

Building on these developments, the Taskforce on Nature-related Financial Disclosures (TNFD) released a new version of its comprehensive assessment framework for natural ecosystems in 2023. This revised framework extends the evaluation process of the Natural Capital Protocol and introduces a novel nature assessment methodology called "LEAP" (Locate, Evaluate, Assess, and Prepare). The LEAP approach encourages organizations to consider nature-related risks and opportunities not only from an industry perspective but also from a geographical standpoint.

ASUS has long integrated its core operational capabilities to advance a strategic sustainability approach of "Using Digitized Data and Scientific Management Practices to Support Sustainable Value Creation through Core Competencies." In 2018, ASUS took a pioneering step in the global technology industry by publishing the first Environmental Profit and Loss (EP&L) report. This initiative helped identify priority areas for resource management and elevated environmental management requirements for suppliers. By being the first in the industry to disclose monetized environmental impact results, ASUS raised awareness about the importance of valuing natural environments.

Building on the analytical experience gained from previous EP&L reports, ASUS is set to release an inaugural "Natural Impact Assessment Report" in 2024. This report will extend the integration of biodiversity identification results and combine an analysis of the dependency and impact on natural capital throughout the value chain, including operational sites and supply chains. By addressing the emerging global issue of biodiversity risk management, ASUS is taking proactive steps to identify whether our operational sites and supply chains impact key biodiversity areas across our value chain. We are incorporating suppliers and ecosystems known to be in critical locations into subsequent management action assessments.

In 2024, ASUS began participating in biodiversity habitat maintenance and creation projects to implement environmental impact mitigation actions in response to policies promoted by the Forestry and Nature Conservation Agency. These projects involve engaging in actions beyond the value chain, such as enhancing ecosystem resilience through natural carbon sinks. In the future, ASUS will further consider using innovative technologies such as generative AI to assist in biodiversity management and will continue to reduce the environmental footprints of our products, promoting a more inclusive and diverse corporate development strategy in pursuit of long-term sustainability and success.

ASUS Chairman
Jonney Shih

1 Source: 2023 PwC Managing nature risks: From understanding to action

00 Introduction

Businesses depend on natural resources and ecosystem services, collectively known as natural capital. Natural Capital Protocal explicitly recognizes the importance of biodiversity for the well-being and resilience of natural capital. Biodiversity can increase resilience to extreme weather events such as floods and droughts, and support essential processes such as carbon cycling, water cycling and soil formation. Biodiversity is therefore not only a component of natural capital, but also the fundamental basis for ecosystem services.

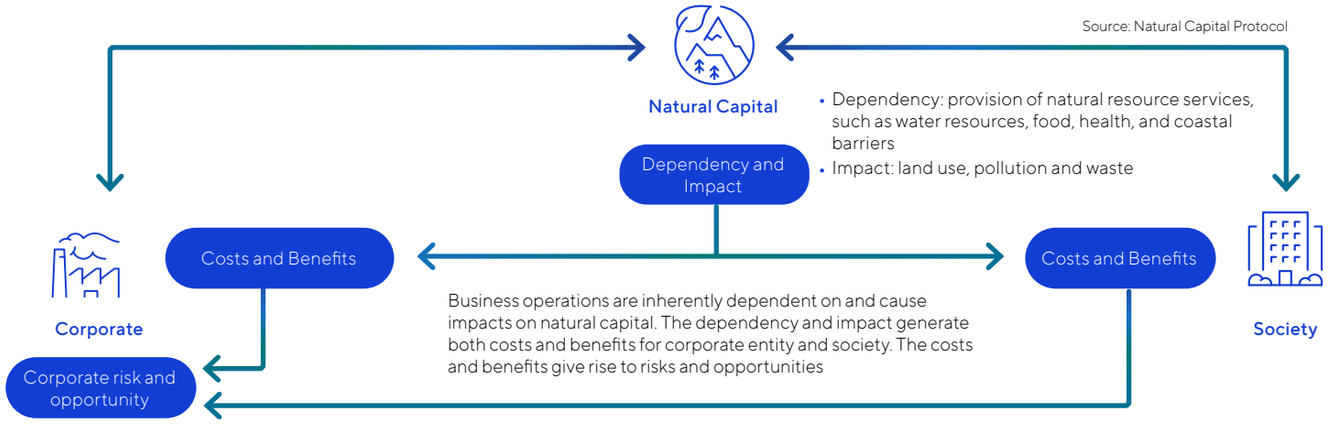
As economic development continues to expand, pressure on the natural and ecological environment is increasing. Major impacts include the over-exploitation of food and minerals, the use of fossil fuels leading to an increase in greenhouse gas concentrations, and serious threat to biodiversity. According to the International Monetary Fund's (IMF) 2021 report,[2] the rate of extinction of biological species has been gradually increasing since the 1950s, reaching a rate 100 to 1,000 times higher. Between 1970 and 2016, the number of species worldwide declined by an average of 68%.

With this in mind, the United Nations established the Convention on Biological Diversity in 1992 during the United Nations Earth Summit. The Convention established three primary goals for biodiversity: the conservation of biological diversity, the sustainable use of biological resources, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. Unfortunately, the Convention did not provide explicit and precise guidance on these three objectives.

The Kunming-Montreal Global Biodiversity Framework was established at the United Nations Biodiversity Conference (CBD COP15) held in Montreal, Canada in 2022. This framework outlines key strategies and targets for the implementation of biodiversity actions through 2030. The Kunming-Montreal Global Biodiversity Framework sets more specific targets: "By 2030, ensure that at least 30% of degraded areas in terrestrial, inland water, marine and coastal ecosystems are successfully restored to enhance biodiversity, ecosystem functions and services, ecological integrity and connectivity." The framework also requires companies to regularly monitor biodiversity and environmental quality. This enables them to assess and manage biodiversity risks and minimize the impact on their operations.

The business community also supports the United Nations Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework, recognizing the risks and opportunities that biodiversity presents to business. Therefore, in 2023, the Taskforce on Nature-related Financial Disclosures (TNFD) published the TNFD Guidance Framework, which adopted the same disclosure framework as the Taskforce on Climate-related Financial Disclosures (TCFD). This framework includes pillars such as Governance, Strategy, Risk and Impact Management, Metrics and Targets enabling companies to assess the impact of biodiversity risks on their operations according to their impact and dependence on biodiversity and to propose appropriate actions.

ASUS has conducted Environmental Profit and Loss (EP&L) assessments to evaluate the environmental impact of its operations and supply chain. This year, the assessment of ASUS' value chain operations on the stock of natural resources will be expanded. The LEAP methodology (Locate, Evaluate, Assess, and Prepare), recommended by the TNFD reporting framework, was used in this report. This methodology thoroughly evaluated the impact of ASUS' value chain operations on natural capital.



2 Quarterly Reports on IMF Finances: September 2021 Issue Volume 58 Issue 3 - The Natural Way of Economics: https://www.imf.org/external/chinese/pubs/ft/fandd/2021/09/pdf/fd0921c.pdf

ASUS and the Supply Chain

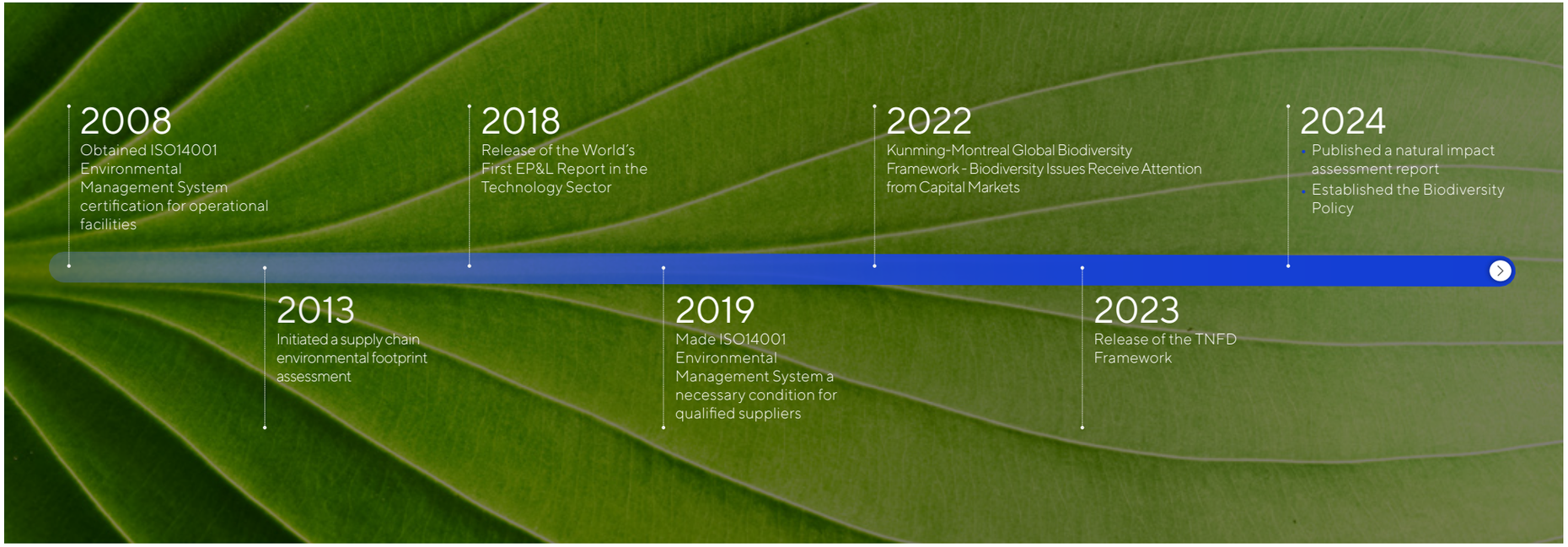
Founded in 1989, ASUSTeK Computer Incorporation. is the world's largest manufacturer of motherboards and one of the top three consumer notebook brands in the world. The primary focus of the business is 3C information products, which include computer system products, motherboards, various types of cards, tablets, smartphones, and other handheld devices. This includes activities such as design, research and development, and sales.

ASUS focuses on product design and marketing, and relies on over 700 global suppliers for raw materials, components, and product assembly factories for manufacturing. The main environmental impact comes from the supply chain, making it a critical area for environmental assessment. ASUS reduces its dependence on and impact on natural capital through green product design and environmentally friendly processes while collaborating closely with its supply chain. To strive to be among the world-class green high-tech leaders and to provide valuable contributions to humanity through our corporate commitment.

Environmental Management Milestone

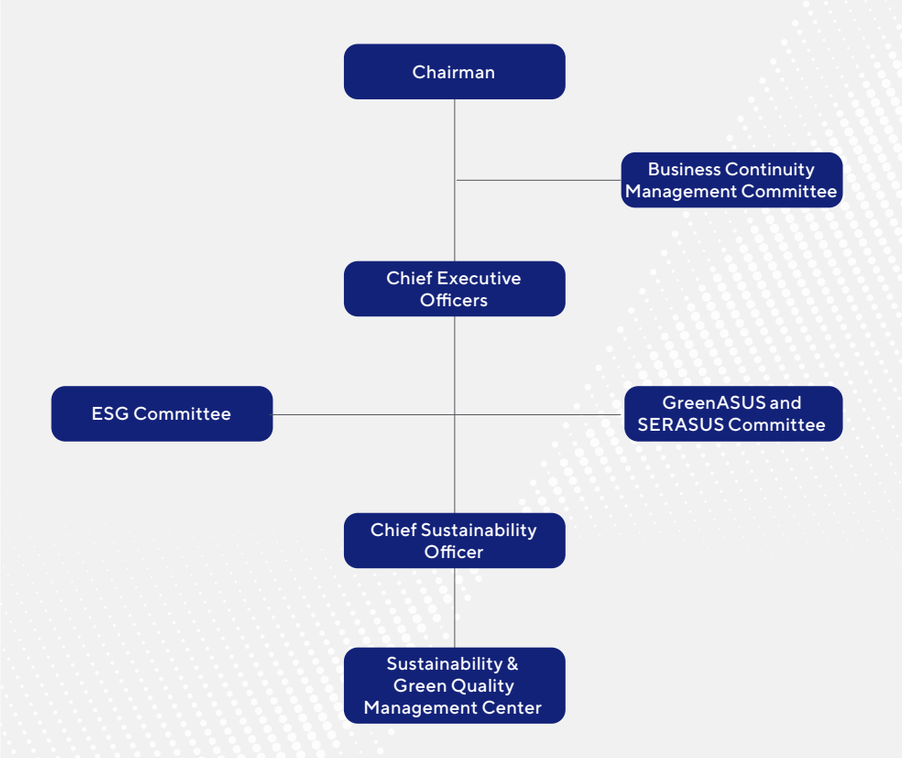
ASUS has taken a systematic approach to environmental management. Since 2008, the Company's operation centers received ISO14001 certification for environmental management systems. Since 2013, supplier environmental footprint assessment has been integrated into the supply chain management process. Since 2018, the EP&L Project has been initiated, with a specific focus on notebook computer products. The inaugural EP&L Report has been published.

To fully understand the overall environmental impact of ASUS' operations and suppliers, we have added one category of major products to the data collection each year to expand the scope to 90% of product revenues. In 2019, ISO 14001 environmental management system certification has been added as a mandatory requirement for eligible suppliers. After CBD COP15 conference held in 2022, ASUS began to focus on biodiversity issues. In 2023, ASUS participated in the Taiwan Nature Positive Initiative, launched by BCSD Taiwan, to gain a deeper understanding of relevant international trends and methodologies. In line with the latest TNFD 2024 reporting framework, ASUS has implemented a biodiversity policy and expanded its efforts to identify biodiversity issues. This ensures that the environmental impacts of ASUS' operations and suppliers are effectively integrated into ASUS' sustainability management framework.



01 Governance

Board of Directors



ASUS' sustainable governance is directly overseen by the Board of Directors, with the Chairman appointing the CEO to lead sustainable management efforts. The Sustainability & Green Quality Management Center is under the responsibility of the CEO.The CEO established a Sustainable & Green Quality Management Center, in collaboration with the Procurement and Outsourcing Management Department, is responsible for overseeing the supply chain management process. This includes implementing new supplier approvals, ongoing collaborative supplier risk management, and conducting quarterly performance evaluations.

ESG Management Committee

To enhance the sustainable procurement capabilities of the supply chain management, ASUS regularly holds quarterly ESG committee meetings. These meetings encompass various business units, including the design center, certification, marketing, sales, supply chain, and procurement. The goal is to cultivate the internal procurement team's ability to identify and assess environmental, social, and governance (ESG) risks and opportunities. With respect to procurement and the supply chain, we prioritize the implementation of sustainable sourcing strategies. Our goal is to ensure that every aspect of the supply chain complies with current international laws, regulations and emerging trends. Through these quarterly ESG committee meetings, we not only strengthen the internal team's understanding and commitment to the core values of sustainable development but also encourage active participation in sustainability practices throughout the supply chain.

GreenASUS & SERASUS Committee

ASUS has established the GreenASUS and SERASUS Management Committee to implement ISO management system standards, focusing on energy and environmental aspects. The committee, appointed by senior management, oversees the Company's ISO 9000 quality management system, QC 080000 hazardous substance process management system, ISO 14001 environmental management system, and others. Regular communication of environmental, safety, health, and management system information is conducted with all colleagues.

Sustainability and Green Quality Management Center

The "Sustainability and Green Quality Management Center" is a specialized unit with a Chief Sustainability Officer who is responsible for analyzing global sustainability trends and implementing sustainable projects.

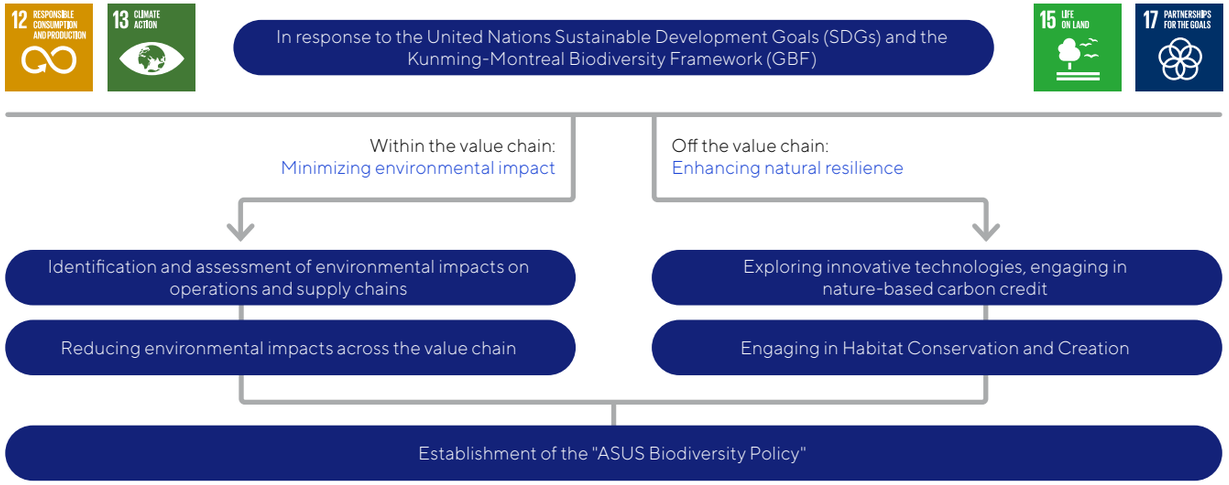
The Sustainability and Green Quality Management Center is responsible for promoting strategic sustainability through the integration of "Using Digitized Data and Scientific Management Practices to Support Sustainable Value Creation through Core Competencies.". It leverages ASUS' core capabilities and focuses on four main areas: climate action, circular economy, responsible manufacturing, and value creation. The center aims to establish a long-term vision, strategy, and goals for sustainability and integrate various action plans into the Company's operations. Responsible manufacturing focuses on sustainable supply chain management, establishing supply chain codes of conduct, promoting labor rights, responsible mineral sourcing and reducing the environmental footprint of manufacturing. Starting this year, we will conduct an inventory of our operations and suppliers to assess their dependence on and impact on nature, with a particular focus on issues related to natural and biological diversity. We will also include biodiversity as a key criterion in our supplier evaluation process and integrate it into our supply chain management.

02 Strategy

According to the Intergovernmental Panel on Climate Change (IPCC), the value of global ecosystem services is estimated at 150 trillion USD, with biodiversity contributing approximately 47% of national gross domestic product. However, several authoritative international reports and research articles have highlighted a wealth of evidence that human activities are having an impact on biodiversity. Sources of these impacts include land-use change, overdevelopment, climate change, pollution, and the introduction of invasive species. These impacts have an economic impact of approximately $5 trillion (BCG, 2021)[3]. The World Economic Forum (WEF) has released The Global Risks Report for 2024, which states that the risk to biodiversity has emerged as the third largest risk expected to occur in the next decade.

[4]According to statistics, more than 80% of Fortune 500 companies have set carbon reduction or net-zero goals, while only 6% have set goals to reduce impacts on biodiversity and promote restoration. In response to growing environmental concerns in the external capital market, ASUS has taken steps to address biodiversity issues. This includes the formulation of the ASUS Biodiversity Policy and the development of the ASUS Natural Capital Strategy Map. These initiatives are in line with the United Nations Sustainable Development Goals (SDGs) and the Kunming-Montreal Biodiversity Framework (GBF). ASUS has identified two approaches: internal management within the value chain and external actions. Internally, ASUS focuses on assessing the dependence on and impact on nature of its operations and supply chains. It incorporates management measures to reduce environmental impact. Externally, ASUS is committed to preserving and creating habitats for biodiversity, exploring innovative technologies, and participating in natural carbon credit to enhance natural resilience. The ultimate goal is to achieve harmonious coexistence with nature as outlined in the Biodiversity Policy.

ASUS Natural Capital Strategy Roadmap



3 The Biodiversity Crisis Is a Business Crisis, By Torsten Kurth, Gerd Wübbels, Adrien Portafaix, Alexander Meyer zum Felde, and Sophie Zielcke, March 2021
4 Where the world's largest companies stand on nature, McKinsey Sustainability: https://www.mckinsey.com/capabilities/sustainability/our-insights/where-the-worlds-largest-companies-stand-on-nature

Defining Dimensions of Natural Capital Impacts

ASUS recognizes two areas within its operations and supply chain that impact natural capital: natural capital depletion and raw material sourcing. Natural capital depletion refers to the significant environmental damage caused by the extraction of minerals (e.g. copper, manganese, tin, gold and tungsten) and the use of forests (e.g. for packaging materials). Mineral extraction alters the landscape, disrupts the natural environment, and has a profound impact on local biodiversity. Environmental quality impairment refers to the adverse effects on the environment resulting from ASUS's business operations. As defined by the Directorate-General of Budget, Accounting and Statistics, environmental quality impairment includes air pollution, water pollution, and solid waste.

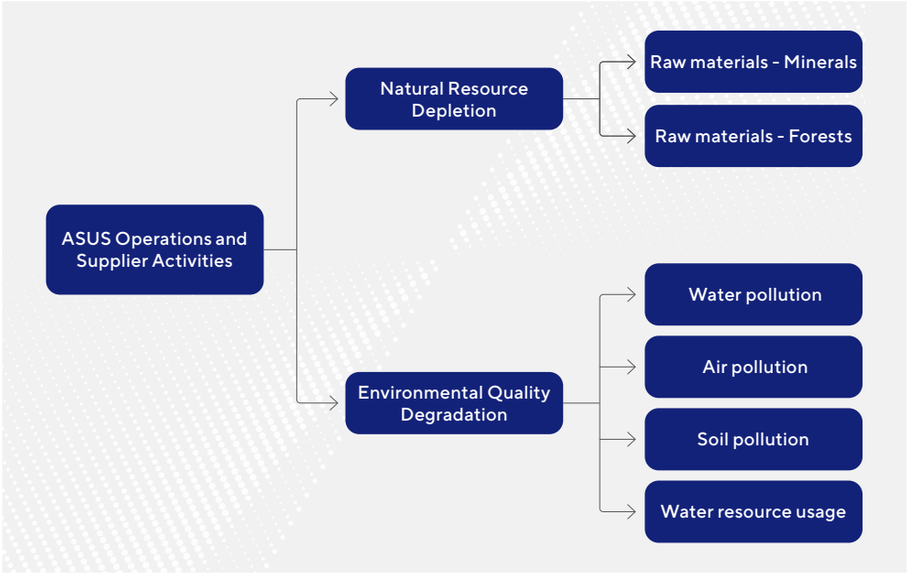
Unlike climate change, biodiversity loss will have a more severe and irreversible impact on the world. While the impact of climate change on the environment is linear, biodiversity is a complex relationship. However, climate change can be mitigated and brought back to a level of 1.5°C or less through reduction and removal. On the other hand, the relationship between biodiversity and the environment and human activities is difficult to replace. Climate change mitigation and adaptation can be implemented globally and effectively reduce global greenhouse gas concentrations. However, biodiversity is regional, so strategies to protect biodiversity cannot be standardized, but must be tailored to specific times and places to avoid further endangering the already fragile local ecological environment.

According to "The Biodiversity Imperative for Business," published by the German League for the environment and nature conservation and BCG, industrial manufacturing companies have a biodiversity pressure index of 7%. Sources of impact for these companies include land-use change, climate change, and pollution. On the other hand, the upstream supply of raw materials to manufacturing, such as logging, has a biodiversity pressure index of 11%. The main sources of impact for this sector are overexploitation of natural resources and land-use change. Mining, on the other hand, has a pressure index of 6%, with overexploitation of natural resources and land-use change also being the main sources of impact.

According to EPEAT's 2021 Resource Sustainability Report on electronic consumer products, these products contain 40 types of critical metals and other materials, including plastic and paper. For laptops, approximately 70% of the raw materials are metal minerals, while plastics account for approximately 28% and other materials, such as paper, account for approximately 2%. For desktops, about 79% of the raw materials are metal, about 20% are plastic, and about 1% are other materials. These data clearly show that metal continues to be the primary component in the raw materials of consumer electronic products, with paper materials accounting for a very small proportion.

The extraction of raw materials used in electronic consumer products has a significant impact on the local environment and ecology. For example, gold mining has a wide range of environmental impacts, including global warming caused by energy consumption. In addition, highly acidic and heavy metal-laden wastewater is discharged into rivers that supply water to local communities, causing illness or death in livestock and local residents[5]

ASUS will use past performance methodologies to assess the impact of its operations on natural capital and the supply chain. The process will prioritize evaluation of the legality of ASUS' operations and raw material selection. In addition, it will evaluate environmental externalities, including energy consumption, pollutant emissions, and the location of key product suppliers, to conduct a regional environmental impact analysis focused on biodiversity. The goal of this analysis is to identify suppliers located in key biodiversity areas and implement measures to improve the integrity of ASUS' supply chain management.



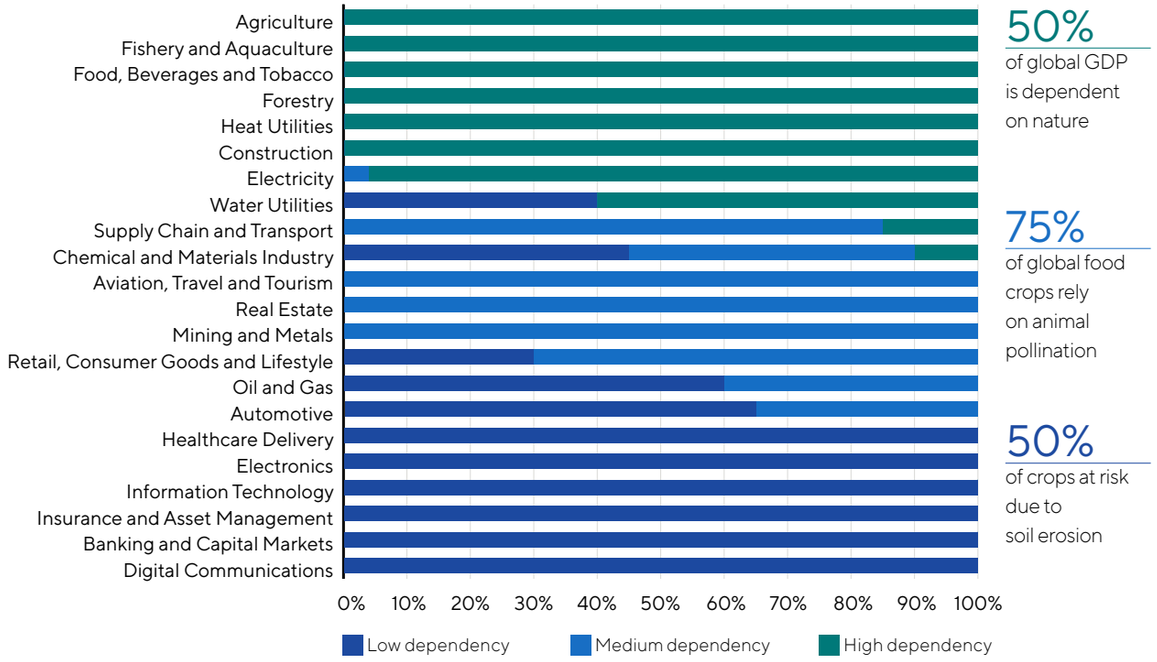
5 According to Interpol's 2022 publication, "The devastating impact of illegal gold mining in Latin America," criminal organizations have become involved in illegal gold mining due to the recent increase in the price of gold. The UNEP estimates that illegal mining generates annual criminal profits of up to 48 billion USD. These illegal gold mines are located primarily in Latin American countries such as Bolivia, Colombia, Ecuador, Panama and Peru. Illegal gold mining not only causes environmental damage, including deforestation, biodiversity loss and habitat destruction, but also releases toxic chemicals, resulting in water, air and soil pollution. Local populations are displaced by violence, highlighting the strong link between illegal mining and human rights and health issues. The impact on corporate branding should not be underestimated.

Methodology for Natural Capital Impact Assessment

According to research conducted by MSCI (Morgan Stanley Capital International), the information technology industry has a relatively low reliance on natural capital when assessing the dependency and impact of business activities. In addition, based on the analysis of its business operations using the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) database, ASUS also has a relatively low dependence on natural capital. As a result, ASUS will prioritize environmental impact analysis and management activities in accordance with resource allocation principles.

In accordance with the materiality of the issue and the analytical methodology used, ASUS continues to use the ISO 14040 Life Cycle Assessment standard, PwC's methodology for monetizing corporate environmental impacts, and the Natural Capital Protocol previously used in environmental profit and loss assessments. This approach monetizes environmental profit and loss and natural capital dependency across the entire value chain of products representing 90% of revenue: notebook computers, desktops, motherboards, monitors, and mobile phones. The calculation of environmental profit and loss will contribute to a deeper understanding of external costs of four environmental indicators: greenhouse gas emissions, water resource, water pollution, and solid waste.

MSCI ESG Research, November 2023; World Economic Forum and PwC. 2020. "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy."



50%
of global GDP is dependent on nature

75%
of global food crops rely on animal pollination

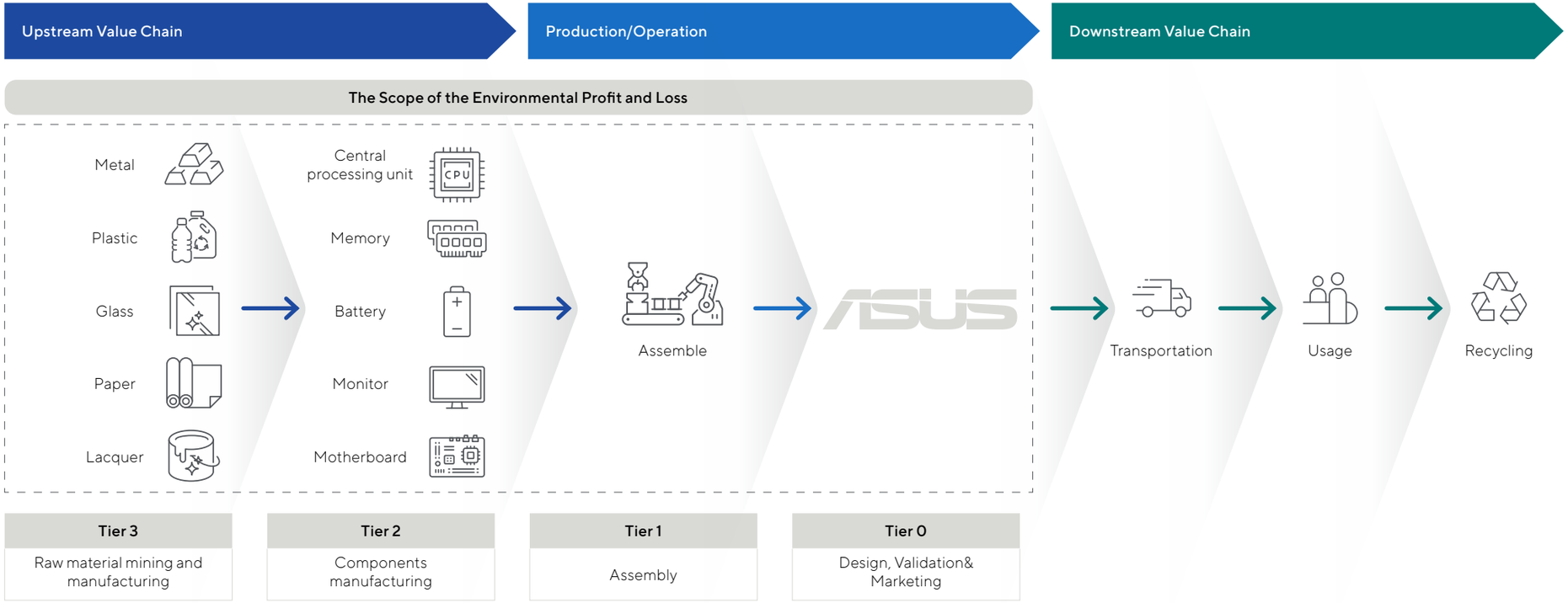
50%
of crops at risk due to soil erosion

Environmental Profit and Loss Assessment

Boundary and Scope

According to the definition of Product Category Rules (PCR), ASUS defines boundary and scope that cover 90% of its products, major components, and supply chains:

- **Value chain and geographical boundary:** Tier 3 Raw Materials, Tier 2 Components, Tier 1 Assembly, Tier 0 ASUS Operations: Design,Validation & Marketing
- **Main components:** CPU, memory, display, GPU, resistor, capacitor, host board, connector, mechanism, hard drive, cable, battery, power supply, packaging, keyboard
- **Indicators of environmental impacts:** greenhouse gases, water consumption, water pollution, solid waste

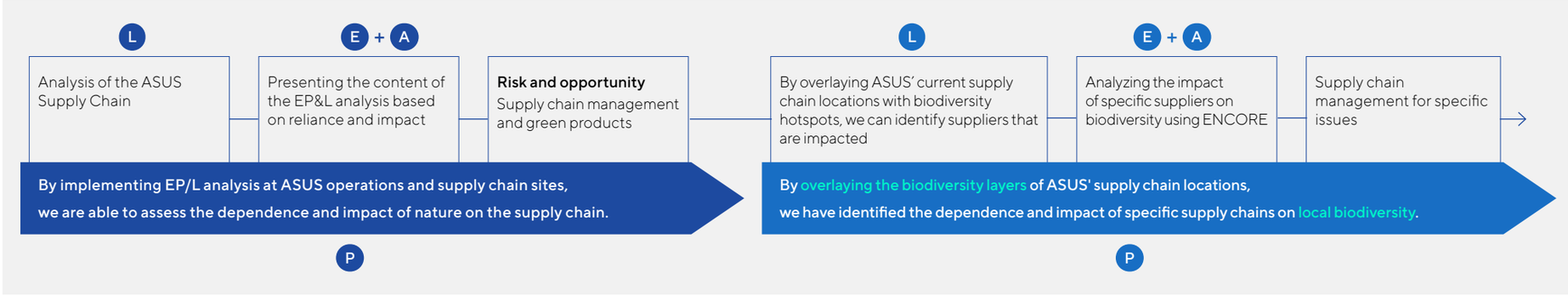


In the 2023 environmental impact assessment, water pollution accounted for the highest percentage at 63.77%, followed by greenhouse gas emissions at 34.99%. Starting in 2019, the trend in environmental losses and gains improves slightly over the years, with an increase of 10.80% in 2023 compared to the previous year. In response to the increasing significance of biodiversity issues in recent years, a comprehensive analysis of four environmental indicators has led to the identification of water pollution as the primary focus for this year's biodiversity assessment.

EP&L		EP&L +Biodiversity		
	Impact factors	Environmental driving factors	Natural capital	Possible consequences and impact
ASUS Operational Activities	Greenhouse gases	Disease	Species	Water pollution leads to the spread of animal and plant diseases, affecting economic activity.
	Water pollution	Habitat restoration	Habitat change	The degradation of habitats and the loss of plant species have reduced the availability of plants for restoration purposes.
	Water resource usage		Minerals	The change in water flow affects the mineral composition of the soil.
	Solid waste		Species	Changes in vegetation can potentially degrade service quality or lead to loss of service.
			Water	The modification of freshwater supply and resources has changed the dynamics of habitats, leading to a decrease in the stability of blue carbon habitats.
		Weather conditions	Atmosphere	The level of air pollution and vegetation absorption is influenced by climate conditions. Climate change has the potential to impact vegetation. Droughts can result in disruptions to water supply.
		Pollution	Atmosphere	The toxicity of heavy metals can affect microbial survival
				Industrial wastewater leads to a deterioration in water quality

To further understand the impact of ASUS' water pollution on biodiversity, ASUS implemented the TNFD reporting framework methodology called "LEAP" in the second phase. This methodology focuses on positioning, evaluating, assessing, and preparing operational activities to determine whether ASUS' operational sites and global supply chain are located in biodiversity hotspots or internationally/nationally defined important habitats. By analyzing the factors of environmental dependency and the impacts caused by its industrial activities in a database, as well as identifying the scale and scope of the impacts, the company can assess natural risks and opportunities. Finally, these risks and opportunities are integrated into the operational management process to increase ASUS' resilience to environmental changes.

Process of the Analysis



03 LEAP Methodology Pilot

Assessment of Natural Capital Depletion

Conflict minerals

Electronic products use various metal materials with significant functions. Tantalum, tin, tungsten, and gold are materials necessary for the functions of electronic products and can be used to produce resistor capacitor, CPU, hard drives, memory, motherboards, and connectors. Cobalt is a critical material for battery production, and according to the study on the EU's Critical Raw Materials List, one third of the world's cobalt comes from the Democratic Republic of the Congo and neighboring countries, where there is a risk of illegal operations. In 2019, the RMI organization classified cobalt as a category 5th managed mineral. ASUS has developed a 5-year plan to transition qualified smelters, with suppliers required to increase the proportion of qualified smelters each year. The goal is to source 100% of cobalt from qualified smelters by 2025.

The United States passed the "Dodd-Frank Wall Street Reform and Consumer Protection Act" in 2010. Section 1502 of the Act requires the U.S. Securities and Exchange Commission to enact legislation on "conflict minerals" to disclose whether the minerals used in the production process are sourced from the Democratic Republic of the Congo (DRC) and adjoining countries that use forced labor and inhumane treatment of labor. The Responsible Minerals Initiative (RMI) research discovered that the rebel groups in the aforementioned regions use forced labor, child labor, and other illegal means to mine tantalum, tin, tungsten, and gold, and sell them in exchange for weapons, thereby causing regional instability. These four types of minerals, acquired through illegal means, are known as conflict minerals within the international community. The analysis showed that ASUS collaborated with 463 smelters in 2023. The geographical distribution of these smelters is as follows: 62.5% in Asia, 15.8% in the Americas, 15.8% in Europe, 5.3% in Africa, and 0.7% in Australia. ASUS has initiated an investigation of the smelters in its supply chain in accordance with the Organization for Economic Cooperation and Development (OECD) due diligence procedures. By establishing management mechanisms, identifying and assessing risks, formulating risk improvement measures, conducting independent third-party audits, and disclosing management results, ASUS ensures the effective implementation of conflict minerals management. Since 2018, ASUS has sourced 100% of its tantalum, tin, tungsten, and gold minerals from certified smelters to prevent issues such as labor exploitation, forced labor, child labor, and environmental degradation caused by illegal operations.

Packaging

According to a 2016 research report by the World Economic Forum and the Ellen MacArthur Foundation, the majority of packaging is used only once, and only 5% of the resulting plastic waste is effectively recycled. As a result, since 2018, countries around the world have been implementing policies to reduce plastic use and achieve the goal of plastic circularity. Since 2019, ASUS has replaced PE bags with PET non-woven fabric, and increased the use of recycled paper pulp in packaging materials to 90%, with approximately 82% of recycled paper suppliers located in mainland China and 18% from other regions. In 2023, ASUS used approximately 23,000 tonnes of recycled paper in its main products. Since 2020, ASUS has been using Forest Stewardship Council (FSC) certified paper to conserve resources and protect the environment. To date, they have used approximately 400 tonnes. Not only do they use over 90% recycled paper in their key products, but they are also gradually introducing more environmentally friendly paper materials.

Assessment of Environmental Degradation

Environmental Footprint Assessment

Operation Centers

Taipei headquarters, Luzhu factory

Supply Chain

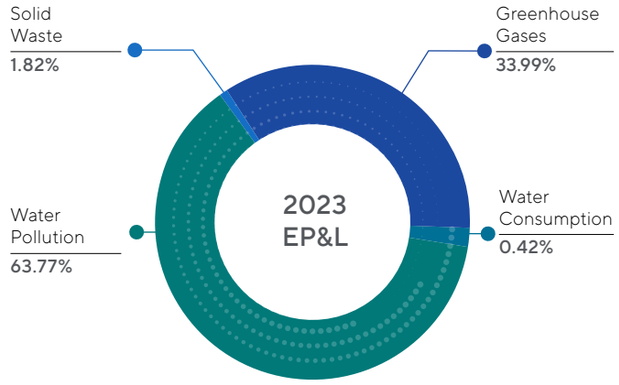
ASUS selected its operational bases for evaluation, including the Taipei headquarters and the Luzhu factory. The supply chain boundaries were defined based on procurement volume and product categories, covering 90% of revenue-generating key components and the supply chain. The majority of suppliers, 99%, were located in Asia (China, Taiwan, Malaysia, Thailand, Japan, South Korea), while the remaining 1% were located globally.

To effectively mitigate supply chain management risks, ASUS follows a three-step process: new supplier identification, ongoing risk management, and performance evaluation. The target includes assembly facility, part suppliers, and component suppliers. All suppliers are required to participate in the annual environmental footprint assessment to understand the negative environmental impacts of the ASUS supply chain, such as greenhouse gas emissions, water footprint, and solid waste. This is necessary to develop appropriate management measures.

Since 2018, ASUS has been conducting an environmental profit and loss analysis to evaluate the impact of its operating centers and supply chain on environmental indicators, including water pollution, greenhouse gas emissions, solid waste, and water resource usage. In the 2023 environmental profit and loss assessment, water pollution accounted for the highest percentage at 63.77%, followed by greenhouse gas emissions at 33.99%. Starting in 2019, the trend in environmental losses and gains improves slightly over the years, with an increase of 10.80% in 2023 compared to the previous year.

Unit: million US dollars

	2019	2020	2021	2022	2023
Water pollution	402.52	431.92	412.72	392.09	441.67
Greenhouse gas	167.68	199.60	219.80	217.60	235.41
Solid waste	6.27	9.11	12.00	12.69	12.63
Water resource usage	1.77	2.15	2.70	2.70	2.89



After conducting an environmental cost-benefit analysis, ASUS has developed a management action plan based on the analysis of environmental performance indicators. This plan will be integrated into the annual performance review and management evaluation.

Water Pollution

The analysis results for 2023 show that the external cost of water pollution is 441.67 million USD, accounting for 63.77% of the total external environmental costs. This is an increase of 12.65% compared to the previous year. The main sources of wastewater are raw material extraction and discharge from the motherboard manufacturing process. In 2023, there is a rapid growth in the demand for AI boards, with shipments increasing 2.9 times compared to the previous year.

Action plan

- ISO 14001 environmental management system certification is a necessary requirement for qualified suppliers. This includes managing their upstream suppliers and regulating their wastewater discharge to ensure compliance.
- The motherboard supplier submits an annual report on wastewater discharge testing. Suppliers that do not meet the standards are given a deadline to make improvements and are included on the list for annual on-site audits.

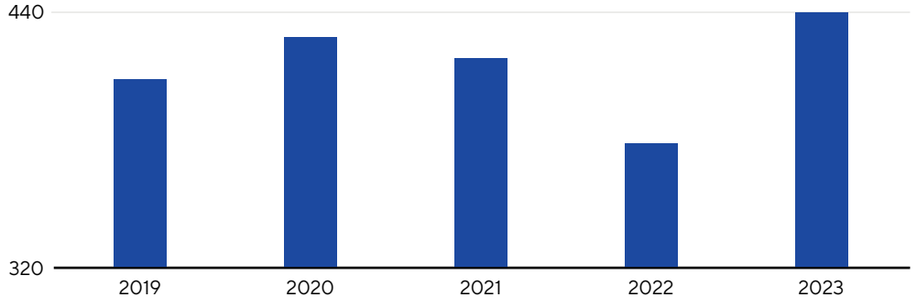
2023 performance

- 100% of new and key suppliers are ISO 14001 certified, and all wastewater test reports from motherboard suppliers are compliant.

* Based on water pollution, considered the most important indicator of environmental impact, subsequent analysis will prioritize key sites for biodiversity.

Water pollution in 2023 External costs	Difference compared to 2022	
441.67 million USD	Increase of 49.58 million USD.	Increase by 12.65%.

Unit: million US dollars



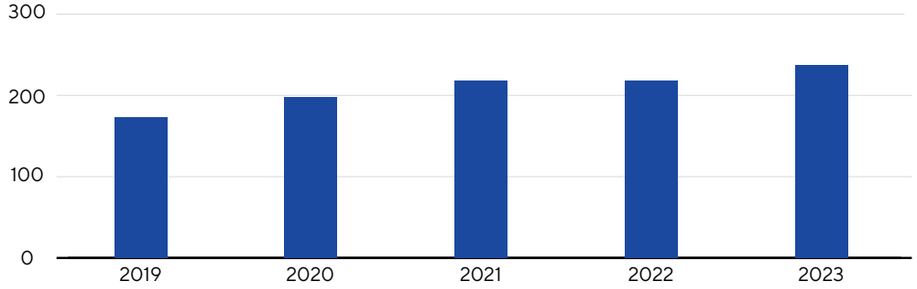
Greenhouse Gases

The analysis results for 2023 show that the environmental external cost of greenhouse gas is 235.41 million USD, accounting for 33.99% of the total external environmental costs. This is an increase of 8.18% compared to the previous year. The main sources of emissions are the growing demand for energy resources in the mining and manufacturing of raw materials, the indirect emissions resulting from the use of electricity in the assembly of components and products, and the increased demand for electricity in the production of AI boards.

As the second largest environmental impact indicator, ASUS manages risks and opportunities related to greenhouse gases. For more detailed information, please refer to the 2023 ASUS Climate-related Financial Disclosure Report.

Greenhouse gas environment in 2023 External costs	Difference compared to 2022	
235.41 million USD	Increase by 17.81 million USD.	Increase by 8.18%.

Unit: million US dollars



Solid Waste

The analysis results for 2023 showed that the environmental external cost of waste is 12.63 million USD, accounting for 1.82% of the total external environmental costs. This is a decrease of 5.99% compared to the previous year. The main reason is that ASUS has increased the amount of purchases from suppliers, mainly due to the waste generated during the manufacturing process at the assembly facility.

Action plan

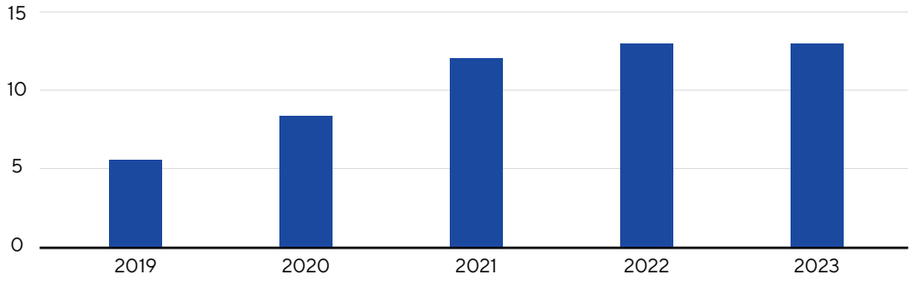
- ISO 14001 environmental management system certification is a necessary requirement for qualified suppliers

2023 performance

- 100% of our new suppliers have ISO 14001 certification

Solid waste in 2023 External costs	Difference compared to 2022	
12.63 million USD	Decrease by 0.06 million USD	Decrease by 5.99%.

Unit: million US dollars



Water Resource Usage

The analysis results for 2023 show that the environmental external cost of water resources is 2.89 million USD, accounting for 0.42% of the total external environmental costs. This is an increase of 7.18% compared to the previous year. The main source of water is from domestic use by employees

Action plan

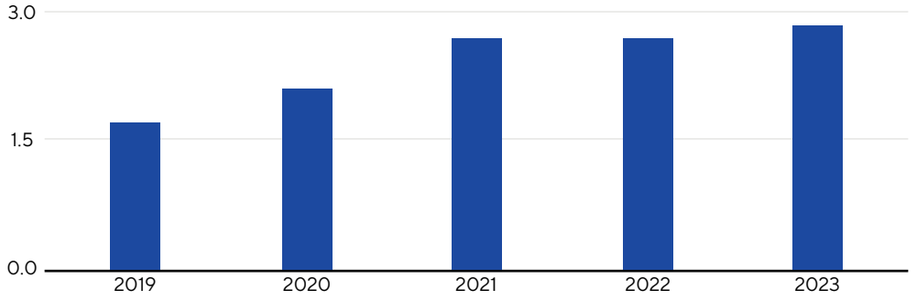
- According to the WRI Aqueduct global water risk mapping tool, ASUS has determined that its own operations and value chain are not located in high-risk areas and are not part of water-intensive industries. Considering the global pressure of water resource depletion and corporate social responsibility, ASUS is committed to promoting water conservation measures in its own operations and requiring the supply chain to do the same.
- ISO 14001 environmental management system certification is established as a necessary requirement for qualified suppliers

2023 performance

- ASUS has obtained the ISO 14001 environmental management certification from all of its suppliers
- Key supply chain sets water reduction targets and includes them in ISO 14001 environmental management objectives for performance tracking

Water resources in 2023 External costs	Difference compared to 2022	
2.89 million USD	Increase of 0.19 million USD	Increase by 7.18%.

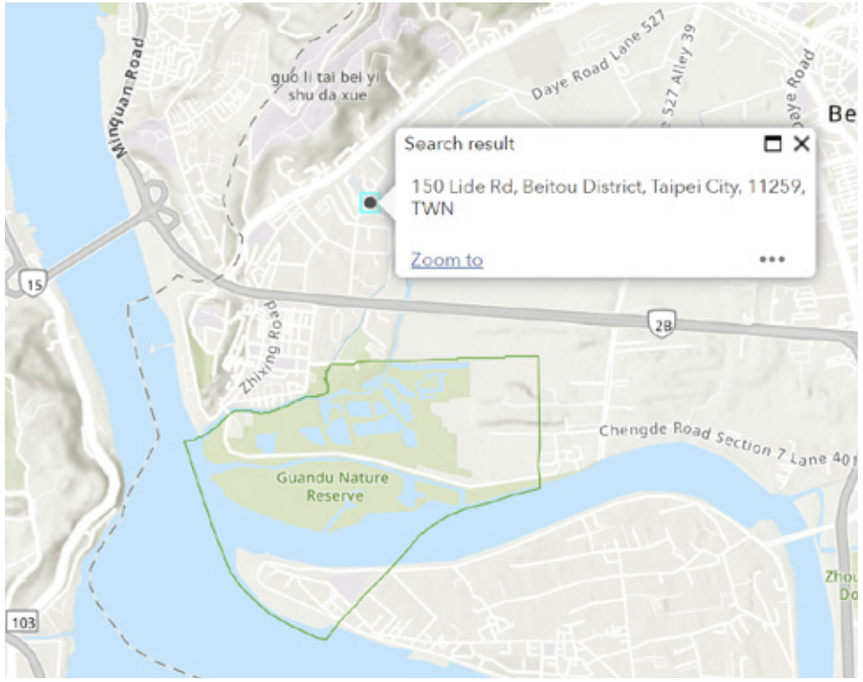
Unit: million US dollars



Assessment of the Impact of Operational Centers and Supply Chains on Biodiversity

To address water pollution, which is a major environmental concern, ASUS will be used as a case study in the first year. This will allow a deeper examination of the impact of ASUS' operations and supply chain on biodiversity issues using the LEAP methodology. The operational sites and supply chain (excluding industrial park sites as a priority) were analyzed using the Integrated Biodiversity Assessment Tool (IBAT)[6], Key Biodiversity Areas (KBA) and other website databases. Based on the Key biodiversity areas[7] database, the operational sites are not located in internationally recognized biodiversity hotspots and therefore do not directly affect the key species in this area.

Three suppliers in China were identified as having facilities located very close to biodiversity hotspots in the supply chain. ASUS uses one of its facilities as a case study for this assessment:



6 The database was developed by the International Union for Conservation of Nature (IUCN), UNEP-WCMC, the World Wildlife Fund (WWF) and Conservation International.

7 Managed by the KBA Partnership on behalf of BirdLife International, other partners include the Garfield Weston Foundation, the Bezos Earth Fund, the Max Family Charitable Trust and the Royal Society for the Protection of Birds.

8 ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) was developed primarily through a collaboration between Global Canopy, UNEP FI and the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC).

Impact of Supply Chain Biodiversity and Case Studies on Negotiations

- After identification, it was determined that Company A is located adjacent to a significant biodiversity area in the Min River Basin in China (as shown on the map to the right). The nearby Tianma Mountain Ecological Park is the potential ecosystem that could be impacted. The estimated impact area covers a total of 26.49 hectares within the park.
- According to the local ecological statistics report, the Min River Estuary Wetland is expected to be home to a first-class national protected animal in China: the Oriental stork. The park's vegetation is expected to consist of various species, including sapindus, Chinese wingnut, and Fujian cherry. The analysis focuses on the impact factor of water pollution, with additional monitoring of industrial activities in the ENCORE[8] database to assess their potential impact on the local ecosystem. The environmental driving factors most likely to cause habitat changes and consequently affect nearby natural capital include habitats, soil minerals, local species, and water. These changes in natural capital have the potential to affect the local ecosystem, potentially reducing the quality of ecosystem services or causing changes in local water quality.
- After the on-site audit in 2023, the Company has provided annual inspection reports and the test results have been satisfactory. The discharged wastewater is treated directly through the government pipeline.

04 Metrics and Targets

Natural Capital Management at Operational Center

- Water pollution and water stewardship: While our operations are not located in internationally recognized biodiversity hotspots, we will comply with government regulations for wastewater treatment. In addition, we have set a water conservation target to reduce water consumption by 1% per year.
- ASUS solid waste is divided into two categories: general industrial waste and hazardous industrial waste. The main sources of hazardous industrial waste are research and development materials and scrap. These materials are carefully identified, classified and managed before being sent to qualified recyclers for reuse. General industrial waste refers to waste other than the above, consisting primarily of employee household waste. Materials that can be recycled and reused are identified and separated, while the non-recyclable portion is incinerated or buried.
- Since 2017, ASUS has participated in the Environmental Protection Agency's "Coastal Cleanup and Adoption Program." As part of this program, ASUS has adopted a 500-meter stretch of coastline in the Waziwei Nature Reserve in New Taipei City, demonstrating its commitment to environmental protection. The area is located next to the Mangrove Nature Reserve, which is home to valuable wetland ecology and serves as an important habitat for numerous migratory birds, aquatic plants, and animals.

Operational site management performance

1. The main source of wastewater in the office is general wastewater. ASUS has installed an oil trap and conducts regular inspections to ensure that water quality meets government discharge standards. The treated wastewater is then discharged into the designated wastewater treatment system in accordance with government regulations. In 2022, the operational headquarters, known as the ASUS LiGong Building, will receive ISO 46001 water resource efficiency management system certification.
2. Since 2015, ASUS has implemented a Zero Waste to Landfill program at its corporate headquarters. This program follows the UL Zero Waste to Landfill (ULECVP 2799) standard, which tracks waste streams using measurable indicators. It ensures that waste is effectively recycled, reused and transformed through appropriate processes rather than simply buried.
3. Environmental conservation: Three beach cleaning activities were conducted, resulting in the removal of approximately 286 kg of marine debris. A total of 235 volunteers participated in these activities.

Natural Capital Management in the Supply Chain

Supply chain management objectives

- ISO 14001 environmental management system certification
- SA8000 corporate social responsibility certification
- 100% of tantalum, tin, gold, tungsten and cobalt sourced from qualified smelters
- ISO 45001 occupational health and safety management system certification
- RBA VAP third-party audit

ASUS supply chain management practices

1. Biodiversity issues are integrated into the supply chain code of conduct. ASUS suppliers are required to consider the local environmental impact of their operations and establish a biodiversity policy.
2. Supply chain transparency: Suppliers must provide detailed manufacturing processes, manufacturing operations management reports, and raw material sourcing information.
3. Assessment and review: Conduct regular environmental audits of suppliers to ensure compliance with the ASUS biodiversity policy.
4. Priority selection criteria: It is important to prioritize the selection of packaging suppliers that have obtained environmental certifications such as FSC and PEFC.
5. To obtain ISO 46001 water resource efficiency management system or establish water recycling goals
6. Quarterly provide ASUS water conservation performance data, and annually provide compliance wastewater testing reports
7. The annual on-site audit focusing on suppliers

ASUS supply chain management performance

Waste pollution management

1. Wastewater discharge GB8978-1996: "Integrated Wastewater Discharge Standards"
2. The factory and operational sites employ water-saving devices and enforce water conservation policies
3. The supplier has developed an "Energy and Resource Management Policy" that strictly regulates energy and resource requirements. This procedure ensures the effective allocation of energy, water and other raw materials to the various stages of production and operation.

Environmental conservation

Participating in community environmental activities (employee volunteers - trash collection in mountainous areas)

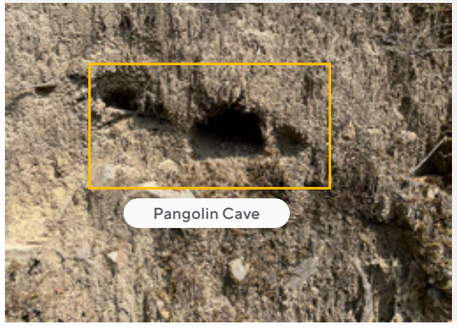
05 ASUS Biodiversity Action

In order to implement ASUS's actions to reduce environmental impact, ASUS will comply with the Forestry and Nature Conservation Agency's "Corporate Group Participation in Natural Carbon Sink and Biodiversity Matching Platform" policy starting in 2024. ASUS will work with the Kuan-Shu Education Foundation, which has a long history of environmental advocacy. The Chenglong Wetlands and Daxueshan areas are expected to be the locations for the implementation of this biodiversity project. This initiative aims to take practical steps in line with the "Kunming-Montreal Global Biodiversity Framework" to gradually reduce the negative impact on biodiversity.

Medium-altitude Pangolin Habitat Improvement and Conservation Project in Daxueshan

Project

The forest farmers who cultivate the state-owned land in the Daxueshan area use a significant amount of agricultural pesticides to maintain stable crop production for fruit tree cultivation. Unfortunately, this practice has led to the destruction of the surrounding habitat. Since 2017, the Kuan-Shu Education Foundation has been invited by the Forestry and Nature Conservation Agency Bureau to cooperate in promoting grass cultivation on state-owned forest leases through friendly agricultural guidance. After conducting an on-site survey, the pilot area for the project was selected as Yucai Lane, located in the northwest of Heping District, Taichung City, on Daxueshan. The farmers accidentally discovered pangolin tracks in their orchard. They found that the habitat of these pangolins differs from previous research. However, there is currently no research on pangolin monitoring in the middle elevations. Therefore, Dr. Sun Ching-Min from the National Pingtung University of Science and Technology was invited to initiate a research project. The goal of this project is to understand whether friendly farming practices can improve the soil conditions in the area and increase the availability of food resources for pangolins, which serve as an indicator species. In the future, ASUS will continue to explore innovative technologies to facilitate biometric monitoring and exploration.



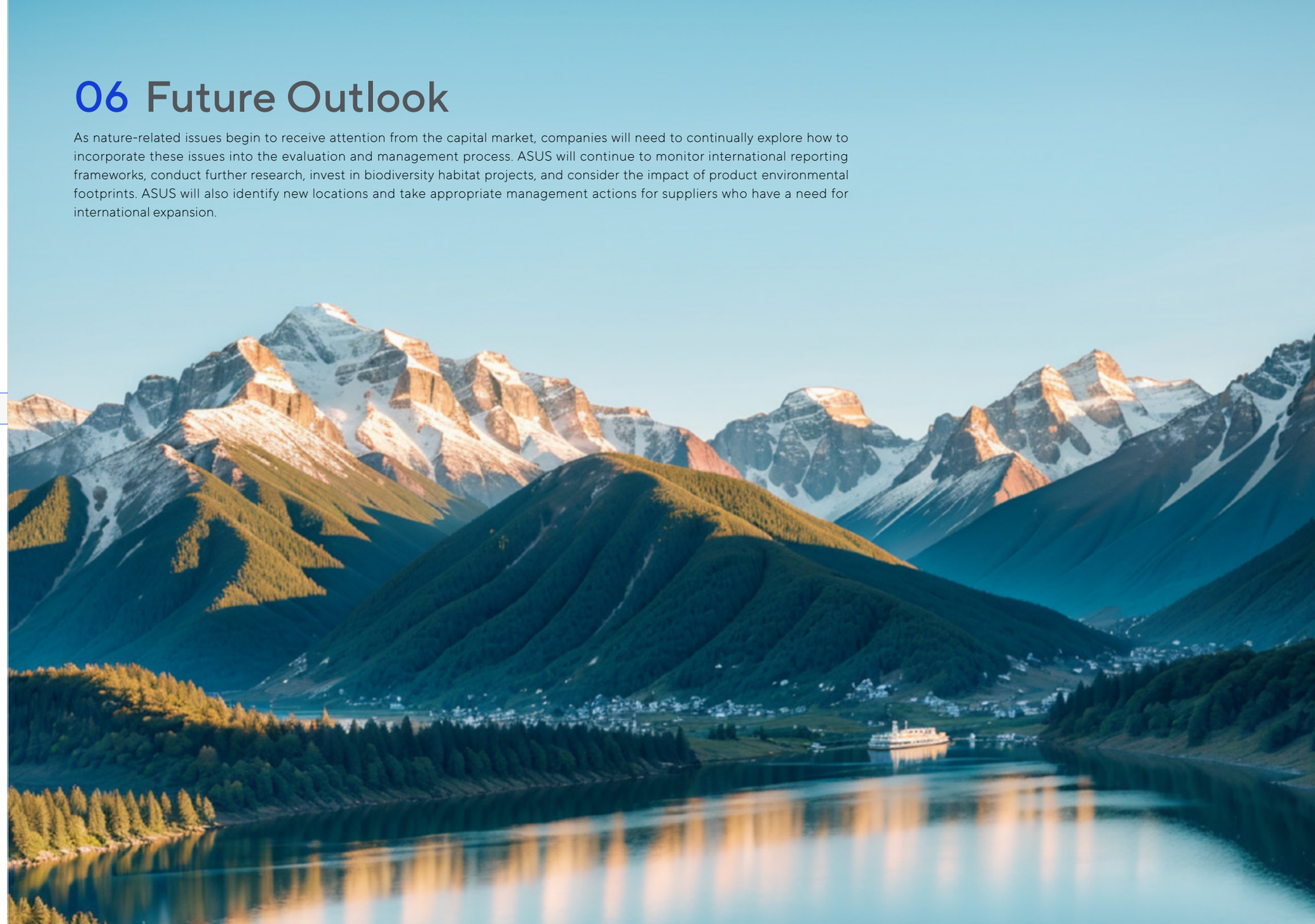
Chenglong Wetland Biodiversity Habitat Creation Project

Project

Chenglong Wetland was originally farmland, but it has undergone significant changes over time. The area has experienced subsidence due to its low elevation and excessive groundwater extraction. In addition, seawater intrusion caused by typhoons has turned the wetland into a wasteland. The affected residents have engaged in continuous protests to voice their concerns about the impact on their livelihood. In 2005, the Forestry and Nature Conservation Agency introduced the concept of "ecological fallow" subsidies. This program provided subsidies to farmers who leased agricultural land that had become fallow. The subsidies not only supported the farmers, but also facilitated the ongoing ecological succession and natural development of the local area. In 2009, the Forestry and Nature Conservation Agency commissioned the Kuan-Shu Education Foundation to carry out the "Chenglong Wetland Community Learning and Participation Project." The Kuan-Shu Education Foundation, through its " Three Generations of Chenglong Wetlands " program, focuses on the objective of "learning from the wetlands" and implements long-term community empowerment and environmental education. Through observation, the Kuan-Shu Education Foundation has found that wetlands provide favorable conditions for diverse biological survival. They have also identified unique fish species such as the Oryzias latipes. As a result, they intend to involve National Chiayi University in a project to build a biodiversity habitat. The goal is to create a more suitable environment for the survival and conservation of local species. ASUS will also conduct research projects on natural carbon sinks to support future scientific reduction efforts.

06 Future Outlook

As nature-related issues begin to receive attention from the capital market, companies will need to continually explore how to incorporate these issues into the evaluation and management process. ASUS will continue to monitor international reporting frameworks, conduct further research, invest in biodiversity habitat projects, and consider the impact of product environmental footprints. ASUS will also identify new locations and take appropriate management actions for suppliers who have a need for international expansion.

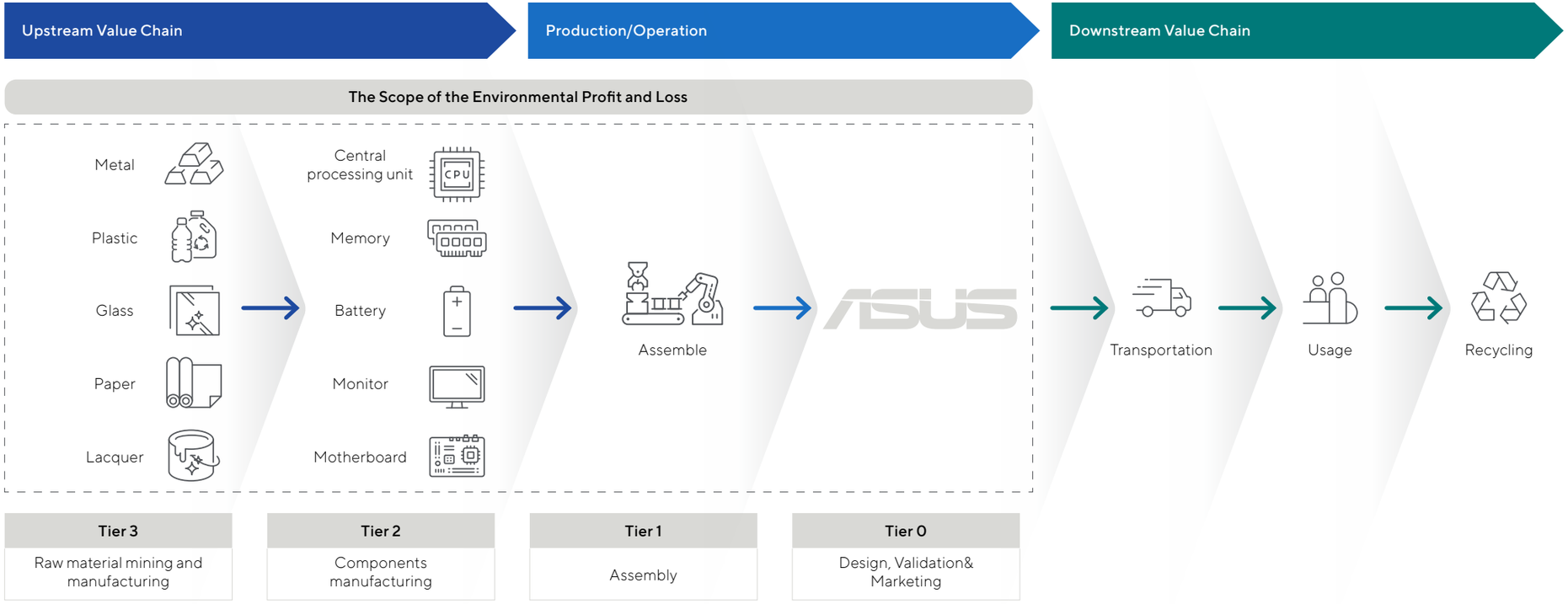


Attachment: Environmental Profit and Loss Methodology

Boundary and Scope

According to ASUS' definition of Product Category Rules (PCR), the boundaries and scope cover 90% of the main components and supply chain of revenue-generating products.

- **Value chain and geographic boundaries:** Tier 3 raw materials, Tier 2 components, Tier 1 contract manufacturers for assembly, and Tier 0 ASUS operations including design, verification, and marketing.
- **Main components:** CPU, memory, display, GPU, resistors, capacitors, motherboard, connectors, mechanical parts, hard drive, cables, battery, power supply, packaging, keyboard.
- **Environmental impact indicators:** Greenhouse gas emissions, water resources, waste management, and water pollution



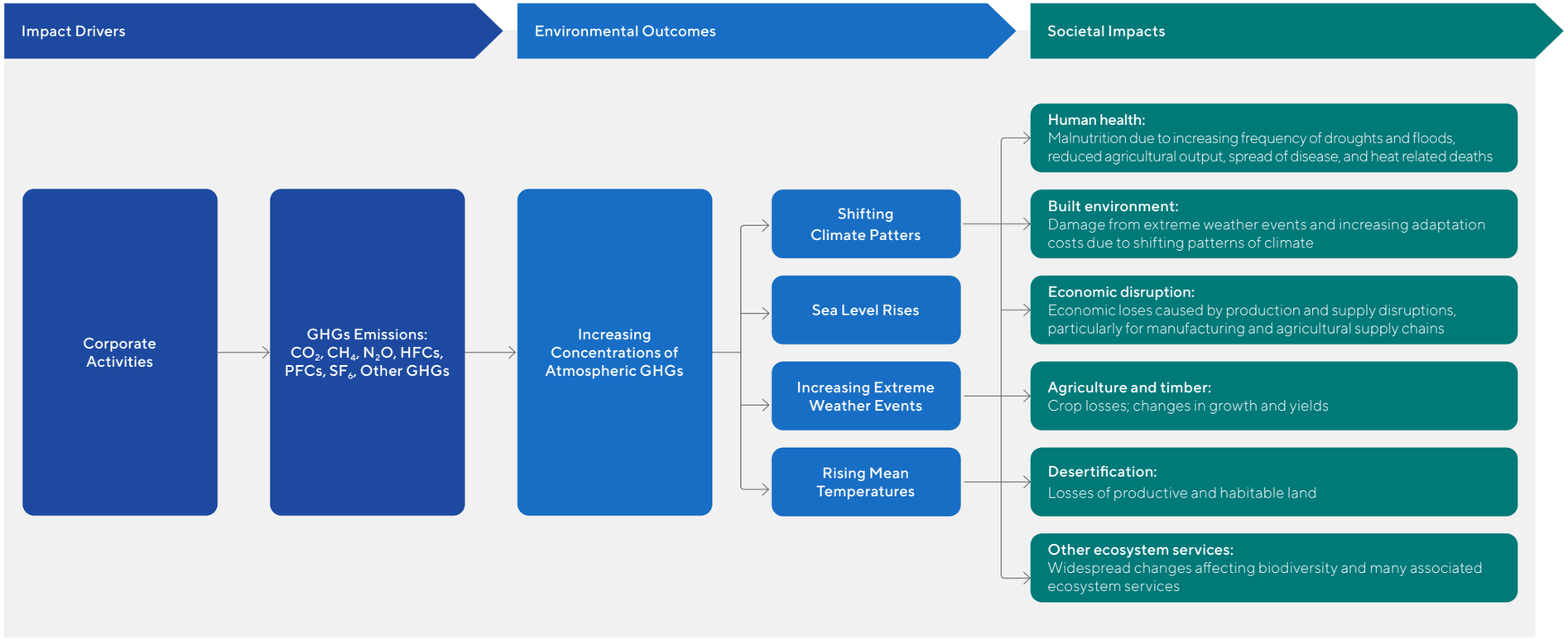
Draw Impact Path

ASUS evaluates the environmental impact of its operations and upstream value chain using the Impact Pathway. It conducts environmental impact assessments of its operations and upstream supply chain worldwide, using life cycle assessment and environmental impact coefficient methodologies.

Greenhouse Gases

Climate change is a global issue because greenhouse gases circulate in the atmosphere, and greenhouse gas emissions from one country can affect other regions of the world. For example, countries such as Tuvalu and the Solomon Islands in the Pacific, despite having low carbon emissions, face significant threats from rising sea levels due to climate change. As a result, the environmental changes, social impacts, and economic losses caused by climate change cannot be solved by any one nation alone. The monetization of greenhouse gas impacts is a global concept from the perspective of the environmental impact of greenhouse gas emissions and the social consequences of climate change.

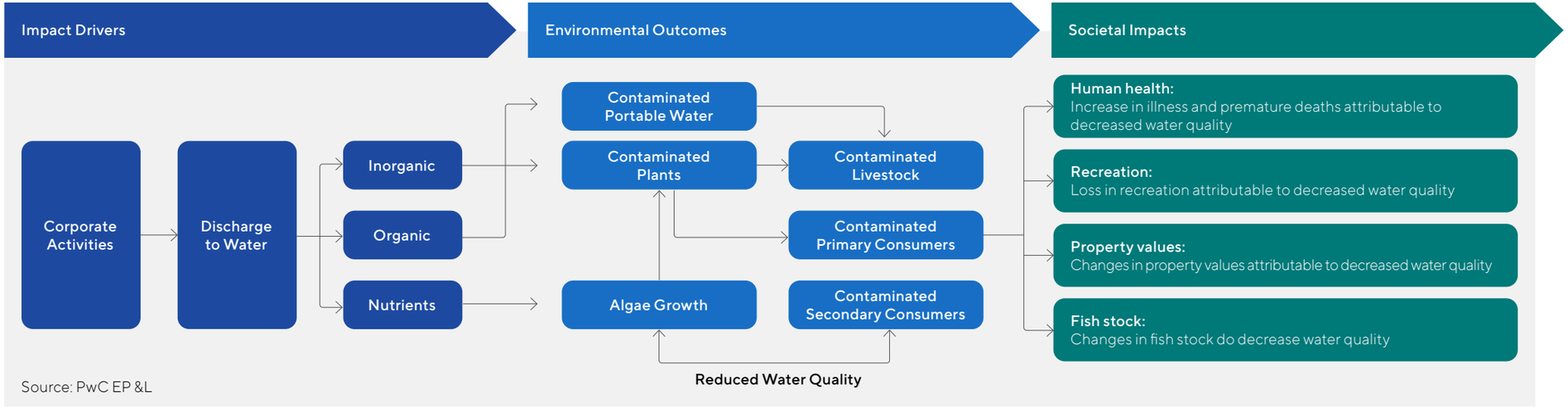
ASUS complies to the Technical Report on Social Costs of Carbon Emissions published by the U.S. Environmental Protection Agency. This report estimates the societal costs linked to each metric ton of carbon emissions.



Water Pollution

When considering the discharge of wastewater into water bodies, it is important to consider the presence of toxic substances and nutrients. Toxic substances can pose risks to human health, while nutrients can lead to eutrophication and affect the ecosystem. Toxic contaminants in water include heavy metals, chemicals, and dioxins, which can affect human health through direct consumption of contaminated water sources or indirect consumption of contaminated fish.

ASUS uses the USEtox LCA impact assessment method to analyze the dose-response of various pollutants. This analysis helps to determine the relative risk characterization factors and Disability-Adjusted Life Years (DALYs) values for water pollutants. In addition, the external costs of human health losses caused by wastewater pollution at each site are estimated based on the Value of Statistical Life (VSL).

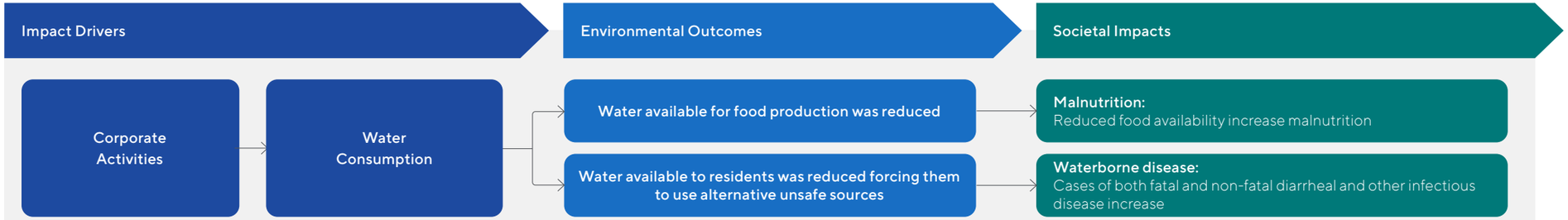


Source: PwC EP &L

Water Consumption

Companies consume water resources in the process of production, manufacturing, and operations. However, water resources are limited and other production activities, such as agriculture, also rely on water. Water scarcity is a constraint on agricultural development. As a result, corporate water use can indirectly displace agricultural water, resulting in inadequate food production and impacting local food supplies. This, in turn, can lead to malnutrition among the local population. On the other hand, waterborne diseases can also be caused by a lack of clean drinking water for the population.

ASUS uses the LCA impact assessment method proposed by Pster et al. in 2009 to calculate the Disability-Adjusted Life Years (DALYs) resulting from malnutrition. DALYs due to waterborne diseases are calculated using the LCA model developed by Motoshita et al. in 2010. The external costs associated with human health losses resulting from the consumption of water resources at each site are then estimated based on the Value of Statistical Life (VSL).

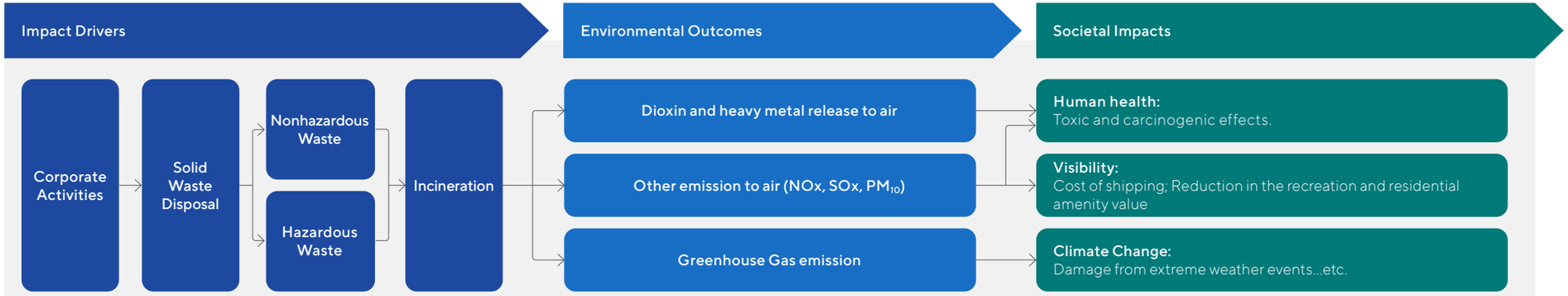


Source: PwC EP &L

Solid Waste

One method of waste disposal is incineration. Incineration produces a variety of air pollutants, including dioxins, heavy metals (such as arsenic, cadmium, chromium, mercury, nickel, and lead), and traditional air pollutants such as nitrogen oxides (NO_x), sulfur oxides (SO_x), and particulate matter (PM) such as PM_{10} and $PM_{2.5}$. Inhalation of these air pollutants results in significant societal costs in terms of respiratory diseases such as asthma, premature death from cardiovascular disease, and lung disease.

ASUS uses the LCA USEtox and LCA ReCipe (Hierarchist version) Endpoint impact assessment methods to analyze the dose response of various pollutants. This analysis helps determine the relative risk characterization factors and DALY values for air pollutants and cancer.



Source: PwC EP &L

Obtain Activity Data

The data on environmental activities in the supply chain are categorized as primary data and secondary data. Primary data refers to the actual data collected from on-site activities, while secondary data refers to the data obtained from the industry's environmental database:

- "Tier 0" ASUS operations and Tier 1 contract factory assembly stages are based on primary data. ASUS operations include energy consumption, water resource consumption, on-site inspection data for wastewater and waste disposal in office areas, laboratories, and warehouses. Contract factory assembly includes energy consumption, water resource consumption, and on-site inspection data for wastewater and waste disposal in production line processes and personnel activities
- Tier 2 component manufacturing and Tier 3 raw material extraction use secondary data from the Ecoinvent database of the SimaPro life cycle assessment software.

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