2024 KT&G

TNFD PILOT REPORT

KT&G

ABOUT THIS REPORT

Report Overview

KT&G has published the TNFD Pilot Report to practice responsible management for sustainable growth and the conservation of natural capital and biodiversity. This report was prepared to transparently disclose to key stakeholders the impact of KT&G's business activities on nature and ecosystems, the company's dependence on natural capital, as well as its key strategies, activities, achievements, and future plans for the protection of natural capital and biodiversity. We manage risks and opportunities related to the protection of natural capital and biodiversity through information disclosure aligned with the final recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD).

Reporting Period

The quantitative data in this KT&G TNFD Pilot Report covers the most recent three years (2022–2024). In the case of significant activities and achievements, information up to the first half of 2025 prior to the publication of this report has been included to ensure timely disclosure.

Reporting Scope

The scope of data collection regarding natural capital and biodiversity in this KT&G TNFD Pilot Report encompasses KT&G's domestic business sites—including the Head Office, R&D HQ, manufacturing sites (Daejeon Plant, Gwangju Plant, Yeongju Plant, Cheonan Plant, and Gimcheon Plant), sales sites across the country—as well as overseas manufacturing sites (Russia, Türkiye, and Indonesia). It also includes the domestic manufacturing sites and supply chain of Korea Ginseng Corporation (KGC). Additionally, upstream leaf tobacco operations and domestic ginseng farms are incorporated into the analysis scope, with separate annotations provided in cases where reporting boundaries differ.

Reporting Standards

This report has been prepared in accordance with the TNFD Recommendations 2024, a disclosure framework for natural capital and biodiversity. In addition to the TNFD recommendations, disclosure standards such as the Draft Sector Guidance – Food and Agriculture and Guidance on Scenario Analysis have also been considered.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This report includes KT&G's activities, policies, and achievements related to natural capital and biodiversity, as well as future plans and outlook. Expressions such as "prospects," "forecasts," "expectations," "plans," and "goals," or other similar terms, are used in this report and are based on the company's judgments and assumptions as of the time of the report's preparation. However, actual results may differ from predictions due to various external factors, including changes in trends related to natural capital and biodiversity, policies, and environmental volatility. We hope that this report helps stakeholders better understand the company's risks, opportunities, and strategic approaches related to natural capital and biodiversity. However, please note that the content of this report cannot, under any circumstances, be used as evidence of legal liability or as supporting material for investors' investment outcomes.

CONTENTS

INTERACTIVE PDF

This report has been published as an interactive PDF, allowing readers to move to pages in the report, and including shortcuts to related web pages.

Contents | Previous Page | Search | Related Webpage | Related Page in This Report

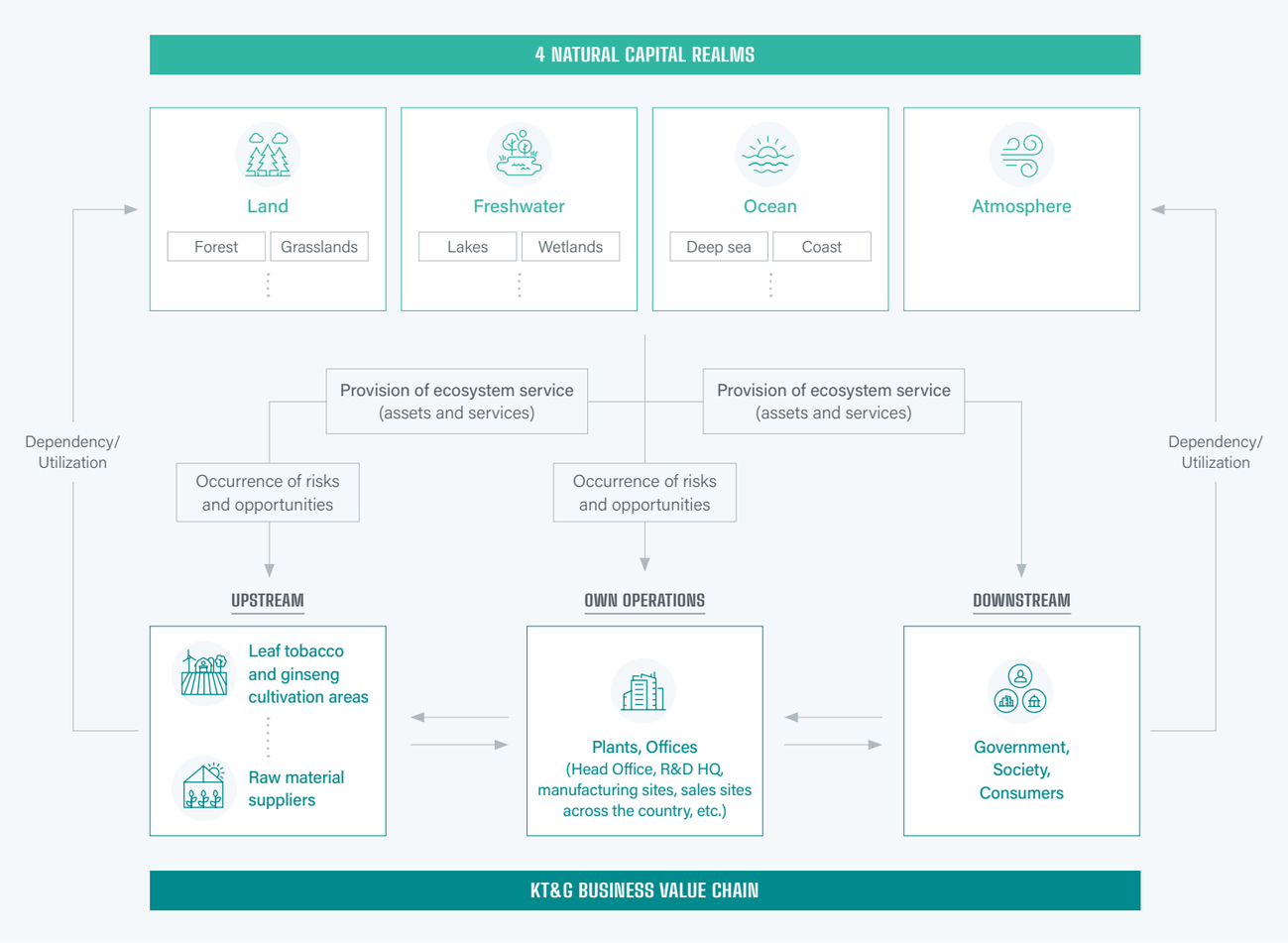
INTRODUCTION

NATURAL CAPITAL AND BIODIVERSITY

Natural capital is a key asset for a sustainable future of humanity and a shared resource for all, requiring responsible use. Biodiversity, an essential component constituting natural capital, refers to the complex interactions between the various biological species that exist on Earth and the ecosystems to which they belong, through which natural capital provides humanity with essential ecosystem services such as air filtration, water flow, and food.

However, biodiversity is declining, and natural capital is being degraded due to climate change, habitat destruction, and reckless development, threatening human survival and the sustainability of global businesses. At the 2024 World Economic Forum (WEF), where business leaders from around the world participated, "biodiversity loss and ecosystem collapse" was selected as a severe crisis among the long-term risk factors that will threaten humanity over the next decade, indicating that damage to natural capital and biodiversity is being recognized as a critical global risk. Accordingly, interest in and the need for corporate management of natural capital and biodiversity continue to increase, and there is a growing global call for joint efforts in corporate disclosure and management of related information.

All KT&G businesses rely on natural capital such as forests, soil, and water. We recognize the importance of natural capital and biodiversity, which provide various ecosystem services, and thus make continuous efforts to protect and restore them. Furthermore, we strive to achieve sustainable management through the responsible use of natural capital and transparent disclosure of information. Through this report, we aim to share KT&G's activities and achievements in the conservation of natural capital and biodiversity.



* Reference: Recommendations of the Taskforce on Nature-related Financial Disclosures, Figure 10(TNFD, 2024)

OUR JOURNEY TOWARDS NATURE POSITIVE FUTURE

KT&G's main business is in the agriculture-based food and beverage industry, which is highly dependent on natural capital. This means that we need to systematically and strategically manage natural capital for stable and sustainable growth. At the same time, it suggests that preventing biodiversity loss and ecosystem collapse, while promoting environmental protection and industrial development, can create opportunities for new business growth. KT&G therefore joined the Taskforce on Nature-related Financial Disclosures (TNFD) Forum Membership in December 2022, and strives to comply with global standards for natural capital management and proactively manage risks and opportunities related to natural capital.

In 2023, KT&G established the Biodiversity & No Deforestation Policy and set a goal to halt deforestation and land conversion in protected areas by 2030. In the process of setting this goal, we analyzed the impact of KT&G Group's management activities and assets on natural capital and biodiversity, confirming that most of the Group subsidiaries' business sites do not have significant negative effects on protected areas. Meanwhile, we have identified some areas for improvement within the major material supply chain and are taking corrective actions accordingly.

In 2024, we expanded our external activities by enhancing disclosures on natural capital, biodiversity goals, strategies, and performance within the KT&G Report, in line with the final recommendations of TNFD. As part of these efforts, we participated in the Natural Capital Disclosure Council, launched through the collaboration between the Ministry of Environment of Korea and the private sector, to strengthen our capacity to address natural capital disclosures while continuing to expand stakeholder collaboration. The Council serves as a hub for sharing domestic and overseas trends on natural capital disclosures with various stakeholders and facilitates communication between the government and the private sector regarding policies and guidelines.

In December 2024, we signed a memorandum of understanding (MOU) with the Asian Forest Cooperation Organization (AFoCO) for "sustainable forest development." Based on this partnership, we take active participation in forest conservation in overseas countries, with a focus on where we operate our business, such as Kazakhstan and Indonesia, in collaboration with local government-led national projects. Furthermore, we aim to contribute to the achievement of international biodiversity goals by aligning our activities and outcomes related to natural capital and biodiversity with the 2030 Action Targets of the Kunming-Montreal Global Biodiversity Framework (GBF).

KT&G will make continuous efforts to strengthen the ecosystem sustainability by integrating a natural capital response strategy into the existing environmental management system. Through this, we aim not only to minimize the negative impact on nature but also to create "Net Positive Impact," positioning ourselves as a leading company in sustainable management.

TOP 5 INDUSTRIES WITH HIGH DEPENDENCE ON NATURAL CAPITAL

* Reference: SIF Scoping Study: Nature-Related Risks in the Global Insurance Sector (UNDP, 2021)

TNFD Forum Member

Signed an MOU with the AFoCO for sustainable forest development in December 2024

Participated in the 2nd Natural Capital Disclosure Forum in November 2024

GLOBAL NATURAL CAPITAL INITIATIVE TRENDS AND KT&G'S RESPONSE

	2021	2022	2023	2024	2025
Global natural capital initiative trends	• A landmark agreement was reached to halt and reverse forest loss and land degradation at the 26th UN Climate Change Conference of the Parties (COP26).	• The Global Biodiversity Framework (GBF) was adopted at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP15). • A global institutional investor initiative, Nature Action, was launched to support biodiversity loss prevention.	• The final recommendations for natural capital disclosure and the phased confirmation of industry-specific disclosure guidelines were announced.	• "Biodiversity loss and ecosystem collapse" was chosen as the 3rd among the top 10 long-term risks in the annual Global Risks Report published by the World Economic Forum	• An agreement was reached on the establishment and allocation of annual funding amounting to USD 200 billion for biodiversity protection at the resumed session of the 16th Conference of the Parties to the UN Convention on Biological Diversity (COP16).
KT&G's natural capital management and disclosure	• Analyzed the biodiversity status of each business site located in countries designated on the IUCN Red List	• Signed an agreement with the National Institute of Ecology for "Ecosystem Conservation and Biodiversity Promotion" • Signed an MOU with the Korea Marine Environment Management Corporation and the Ocean for "Marine Environment Protection" • Joined the TNFD Forum Membership • Held a domestic leaf tobacco ESG declaration ceremony	• Established the KT&G Biodiversity & No Deforestation Policy • Conducted monitoring on 340 items across 4 sectors (cultivation, environment, labor, human rights) targeting domestic leaf tobacco farms as part of the STP program • Created the STP Monitoring Index Handbook for Domestic Leaf Tobacco Production	• Participated in a natural capital disclosure council organized by the Ministry of Environment of Korea • Signed an MOU with the Asian Forest Cooperation Organization for sustainable forest management • Completed the Janggu catfish wetland restoration project • Yeongju Plant achieved the highest rating from the Alliance for Water Stewardship	• Participated in the Korean Natural Capital Disclosure Support Union organized by the Ministry of Environment of Korea • Published KT&G's first standalone pilot report on TNFD

GOVERNANCE

BOD SUPERVISION

Reporting Structure to the BOD

KT&G's natural capital management is systematically carried out under the responsibility of the Sustainability Committee—a committee within the Board of Directors (BOD). The Sustainability Committee examines the alignment between the company's ESG implementation strategies and long-term strategies for managing natural capital, approves key tasks related to natural capital, and closely supervises their implementation progress. Furthermore, we contribute to strengthening the foundation for sustainable management by comprehensively managing and overseeing nature-related dependencies and impacts associated with our business activities, as well as the risks and opportunities arising from them.

Biodiversity & No Deforestation Policy

KT&G's "Biodiversity & No Deforestation Policy," established in 2023, applies to the entire value chain, including domestic and overseas business sites, farms within the supply chain, and partner companies. The purpose of the Policy is to prevent and mitigate risks that may arise across the business, and it was developed with reference to international agreements and guidelines, such as the Convention on Biological Diversity, the IUCN Guidelines for Applying Protected Area Management Categories, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The Sustainability Committee is responsible for final approval of the policy and its revisions. Based on this policy, the committee deliberates and reviews biodiversity- and forest-related legal and regulatory responses, risk assessments, conservation planning, and investment decisions that significantly affect business operations.

Biodiversity & No Deforestation Policy

ROLES AND RESPONSIBILITIES OF THE MANAGEMENT

Management's Responsibility for Natural Capital Management

KT&G's natural capital management is overseen by the Sustainability Committee under the BOD. The Committee reviews the alignment between the company's ESG strategy and long-term natural capital management strategies, approves key tasks, and monitors their implementation. It also oversees nature-related dependencies and impacts associated with our business activities, as well as the risks and opportunities arising from them. The appropriateness of the methods used to assess natural capital dependencies, impacts, risks, and opportunities, as well as any issues identified and corresponding response measures, is reported to the Chief Operating Officer (COO, concurrently serves as CFO) to ensure responsible oversight.

The ESG Management Office, under the General Headquarters, collaborates with a task force (TF) composed of ESG- and environment-related departments to evaluate the materiality of natural capital issues and reports significant matters to the COO. As sustainability disclosures become increasingly important at the group level, natural capital issues are also discussed within group-wide councils that include ESG representatives from subsidiaries. Natural capital is treated as a non-financial risk within KT&G's company-wide integrated risk management framework, and its associated risks, opportunities, and impacts are continuously monitored.

NATURAL CAPITAL MANAGEMENT GOVERNANCE

LOCAL COMMUNITY AND STAKEHOLDER ENGAGEMENT

Protection of Growers and Local Residents

Among stakeholders belonging to the upstream stage of KT&G's value chain, leaf tobacco growers and residents in communities near farms may be vulnerable to human rights issues and are also highly likely to be affected in their livelihoods and daily lives by changes in natural capital caused by our business. Accordingly, we are strengthening monitoring and conducting ongoing management to protect the basic rights of stakeholders.

We adopted the Sustainable Tobacco Program (STP) for leaf tobacco farmers, with on-site monitoring conducted in Korea based on our own STP guidelines. Overseas, evaluations including human and labor rights issues are carried out through leaf tobacco suppliers and third-party agency specializing in due diligence. Risk factors identified through evaluation and due diligence are prioritized to establish action plans for each supplier, and improvement activities are continuously carried out accordingly.

KGC, one of the major Group subsidiaries, independently established the Sustainable Ginseng Program (SGP) for domestic ginseng farms in 2023, and through pilot operation, assessed the program's effectiveness. In 2024, the scope of SGP was expanded to approximately 6% of all 1,560 farms, thereby realizing sustainable ginseng cultivation that complies with environmental and social regulations. Particularly, domestic laws and regulations related to human rights and labor rights are provided to growers in the form of guidelines, and compliance with and implementation of the guidelines are managed through each business site's GC (Ginseng Consultant).

Protection of Water Sources Near Business Sites and Community Engagement

KT&G uses water as a key resource throughout the entire process from leaf tobacco cultivation to cigarette manufacturing. We are undertaking various initiatives to promote the responsible use of water resources—vital to our sustainable growth—and to advance a circular economy. We not only manage water usage within the business site but also actively engage in protecting local water resources and ecosystems, as well as managing watersheds responsibly. We are also working to obtain Alliance for Water Stewardship (AWS)[1] certification to align with global water resource management standards.

Particularly, at the Yeongju Plant, which has a high level of dependence on local water resources, ecosystem-specific monitoring is conducted to minimize the impact of business activities on the local residents' right to access water. Compliance with environmental regulations is also checked using a checklist developed in-house. Additionally, we are diversifying communication channels, such as conducting surveys targeting local residents to gather their opinions. In the 2023 survey, a problem of rust-colored water in the tap water was identified, and the company promptly took corrective measures in cooperation with the local government's waterworks office. The Yeongju Plant also analyzed water risks in the Nakdong River and Seocheon basin areas and carried out risk mitigation activities. It has established and operates a water resource consultative body in which local governments and public institutions participate. We are also making multifaceted efforts to conserve ecosystems, such as designating dolines and Janggu catfish wetlands as water resource protection areas. Recognized for these achievements, the Yeongju Plant obtained the Platinum rating from the Alliance for Water Stewardship (AWS) in 2024. Leveraging this as an opportunity, KT&G aims to extend global water resource certification to both domestic and overseas plants, positioning itself as a leader in sustainable water resource management through collaboration with local communities.

[1] A global coalition composed of businesses, NGOs, and the public sector, contributing to the sustainability of regional water resources through the adoption and expansion of the AWS Standard, a framework for sustainable water use, to promote excellent water stewardship performance


WSAS WATER STEWARDSHIP ASSURANCE SERVICES

ALLIANCE FOR WATER STEWARDSHIP

CERTIFICATE

AWS International Water Stewardship Standard v2.0

KT&G - Yeongju, Korea
179, Jeokseogongdan-ro, Yeongju-si, Gyeongsangbuk-do
Yeongju, 36148
KOREA, REPUBLIC OF

AWS Reference Number: AWS-000721

Catchment: Nakdong River Basin
Industry Sector: Other
Scope: Single Site

Certification level
Certified Platinum

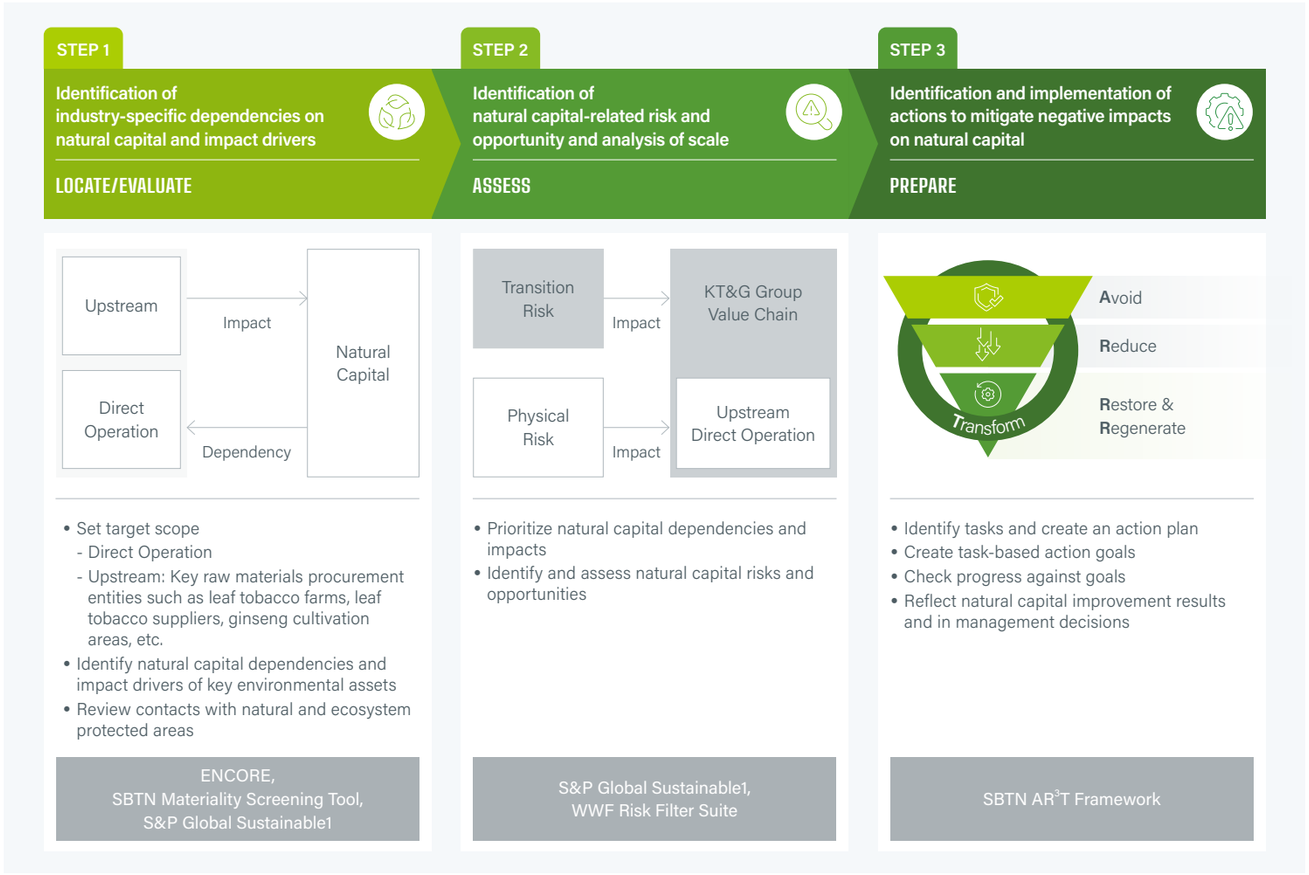
Authorised by Lisa Seufert, Head of Certification

Yeongju Plant achieved the Platinum rating from the AWS

STRATEGY

KT&G has established a natural capital management process based on the LEAP Approach outlined by TNFD to systematically identify and analyze the dependencies, impacts, risks, and opportunities related to our natural capital. The LEAP approach is a comprehensive framework encompassing the entire process of location (L), evaluating (E), assessing (A), and preparing and disclosing (P) natural capital issues, through which we are enhancing the systematic management of natural capital and the transparency of information disclosure.

KT&G NATURAL CAPITAL MANAGEMENT PROCESS



IDENTIFICATION OF DEPENDENCIES/IMPACTS AND RISKS/ OPPORTUNITIES

LOCATE Identifying overlapping areas for assessing dependency and impact on natural capital

KT&G's primary business is tobacco manufacturing, and it has subsidiaries operating in various industries such as health functional foods, pharmaceuticals, and cosmetics, which makes the company rely on a broad ecosystem, and its environmental impact also manifests in various ways. We therefore expanded the scope of assessment to identify points of interaction with natural capital, not only within the business sites of headquarters, sales subsidiaries, and manufacturing plants of consolidated subsidiaries and their adjacent areas, but also to major domestic and overseas tobacco farms supplying raw materials, domestic ginseng farms supplying ginseng raw materials, and some suppliers. Natural capital dependency and impact assessments were conducted across 147 business sites and associated sites. Details of this analysis are provided in the "Strategy: Assets and Activity Locations" of this report.

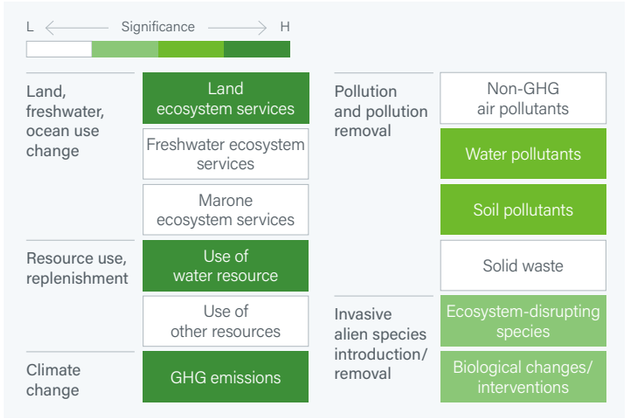
EVALUATE Screening and prioritization of natural capital dependency and impact of key assets

In the "Evaluate" phase, KT&G assessed the relative degree to which business operations depend on and impact natural capital. To this end, we used global assessment tools, such as ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) and the materiality screening tool developed by the Science Based Targets for Nature (SBTN), and thus identified and prioritized natural capital factors most closely related to our business. As a result, five key areas of natural capital requiring active management were identified, along with 12 associated negative impact drivers.

Beyond industry-specific analysis, KT&G incorporated the geographic location data of key assets and worked with S&P Global Sustainable1, using WWF's Risk Filter Suite Tool[1)], to quantitatively assess the levels of dependency and impact on natural capital. Through this process, we refined and prioritized the natural capital factors that we significantly depend on or that could materially affect our operations.

[1)] Based on WWF Risk Filter Suite version 2.0 (WWF, 2024)

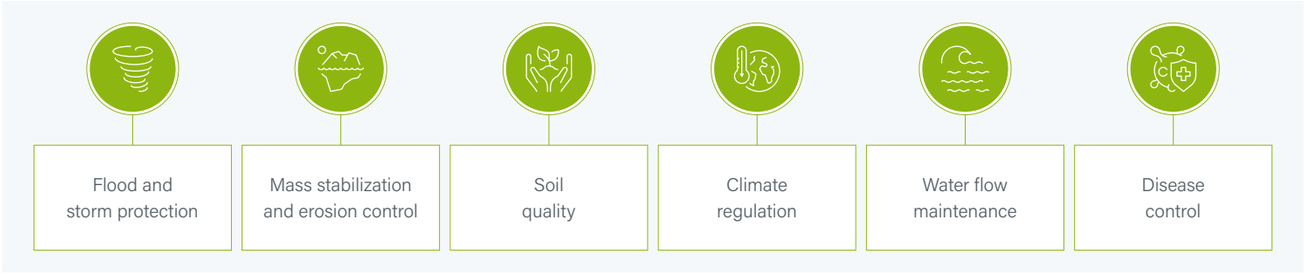
CLASSIFICATION OF NATURAL CAPITAL CATEGORIES UNDER GLOBAL FRAMEWORKS (IUCN, TNFD, ETC.)



1. DENTIFICATION OF DEPENDENCY FACTORS

KT&G's tobacco and ginseng businesses rely on large-scale cultivation to procure raw materials, and this process shows a "moderate" level of dependency on ecosystem services such as plant-based resources and ground and surface water. Additionally, KT&G was assessed to have a moderate level of dependency on elements closely related to agriculture, including soil quality management, water flow regulation, climate regulation, disease and pest control, soil stabilization, and erosion control, all of which are part of regulations and maintenance services that adjust the functionality, structure, and composition of ecosystems to maintain balance. Based on this analysis and results from S&P Global Sustainable1, KT&G conducted a secondary review using WWF's Risk Filter Suite Tool, which led to the final identification of six key natural capital dependencies critical to the KT&G Group.

KT&G GROUP'S KEY DEPENDENCY FACTORS ON NATURAL CAPITAL



2. IDENTIFICATION OF IMPACT FACTORS

KT&G conducted an assessment of the environmental impacts associated with its tobacco and ginseng operations, agriculture-based industries, by using WWF's Risk Filter Suite. The analysis identified pollution, protected and conserved areas, deforestation, and land/freshwater/ocean use change as the primary impact drivers. These factors are closely tied to the cultivation of tobacco leaves and ginseng, the company's main raw materials, and were found to be strongly associated with key components of natural capital, such as soil, water, and atmosphere.

KT&G GROUP'S KEY IMPACT FACTORS ON NATURAL CAPITAL

DEPENDENCIES/IMPACTS AND THE IMPACT OF RISKS/OPPORTUNITIES

ASSESS Assessment of natural capital risks and opportunities

KT&G has identified significant natural capital dependencies and impacts across its operations and used this information to assess related risks and opportunities. Each risk and opportunity was evaluated through multiple lenses, including causal drivers, points of occurrence within the value chain, and types of financial impact. In 2024, we introduced scenario analysis in accordance with TNFD recommendations. This was not simply an exercise in compliance but a strategic measure to proactively identify business impacts arising from natural capital-related risks and opportunities and to develop appropriate response strategies. The results of the scenario analysis helped the company comprehensively understand the potential ripple effects of risks and the value of opportunities, providing a foundation for strengthening the resilience of KT&G's natural capital strategies and proactively responding to foreseeable environmental changes. Details of the TNFD scenario analysis are provided in the "Scenario Analysis" of this report.

NATURAL CAPITAL RISK AND OPPORTUNITY OF KT&G

(Based on a 5-point scale)

Category	Sub-category	R/O Driver			R/O	R/O occurrence location (value chain)			Type of financial impact		Impact on KT&G	Scenario 1 (Intensification of transition risks)		Scenario 1 (Intensification of physical risks)	
		Dependency	Impact	Description		Up stream	Business sites	Down stream	Cost	Revenue	Impact	Level of impact	Likeli-hood	Level of impact	Likeli-hood
Transition Risks	Market	-	-	Rising consumer demand for sustainably produced goods	• Increased need to replace raw materials with those grown using sustainable methods				●		• Costs incurred for transitioning to a sustainable supply chain • Additional operational costs if the transition is not made (e.g., introducing sustainable practices to existing farms, changing suppliers)	2	3	4	4
		-	-		• Costs incurred for transitioning to a sustainable supply chain				●		• Increased procurement costs due to higher unit prices of sustainably grown raw materials	5	4	5	5
	Policy and Legal	-	-	Expansion of corporate biodiversity and natural capital management policies and regulations	• Growing need for supply chain oversight in response to policies and regulations aimed at curbing indiscriminate farmland expansion and land-use changes.				●		• Incurrence of direct and indirect operating costs for developing data-sharing platforms, deploying specialists, and implementing disclosure strategies to monitor the natural capital and biodiversity management of key upstream and downstream partners • Additional spending required to meet value chain GHG reduction targets	4	5	1	1
	Reputa-tion	Soil erosion management	Protected/ conserved areas	Damage to protected natural areas by the company	• Increased need to suspend operations of business sites, partners, or farms near protected areas				●	●	• Additional operational costs from implementing location-based technologies and deploying specialists to inspect business sites and supply chains near protected areas • Consideration of downsizing or withdrawing operations from business sites and supply chains adjacent to protected areas • Decline in corporate value due to decreased social reputation and operational instability when maintaining facilities and supply chains adjacent to nature conservation areas	3	2	3	3
		-	Labor/ Human Rights	Health and safety risks for tobacco leaf farmers	• Increased likelihood of grower injury or illness during the cultivation process				●	●	• Revenue decline due to boycott and reputation risk arising from severe human rights risks for farmers • Legal response costs incurred due to lawsuits from farmer organizations against partners and the company, arising from health and safety threats to farmers caused by hazardous practices in crop cultivation	2	1	2	2

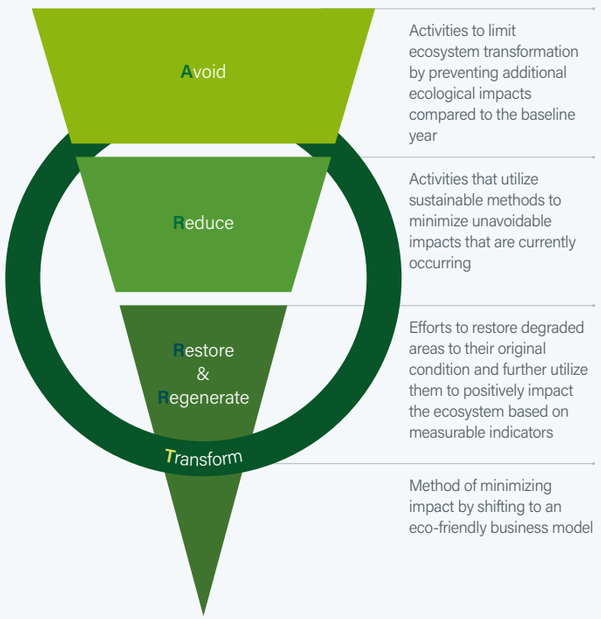
NATURAL CAPITAL RISK AND OPPORTUNITY OF KT&G

Category	Sub-category	R/O Driver			R/O	R/O occurrence location (value chain)			Type of financial impact		Impact on KT&G	Scenario 1 (Intensification of transition risks)		Scenario 1 (Intensification of physical risks)	
		Dependency	Impact	Description		Up stream	Business sites	Down stream	Cost	Revenue	Impact	Level of impact	Likeli-hood	Level of impact	Likeli-hood
Physical Risks	Acute	Protection from flooding and high winds, climate control	-	Climate disasters caused by the degradation of the climate regulation function of ecosystems	• Reduction in soil productivity and decline in crop quality due to farmland damage caused by climate disasters				●	●	• Restoration support costs incurred for directly contracted farmland • Increased production and procurement costs due to reduced raw material production and supply of crops like leaf tobacco/ginseng • Weakened market competitiveness and risk of long-term customer attrition due to quality issues	4	4	4	4
		Disease control	-	Increased incidence of plant viruses and invasive species	• Unstable crop growing conditions may reduce crop productivity				●	●	• Reduced company revenue caused by lower product production volume • Costs incurred for invasive species prevention support targeting farms affected by diseases and invasive species	3	3	3	3
		Soil erosion management	Pollution	Degraded soil function due to excessive land use and declining soil quality	• Reduction in soil productivity and decline in crop quality due to abnormal phenomena such as soil erosion				●	●	• Costs incurred for restoration support due to farmland damage caused by soil erosion • Increased production and procurement costs due to reduced raw material production and supply of crops like leaf tobacco/ginseng	2	2	2	2
	Chronic	Maintaining flow	Land/ freshwater/ ocean use change	Water shortages near cultivation sites	• Reduced production and supply of raw materials due to irrigation water shortages and declining water quality				●	●	• Costs incurred to support improvements in water sensitivity around tobacco leaf and ginseng farms • Increased production and procurement costs due to reduced supply of key raw materials such as tobacco leaves and ginseng • Risk of weakened market competitiveness and long-term customer attrition due to quality issues in finished products	1	1	1	1
Opportunities	Products and Services	-	-	Improved sustainability of raw material supply chains	• Opportunities for eco-friendly product production due to the increase in the supply of sustainably certified crops					●	• Increased revenue from the production and sale of environmentally friendly products • Enhanced customer acquisition through eco-friendly product certification and marketing	1	1	1	1
	Resource Efficiency	-	-	Growing number of verified cases demonstrating the effectiveness of eco-friendly fertilizers and biomass	• Expanded opportunities to reduce carbon emissions in the supply chain through sustainable farming technologies such as biochar adoption					●	• Diversification of the business portfolio (e.g., carbon credit issuance projects) • Reduced costs for achieving greenhouse gas reduction targets	2	2	2	2
		-	-		• Enhanced soil quality and crop productivity at cultivation sites					●	• Increased crop yields supporting long-term business continuity	3	3	3	3

PREPARE Efforts to mitigate natural capital-related risks

KT&G aims to manage negative impacts related to natural capital and biodiversity across the entire value chain in a balanced manner through risk and opportunity assessments related to natural capital. To this end, we are systematically managing risks by applying the "AR^{3}T Framework" presented by SBTN. This framework takes an approach that consists of avoiding potential future impacts (Avoid), minimizing current impacts (Reduce), regenerating and restoring past ecosystem damage (Regenerate & Restore), and contributing to systemic environmental change through innovative technologies in the mid-to-long term (Transform). It is being used as a core strategy for implementing KT&G's natural capital risk mitigation and biodiversity conservation activities.

DESCRIPTION OF AR^{3}T FRAMEWORK



EXAMPLES OF KT&G'S MAJOR NATURAL CAPITAL RISK MITIGATION ACTIVITIES

Avoid

- Establish a goal of halting deforestation and land conversion (Deforestation and Conversion-Free) in protected areas by 2030
- Develop and disseminate STP and SGP guidelines for farms on soil conservation, pollutant management, and standard farming practices
- Analyze biodiversity risks in the production of products near domestic and international manufacturing operations
- Include related issues such as environment, human rights, labor, and working conditions in supply chain diagnostic indicators and conduct regular inspections based on codes of conduct

Reduce

- Reuse effluent in wastewater treatment plants (domestic), reuse concentrated water based on R/O technology (overseas)
- Monitor changes in soil use on farmland and business sites at home and abroad
- Regularly monitor water quality, soil pollutant emissions, manage total annual emission targets, and conduct soil contamination tests
- Implement an LCA for major products to evaluate the environmental impact of products produced and sold, and applying improvement projects (e.g., removal of device adapter protective film, conversion of device cable fastening band to paper, etc.)
- Expand the use of raw materials with FSC, GAPC, and other sustainable agriculture and procurement-related certifications

Regenerate & Restore

- Implement forest and ecosystem restoration measures when nature-damaging activities are identified through regular and irregular farm due diligence.
- Voluntary forest restoration and afforestation activities in areas of high nature conservation value at home and abroad
- Conduct annual improvement activities for biodiversity conservation in communities near our operations with the National Institute of Ecology (wetland protection activities, forest creation, etc.)
- Promote sustainable forest management and conduct restoration activities in areas affected by wildfires in collaboration with the AFoCO

Transform

- Promote the development of non-plastic eco-friendly filters using "lyocell fiber" to improve ecosystem sustainability at the product disposal stage (in collaboration with KOLON Industries)
- Review facilities and technical support to prevent climate disasters (floods, heat waves, etc.) for cropland under direct and indirect contracts

1. Avoid

From the perspective of "prevention," KT&G focuses on minimizing ecosystem conversion to prevent additional impacts on ecosystems and taking preemptive measures to manage risks. The company aims to phase out cultivation and sourcing of key raw materials from protected areas by 2030. This includes halting deforestation in natural forests and cultivation within protected areas for key raw materials such as leaf tobacco, ginseng, wood for curing tobacco leaves, and packaging paper and pulp. To achieve this goal, we regularly monitor the overlap between supply chain locations for key products and protected areas. For high-risk areas of concern, we are taking various preventive measures including on-site inspections. During the contract review stage with farms, overlap with protected areas is checked in advance to minimize the risk of natural capital loss. Additionally, we are working to identify drivers of protected area degradation in local communities near the value chain and to generate net positive impact (NPI) on forests and soil through restoration activities.

Furthermore, KT&G has developed and distributed STP and SGP (by KGC) guidelines to domestic farms to provide standards for soil conservation, pollutant management, and standard farming practices. Strict cultivation guidelines based on standard farming methods are provided to domestic leaf tobacco farms, and customized fertilizer supply support is provided through KTGO (Korea Tobacco Growers Organization). In addition, we strive to promote environmentally friendly agricultural practices by recommending the use of compound fertilizers and by-product fertilizers suitable for cultivation according to standard of farming methodology, such as proposing the designation and usage criteria of crop protection agents, banning the use of general compound fertilizers and livestock manure, among others.

2. Reduce

"Reduction" activities are focused on minimizing the unavoidable impacts arising from business operations in a sustainable manner. At KT&G's domestic business sites, treated wastewater from treatment plants is reused, while concentrated water is recycled at overseas sites, using reverse osmosis (R/O) technology, thereby reducing water quality impacts. Particularly, we focus on managing water pollutants that may occur during the tobacco production process. We comply with relevant laws and, considering local characteristics, apply internal standards that are more stringent than legal requirements. For example, the Daejeon Plant operates an internal water quality standard that is approximately 40% stricter than the legal standard.

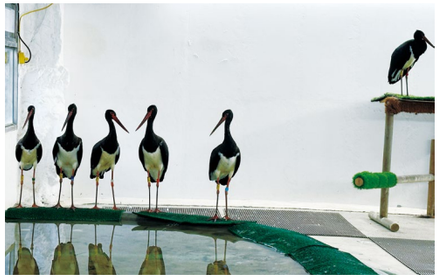
Based on global environmental management systems, such as ISO 14001, we regularly inspect the status of water pollutant management and conduct regular tests on 28 items, including pH, BOD, and TOC. We also check once a year for the detection of new water pollutants in accordance with our internal standards. Due to the nature of the industry, there is a possibility of water pollution caused by the use of fertilizers and pesticides during the cultivation of leaf tobacco. Therefore, strict agricultural standards are applied to farms through the KTGO, and fertilizers are managed and supplied based on crop types to make the utmost effort to minimize water pollution.

KGC purchases packaging materials made from FSC (Forest Stewardship Council)-certified paper and pulp in order to comply with sustainable forest management principles during the sourcing of paper and wood used in packaging. By maintaining and expanding the procurement ratio of packaging materials using sustainable forest resources, KGC aims to minimize impacts on natural capital and biodiversity in the upstream value chain and to strengthen responsible resource procurement.

3. Restore & Regenerate

"Restore and regenerate" activities aim to recover past damage to natural capital and ecosystems, and to restore positive impacts on ecosystems based on measurable indicators. We are committed to strengthening ecosystem functionality through activities such as protecting wetlands and promoting biodiversity near the Yeongju Plant. Following the signing of a memorandum of understanding (MOU) on ecosystem conservation and biodiversity enhancement with the National Institute of Ecology in 2022, we have been implementing mid- to long-term cooperative projects since 2023. One such project involved the restoration of the Janggu catfish wetland (approximately 38,000 m^2), located in Yeongyang County near the Yeongju Plant, where we completed construction to restore habitats damaged by sediment inflow from nearby roads and erosion.

In 2024, we launched a restoration project for the oriental stork (Natural Monument No. 200, Endangered Wildlife Class I), a species once native to the Gyeongbuk region but is now known to be extinct. To this end, we have investigated individuals that can be imported from Europe and Japan, while also creating a breeding environment by improving existing cages and installing frozen storage facilities for feed. As a result of these efforts, six individuals have been imported and are currently undergoing propagation and restoration in Korea. Additionally, we are working together with the Endangered Species & NIE Wetland Center of the National Institute of Ecology and Eco-Institute for Oriental Stork of the Korea National University of Education for baby black stork adoption and proliferation activities, laying the foundation for their re-establishment in native habitats.



Oriental storks introduced in Korea in 2024

Furthermore, in 2024, KT&G signed an MOU with the Asian Forest Cooperation Organization (AFoCO) to mitigate the impacts of climate change and is participating in various forest conservation activities in cooperation with national projects in overseas countries where it operates. In Kazakhstan, we are focusing on the restoration of wildfire-affected areas in Abai Province and supporting efforts to prevent recurrence. In Indonesia, we plan to create and restore new mangrove forests as a proactive response to natural disasters.

Since 2006, KT&G has also contributed to forest environment improvement both at home and abroad through forest creation activities led by the KT&G Welfare Foundation, with investments totaling approximately KRW 5 billion over 19 years. Until 2012, volunteer activities involved planting 38,000 trees in the fire-damaged area of Naksansa Temple in Yangyang, Gangwon Province. Since 2013, we have planted 14,000 trees and removed invasive plants to restore the ecosystem of Bukhansan Mountain. In 2023, we completed the third KT&G "SangSang Forest" in Mongolia, one of our overseas business countries, with support from the "SangSang Fund," voluntarily donated by our employees. Through these activities, we are realizing our management philosophy of "Inclusive Company" by conducting ecosystem restoration and regeneration efforts in parallel with employee volunteer work at home and abroad.

4. Transform

Lastly, KT&G's "innovation" activities are focused on minimizing environmental impacts in the mid- to long-term through the transition to eco-friendly business models and new technologies. The company is concentrating on the development of eco-friendly cigarette filters to provide a fundamental solution to environmental issues arising at the product disposal stage. Conventional plastic filters are difficult to biodegrade, and once discarded, they often flow directly into the marine ecosystem, eventually decomposing into microplastics and becoming a major cause of negative impacts on marine ecosystems. To reduce the environmental impact of cigarette filters, we have conducted R&D on alternative materials such as non-plastic and biodegradable substances over the past several years. In 2023, in collaboration with Kolon Industries, we jointly developed a non-plastic filter using lyocell fiber, an eco-friendly material, accelerating the development of plastic-free filters. Alongside technological development, we are conducting marine ecosystem conservation activities in cooperation with the Korea Marine Environment Management Corporation and the OSEAN (Our Sea of East Asia Network). Since 2021, we have collected approximately 80,000 kg of marine waste.

We are also striving to reduce ecosystem impacts during the use and disposal phases by designing products with consideration for consumer safety and quality. Additionally, we are conducting research to analyze the effectiveness of biochar[1], a carbon reduction technology gaining attention in the agricultural sector, and exploring ways to contribute to mutual cooperation with domestic and overseas leaf tobacco farms and to the improvement of agricultural product quality. KT&G will continue to expand such innovation and pursue harmony with the environment.

SangSang Forest created in Uljin County of Gyeongsangbuk-do in November 2024

SangSang Forest Mongolia created in May 2025

Restoration activities in the wildfire-affected areas of Abai Region, Kazakhstan (-2027)

Analyzed the effectiveness of biochar, a carbon reduction technology in the agricultural sector

Signed an MOU for marine ecosystem conservation with Korea Marine Environment Management Corporation and OSEAN

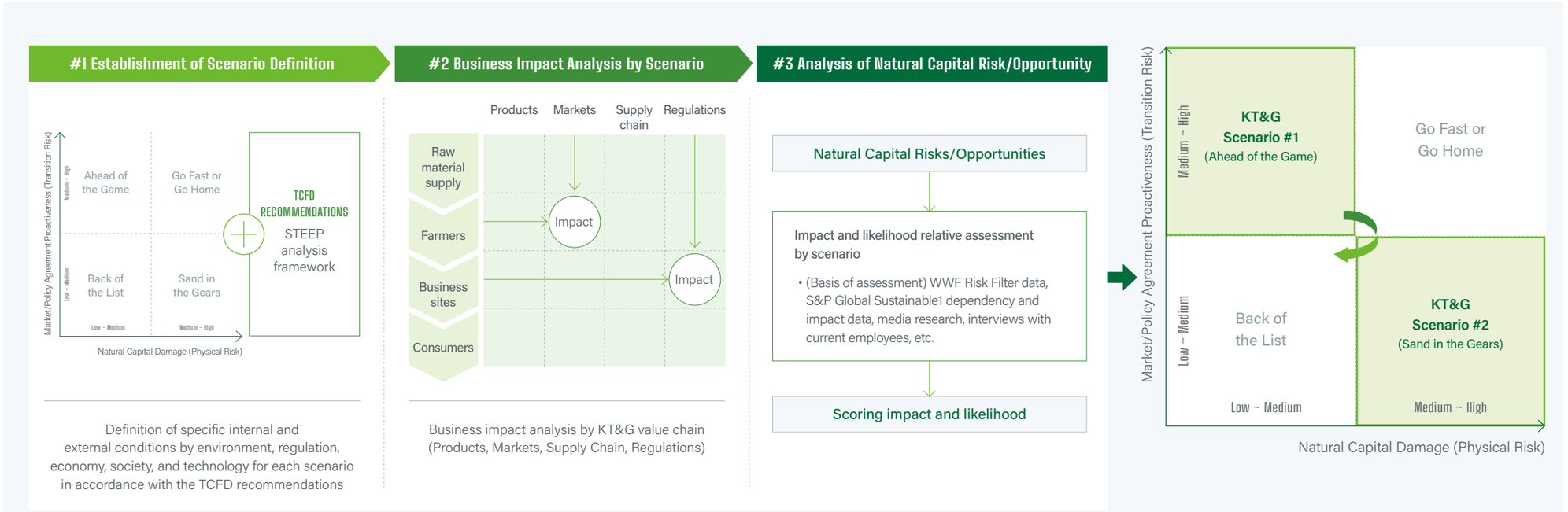
[1] Biochar is a material produced by pyrolyzing biomass such as wood, crop residues, and plant-based materials. It lowers greenhouse gas concentrations by storing carbon in the soil and contributes to soil health improvement. As such, it is gaining attention as a method of carbon capture, utilization, and storage (CCUS), or carbon capture and storage (CCS), in the agricultural sector.

SCENARIO ANALYSIS

The final recommendations of the TNFD advise companies to establish resilient natural capital strategies by considering various future scenarios and present specific analytical methodologies that can be practically applied. KT&G has adopted natural capital scenario analysis based on the TNFD recommendations. Using the TNFD analysis framework, we aim to concretely examine various future possibilities and flexibly establish response strategies for natural capital and biodiversity according to anticipated internal and external environmental changes under each scenario.

The natural capital scenario analysis process begins by specifically defining internal and external factors such as environmental, regulatory, economic, social, and technological aspects for each scenario, in accordance with the recommendations of TNFD and TCFD. Next, we analyzed the potential impact of each scenario on our business as a whole—including products, markets, supply chains, and regulations—across the value chain. Based on this, we identified natural capital-related risks and opportunities, assessed the impact and likelihood of each under different scenarios, and selected items requiring prioritized response. Moving forward, KT&G will continuously monitor the latest trends in TNFD analysis methodology and gradually enhance the precision and effectiveness of its scenario analysis.

NATURAL CAPITAL MANAGEMENT SCENARIO ANALYSIS PROCESS



ESTABLISHMENT OF SCENARIO DEFINITION

Classification of scenarios	Description
Ahead of the Game	A scenario where damage to natural capital and biodiversity is minimal, and society actively engages in conservation efforts. Governments implement strong regulations and policies, and companies respond by mitigating nature-related risks and maximizing relevant business opportunities. **[Key Assumptions]** – Active implementation of policies and regulations for the protection of natural capital – Increased investment by businesses and investors, and greater consumer demand, aligned with natural capital and biodiversity considerations – Adherence to the climate pathway consistent with the 1.5°C target
Sand in the Gears	A scenario with significant damage to natural capital and biodiversity, compounded by insufficient regulatory response. Physical risks expand and begin to severely affect corporate supply chains and operations. **[Key Assumptions]** – Continuation of current levels of natural capital and biodiversity-related policies and regulations – Low stakeholder engagement in natural capital and biodiversity issues, leading to increased degradation – Failure to adhere to the climate pathway aligned with the 1.5°C target

The TNFD recommends conducting scenario analyses based on two key future uncertainties: "ecosystem service degradation" and "alignment of market and non-market forces with nature-related goals." KT&G conducted an analysis based on the most contrasting scenarios among the four scenarios proposed by TNFD, "Ahead of the Game" and "Sand in the Gears." In the preparatory stage, KT&G adopted the STEEP framework (an analysis framework that considers macro-environmental factors such as social, technological, economic, environmental, and political aspects) in accordance with TNFD recommendations to assess macro-environmental conditions and define the key internal and external driving forces[1] behind natural capital change. This process laid the foundation for robust scenario planning and positioned KT&G to respond proactively to a wide range of potential future environments.[2]

SCENARIO ANALYSIS PREPARATION

Detailed Scenario Overview		Ahead of the Game (S1): Active introduction of natural capital policies by government and businesses may reduce natural capital damage and create various opportunities.	Sand in the Gears (S2): Delayed introduction of natural capital policies may increase natural capital damage, leading to short-term measures focused solely on immediate responses.
STEEP	**Driving Forces**		
Environmental	N1. Natural capital	Damage mitigation	Damage expansion
	N2. Climate change	Damage mitigation	Damage expansion
	N3. Rate of change	Gradual change	Radical change
Political	R1. Regulatory intensity	Strengthening of eco-friendly regulations	Minimization of eco-friendly regulations
	R2. Scope of regulation	Global regulation	Regional regulation
	R3. Global cooperation	Proactive response	Passive response
Economic	E1. Economic growth	Economic growth	Economic recession
	E2. Globalization	Globalization	Localization
	E3. Investment	Eco-friendly investment	Finance-oriented investment
Social	S1. Consumption patterns	Eco-friendly consumption	Traditional mass consumption
	S2. Green infrastructure	High infrastructure level and accessibility	Low infrastructure level and accessibility
	S3. Local community impact	Impact expansion	Impact reduction
Technological	T1. Development speed	Rapid development	Slow development
	T2. Diffusion speed	Fast and broad dissemination	Slow and limited dissemination

[1] Driving Forces: 24 drivers of change categorized into 7 overarching categories impacting natural capital as provided by TNFD, and the societal, economic, and technological drivers of change presented in the SSP scenarios

[2] Reference: Guidance on scenario analysis (TNFD, 2024)

1. Business Impact Analysis by Scenario

After defining the macro environment, we analyzed the specific impacts each scenario would have on our products and business environment. For each scenario, we examined how major driving forces at each value chain stage could affect products, markets, supply chains, regulations, and policies. This process enabled us to identify potential future business environment directions and establish assumptions for each scenario.

2. Assessment of Natural Capital Risks and Opportunities

Along with this, KT&G conducted scenario-based evaluations on the 12 natural capital risks and opportunities previously identified. In this process, we comprehensively incorporated various data sources, including the WWF Risk Filter, dependency and impact data from S&P Global Sustainable1, historical records of past risk events, and interviews with frontline departments. We then calculated impact and likelihood scores for each risk and opportunity and used them to derive priorities. This prioritization process enables us to recognize potential changes in the business environment that the company may face and to strategically respond to natural capital-related risks and opportunities by effectively allocating limited time and resources.

3. KT&G's Key Natural Capital Risks and Opportunities

Category	Scenario 1 (Intensification of Transition Risk)	Scenario 2 (Intensification of Physical Risk)
Transition Risk	**1. Increase in procurement costs for raw materials cultivated through sustainable production methods** In Scenario 1, due to increased demand for eco-friendly consumption, the demand for products based on sustainably cultivated raw materials is expected to expand. Leaf tobacco is a key raw material, accounting for about 40% of the total cost, and is an item significantly impacted by price fluctuations. In particular, leaf tobacco has a unique characteristic of a time lag in its cost reflection, which can serve as a key risk in terms of mid- to long-term cost management.[1)] Additionally, KT&G's major leaf tobacco sourcing countries, such as Brazil, Uganda, and Indonesia, are relatively vulnerable to natural capital loss and climate change. In recent years, extreme weather such as severe droughts and floods have increased the possibility of reduced crop yields and rising volatility in procurement costs. These external factors are likely to drive up the cost of sourcing sustainable raw materials, with both impact and likelihood evaluated as high. In response, KT&G is expanding participation in the STP among domestic leaf tobacco farms and overseas suppliers, while strengthening risk checks across the supply chain. Additionally, we are closely analyzing supply and demand conditions to prepare for sudden price hikes or disruptions in the supply of leaf tobacco due to environmental changes, and continuously reviewing strategic inventory securing measures by forecasting production volumes and procurement feasibility across the supply network. 1) Leaf tobacco is purchased as raw material and then aged for over one year before being used in cigarette manufacturing, resulting in a time lag of over one year before cost is reflected in final product pricing. **2. Increase in the necessity for supply chain management to respond to policies/regulations preventing indiscriminate farmland expansion and soil repurposing** In Scenario 1, as eco-friendly policies and regulations are strengthened at the government and international levels, the importance of supply chain management and monitoring activities to respond is expected to grow. Currently, policies mainly focus on natural capital disclosures, but in the mid- to long-term, the introduction of more specific and legally binding regulations is highly likely. This evolving regulatory environment will require companies to establish monitoring systems across the supply chain, reduce upstream emissions, and implement supply chain transitions. As a result, management costs and direct/indirect risks are expected to increase. To proactively respond, KT&G has newly included "natural capital" and "biodiversity" in the company-wide risk portfolio as key non-financial risk categories. We also plan to establish and operate a natural capital risk assessment and management system covering not only our business sites but the entire value chain. Furthermore, KT&G is participating in the government-led Natural Capital Disclosure Council, actively engaging in the formulation of regulations and policies related to natural capital with various stakeholders. Through this, we are rapidly identifying policy trends and refining our internal response systems.	**1. Increase in the necessity for substitution with sustainably cultivated raw materials and rising procurement costs** In Scenario 2, as risks from natural capital loss and climate change become more severe, the risk of unstable raw material procurement is expected to increase. Regardless of demand for sustainable materials, procurement costs are expected to rise across the board due to climate disasters and ecosystem degradation. This will likely increase the necessity to secure alternative sourcing for stable supply. Particularly, many of KT&G's major leaf tobacco sourcing countries are vulnerable to climate change. According to S&P Global's Climanomics analysis, KT&G's supply chain faces an average projected annual loss rate of approximately 20% from flooding by 2030. This represents a risk level approximately 10% higher than that of Scenario 1 (SSP1–4.5). If such supply chain risks continue to rise, KT&G may need to consider risk mitigation strategies such as diversifying origins to lower climate/natural capital risk regions or securing alternative growing regions with stable supply potential. To address the uncertainty posed by heightened physical risks, KT&G is reviewing measures to reduce reliance on regions with high risks of deforestation and biodiversity loss. We plan to transition to suppliers with higher levels of climate and natural capital responsiveness in accordance with STP criteria and to conduct in-depth climate risk analyses for sourcing regions where yield declines are a concern. Based on these analyses, we aim to determine whether to introduce alternative growing regions and establish a multi-origin supply system as part of our mid- to long-term strategy. Additionally, we are encouraging STP participation among new sourcing regions and suppliers, and strengthening our due diligence and inspection processes to establish a proactive response framework to environmental and social issues. We also aim to enhance the resilience of our supply chain by pre-establishing annual purchasing strategies based on regional production history and risk data to forecast procurement cost fluctuations and enable flexible, strategic resource allocation.

3. KT&G's Key Natural Capital Risks and Opportunities

Category	Scenario 1 (Intensification of Transition Risk)	Scenario 2 (Intensification of Physical Risk)
Physical Risk 	**1. Reduction in soil productivity and crop quality due to farmland degradation caused by climate disasters** In both scenarios, damages are expected to increase due to the rising frequency and intensity of acute climate-related disasters. Particularly in Scenario 2, where natural capital loss and climate change risks become more severe, the level of damage is expected to be significantly higher. KT&G's leaf tobacco cultivation areas are primarily located in countries such as Brazil, Uganda, and Indonesia, which are characterized by natural environments that are relatively vulnerable to natural capital loss and climate disasters. In the event of acute disasters, not only can the damage be substantial, but the nature of such disasters makes advance monitoring and response limited. Damage to cultivation areas leads to changes in the physical and chemical properties of the soil, a decline in biological productivity, and deterioration in crop quality, ultimately impacting product quality and weakening market competitiveness. In response, we are conducting self-assessments on climate change and natural capital issues and continuously monitoring the implementation status of our action plans. We also operate an environmental risk assessment system across the supply chain and carry out response measures such as strategic portfolio adjustments based on analyses of changes in yield and grades of major leaf tobacco by region due to climate change. Through these efforts, we aim to mitigate short-term supply and demand shocks and, in the mid- to long-term, secure a sustainable base for leaf tobacco procurement and stabilize product quality. **2. Decrease in crop productivity due to instability of crop-growing environments** Loss of natural capital and climate change are anticipated to lead to the introduction of invasive species and the spread of pests and diseases, causing instability in growing environments, which is expected to be a major risk in both scenarios. Particularly in Scenario 2, the continued rise in average temperatures and changes in rainfall patterns are projected to further increase the likelihood of invasive species spread and pest outbreaks. If invasive species or viruses enter leaf tobacco cultivation areas, crop growth rates and quality may decline, resulting not only in reduced yields but also in diminished quality and price competitiveness of the final product. Moreover, this decline in productivity can expand into broader risks, such as threatening the livelihoods of local farms and undermining the long-term stability of the supply chain. Therefore, it should be given serious consideration. In response, KT&G is emphasizing the reinforcement of crop environment management guidelines for farms in accordance with STP guidelines. We are making efforts not only to preserve short-term productivity, but also to contribute to enhancing the resilience of farms and the overall sustainability of the supply chain.
Opportunity 	**1. Expansion of soil quality and crop productivity improvement** Improvement of soil quality and crop productivity is evaluated as a strategic opportunity that can enhance the sustainability of natural capital-based businesses and expand business continuity, regardless of how the scenario unfolds. KT&G's leaf tobacco raw materials show high dependency on soil quality, which is closely linked to yield and product quality. Therefore, improving the physical and chemical properties of cultivation soil is an essential factor in securing long-term stability in raw material procurement. KT&G is conducting research to analyze the effectiveness of introducing eco-friendly technologies (biochar, eco-friendly fertilizers, biomass, etc.) for improving soil fertility and enhancing productivity. These technologies can play a key role not only in restoring the ecological functions of soil but also in establishing a sustainable production system that supports the recovery of natural capital. Furthermore, such improvements are expected to go beyond merely serving as a risk avoidance measure and function as a strategic opportunity to secure business continuity and growth potential by enhancing production efficiency, strengthening supply stability, and expanding cooperation with farms.	

ASSETS AND ACTIVITY LOCATIONS

KT&G assessed the dependency on natural capital and potential impact levels across a total of 147 sites, encompassing the upstream value chain, including major domestic and overseas farms producing tobacco and ginseng raw materials, as well as some suppliers. Currently, KT&G sources leaf tobacco from domestic leaf tobacco farms as well as farms in various countries such as Malawi and Brazil, while the Group subsidiary, KGC, procures raw materials from domestic ginseng farms. In particular, approximately 20% of KGC's ginseng farms are changed annually through new contracts. Accordingly, KT&G Group plans to continuously review the scope of its upstream value chain diagnostics based on internal farm tracking systems and other measures.

RISK AND IMPACT MANAGEMENT

IDENTIFICATION AND ASSESSMENT – ENTIRE VALUE CHAIN

KT&G prioritizes the identification of nature-related dependency and impact factors across its entire value chain, including directly operated business sites, in order to manage risks and opportunities related to natural capital and assess their impacts both quantitatively and qualitatively. Firstly, considering the industrial characteristics, we utilized the ENCORE approach and the SBTN materiality screening tool to analyze the impacts related to natural capital across six major Group subsidiaries. As a result, we identified five key management topics and 12 major negative impact items related to natural capital that could significantly affect our business.

Based on this analysis, KT&G conducted a "natural capital and biodiversity risk" assessment in collaboration with S&P Global Sustainable1, utilizing location data of key assets to more precisely identify specific impacts on business activities and the value chain and establish their prioritization. The assessment was conducted based on the nature risk profile, which was developed to analyze a company's impacts and dependencies on nature.

Overlapping Areas with Natural and Protected Areas

As of 2023, KT&G selected a total of 147 sites, including business sites, major upstream suppliers, proximity leaf tobacco farms, and domestic ginseng farms, as key environmental assets. We analyzed the proximity of these assets to areas with a high need for ecosystem and natural capital conservation. The analysis revealed that approximately 94% of the major tobacco and ginseng farm areas within our own business sites and upstream supply chain are not located in the protected area, and it was found that none of KT&G's business sites are adjacent to key biodiversity area.

On the other hand, approximately 6% of the value chain is estimated to have potential proximity to protected area and key biodiversity area. Accordingly, KT&G aims to develop and implement response plans to mitigate any negative impacts by thoroughly understanding the current status of the sites and reviewing local regulations. In consideration of the characteristics of new contracts with upstream farms that change periodically, we plan to continuously strengthen monitoring and inspection systems to regularly track the interface between farmland and protected/key biodiversity areas in the future.

Risk Analysis of Impacts and Dependencies

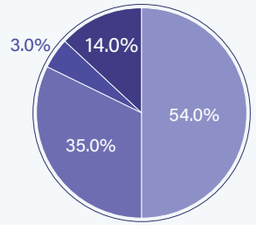
To assess the level of ecosystem impact associated with its business operations, KT&G calculated its "Ecosystem Integrity Footprint" based on spatial area (in hectares) where business activities take place. Through this analysis, we identified the area where we made physical impact on ecosystems and distinguished areas with ecological value within the degraded area. According to the result, it was determined that approximately 10% of the total area affects the natural environment. This indicates that the broader the area of impact, the greater the company's environmental responsibility.

Additionally, KT&G assessed the level of natural capital dependency across 147 key assets, including its business sites and value chain, based on two core indicators: reliance and resilience. The assessment found that leaf tobacco cultivation areas, which account for more than half of the total asset area, present a "Very High" level of natural capital dependency risk. Head Office and business sites of subsidiaries, manufacturing and sales corporations, and some partner companies were also found to pose "High" levels of risk. In contrast, key raw material suppliers were found to have a "Moderate" level of risk, while ginseng cultivation areas showed a "Low" level of risk.[1)]

Due to the agricultural nature of KT&G Group's upstream supply chain, the company exhibits a relatively high dependence on ecosystem services. Particularly, the leaf tobacco cultivation process was confirmed to have a very high dependency on natural capital. Based on this biodiversity and natural capital impact assessment of key assets, the company has identified significant impact factors across its owned business sites and the broader value chain, and is systematically establishing and implementing corresponding response and management plans.

[1)] Based on the results of S&P Global Sustainable1's comprehensive natural capital dependency score for KT&G's 147 assets (on a 0–1 scale): No dependency = 0, Very Low = 0–0.2, Low = 0.2–0.4, Moderate = 0.4–0.6, High = 0.6–0.8, Very High = 0.8+

RISK ANALYSIS OF DEPENDENCY BY ASSET TYPE



Very High	Domestic and overseas leaf tobacco cultivation areas
High	Main office buildings, manufacturing sites, sales cooperations, significant material partners, etc.
Moderate	Some significant material partners
Low	Domestic cultivation areas

ASSESSMENT RESULTS OF BIODIVERSITY AT KEY OPERATIONS (BASED ON NUMBER AND AREA OF FACILITIES, RISK EXPOSURE)

(Unit: Location (area))

Category	Total targets subject to impact assessment	Assessment results			
		Assessment completed	Key impact identified areas[1)]		Establishment of measures and plans
			Protected area[2)]	Key biodiversity area[3)]	
Owned by KT&G	20 (205 ha)	20 (205 ha)	0 (0 ha)	0 (0 ha)	0 (0 ha)
Entire value chain (including own operations)	147 (23,749 ha)	147 (23,749 ha)	18 (1,329 ha)	2 (128 ha)	20 (1,457 ha)

[1)] Significance by asset location assesses whether an asset could have a significant impact on ecosystems by identifying overlaps with protected areas (PAs) and key biodiversity areas (KBAs)

[2)] This refers to geographic space managed for the long-term conservation of ecosystem services, cultural values, and more, identified using the World Database of Projected Area (WDPA), a data set developed jointly by UNEP and IUCN.

[3)] IUCN defines them as areas that contribute to the global persistence of biodiversity based on standardized scientific criteria and thresholds, and utilizes the World Database of Key Biodiversity Areas built by the KBA Partnership, a group of 13 organizations including IUCN, WWF, and others.

RISK AND IMPACT MANAGEMENT

RISK AND OPPORTUNITY MANAGEMENT

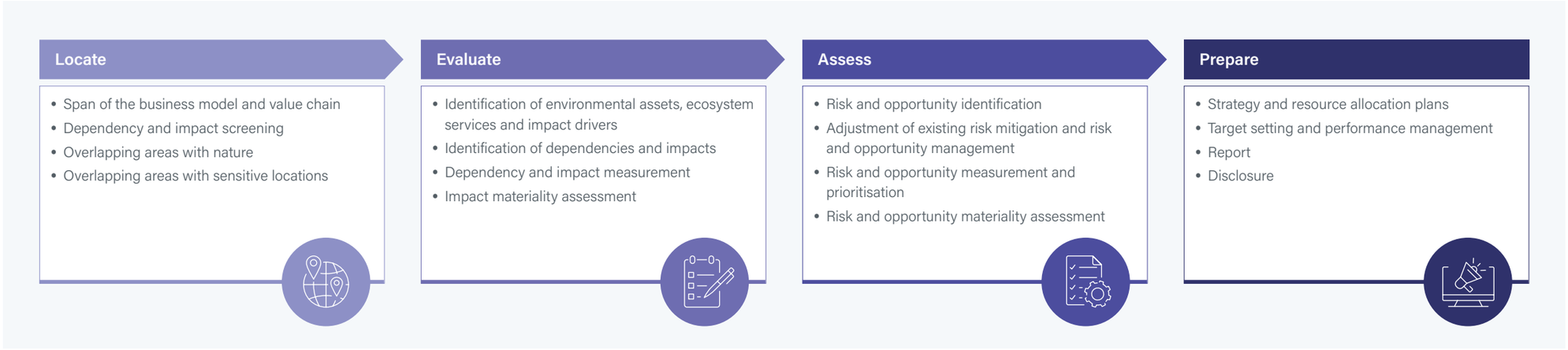
KT&G has established a natural capital management process to identify, assess, and effectively manage risks and opportunities related to natural capital across the entire value chain. This process is structured into three steps based on the LEAP framework proposed by TNFD.

In the first step, KT&G defines the scope of analysis, identifies relevant factors, and examines geographical proximity to protected areas and ecosystems in order to identify dependencies and impacts on natural capital. We operate the process with a focus on internalization and systematic enhancement based on previously identified factors, rather than repeatedly reanalyzing the same items annually, considering the characteristic that dependency and impact factors on natural capital tend not to change rapidly in the short term.

In the second step, identified risks and opportunities are assessed in terms of their impact, and priorities are set accordingly. KT&G recognizes that priorities may shift due to external changes such as global regulations, policy developments, industry trends, and evolving natural capital strategies. In the first half of 2025, we re-prioritized key risks and opportunities by expanding information disclosure and conducting scenario analysis based on TNFD recommendations. Moving forward, we will regularly re-evaluate risks and opportunities through environmental trend analysis, interviews with field personnel, and scenario-based assessments.

Lastly, in the third step, we establish and implement specific response measures to effectively manage identified risks and opportunities. Through this process, KT&G seeks to identify financial and non-financial risk factors embedded throughout its overall management, prevent potential risks in advance, and strengthen response systems to address possible future scenarios.

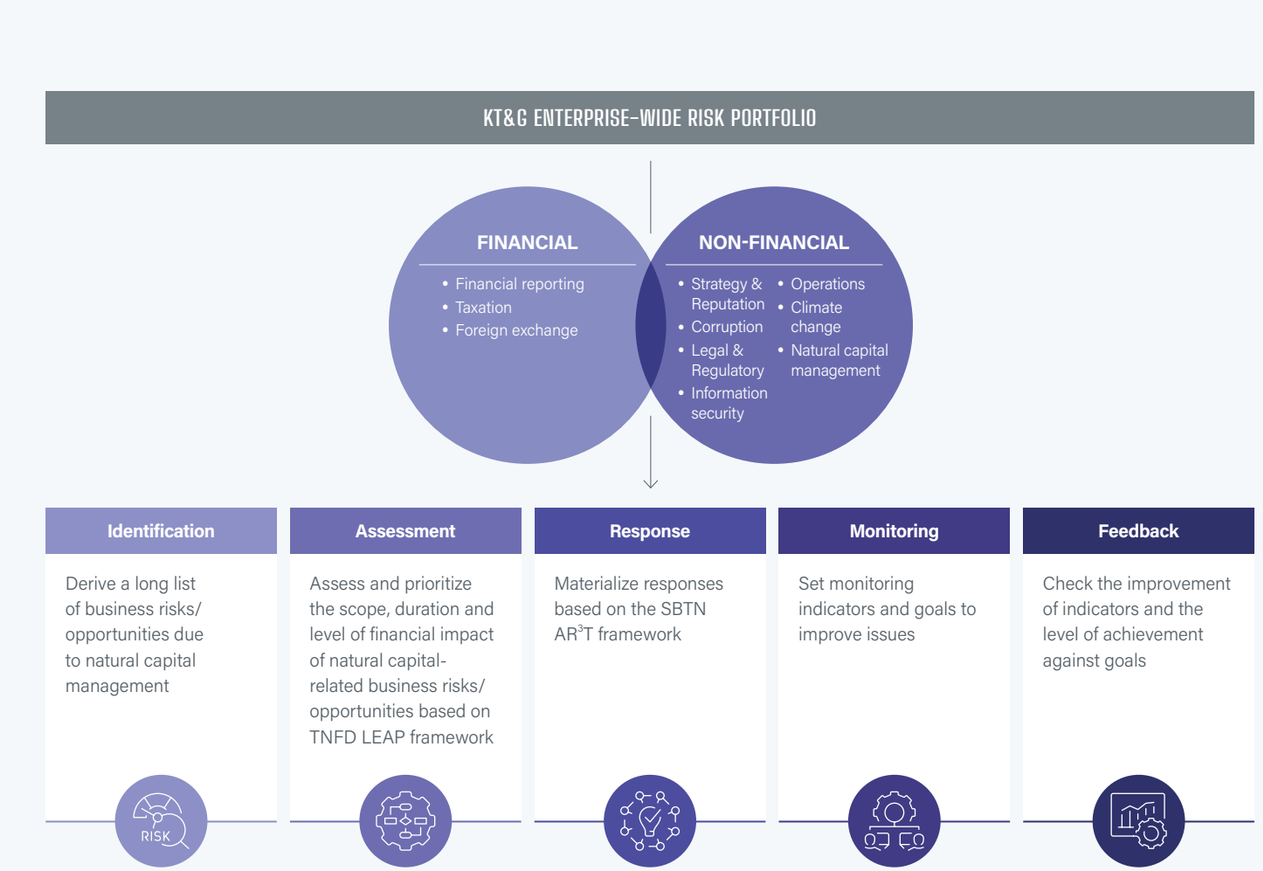
TNFD LEAP APPROACH



INTEGRATED ENTERPRISE RISK MANAGEMENT PROCESS

KT&G has newly incorporated issues related to “natural capital” and “biodiversity” as key non-financial risks within its enterprise-wide risk portfolio. We plan to establish and operate a natural capital risk assessment and management system that encompasses the entire value chain beyond our own operational sites. Furthermore, based on the established framework, we plan to systematically mitigate and improve natural capital-related risks by executing an enterprise risk management process in stages, ranging from identification to assessment, response, monitoring, and feedback. The details of KT&G’s enterprise risk management process and the operation of related organizations can be found in the “Risk Management” section of the 2024 KT&G Report.

KT&G’S NATURAL CAPITAL RISK ASSESSMENT AND MANAGEMENT SYSTEM



METRICS AND TARGETS

GOAL SETTING AND IMPLEMENTATION PERFORMANCE

2050 No Net Loss & Net Positive Impact Targets

KT&G established the "KT&G Biodiversity & No Deforestation Policy" in 2023 and officially declared the "Principles of Biodiversity Protection" within the policy. Based on this, KT&G has set a long-term direction for natural capital management aimed at achieving No Net Loss (NNL) of biodiversity in areas near key conservation zones and achieving Net Positive Impact (NPI) by 2050. Going forward, KT&G plans to pursue diverse and systematic strategic approaches to minimize negative impacts and maximize positive impacts on key natural capital, such as forests, soil, and water resources, which significantly influence the company's operations and business activities.

2030 Forest and Soil Management Metrics and Targets

KT&G is reinforcing its management systems to minimize negative impacts of business activities on natural capital, especially forests and soil, and to prevent biodiversity loss. To this end, KT&G applied the SBTN's land target-setting guidance to measure the overlap ratio between protected areas and its domestic and overseas business sites, as well as key tobacco and ginseng farms. As a result, it was confirmed that KT&G and its subsidiaries' operations do not overlap with protected areas. Additionally, over 94% of domestic tobacco farms under contract with KT&G and ginseng farms under contract with KGC are also located outside protected areas (as of 2023).

Based on these findings, KT&G Group will regularly monitor overlaps between cultivation areas for tobacco and ginseng and protected zones, conduct on-site inspections in areas of concern, and implement preventive measures. Particularly, we plan to establish a proactive management system by checking for overlap with protected areas during the contract review stage when engaging new farms, to mitigate potential risks of natural capital loss in advance.

We are also defining a more detailed scope of action to achieve our NNL and NPI goals by 2050. We have set a target of halting all deforestation and land conversion within protected areas across our supply chain, including tobacco and ginseng farms, partner companies, and business sites, by 2030. Here, the term "nature conservation areas" refers to natural forests, including protected/primary forests designated by the IUCN, as well as areas requiring high ecological preservation. KT&G is working to build a sustainable supply chain by halting deforestation and land conversion within natural forests and protected areas across the procurement of tobacco, ginseng, firewood for drying, paper, and pulp.

In particular, tobacco, wood, paper, and pulp are designated as high-impact commodities by SBTN. KT&G therefore aims to minimize negative impacts that may arise during the production and procurement processes of the relevant items and simultaneously implement active improvement measures in areas that can be restored. Furthermore, we will assess whether our value chain contributes to degradation of protected areas in neighboring communities, and extend positive impacts to forests and soil through restoration activities.

KT&G CORE METRICS

KT&G has been establishing core metrics to effectively implement its natural capital strategy and systematically manage performance, while laying the foundation for continuous monitoring. The core metrics recommended by TNFD are expected to serve as important benchmarks for quantitatively measuring impacts on natural capital and biodiversity, as well as for specifying future directions for improvement. To enhance data completeness and transparency, this TNFD Pilot Report has been structured to focus on relevant items based on the core metrics outlined in the TNFD Additional Sector Guidance – Food and Agriculture. It reflects the industry to which we belong, as well as our internal management status. Additionally, report pages providing detailed information for each item have been linked accordingly. We are in the process of establishing an internal system for collecting quantitative indicators related to the core metrics, and detailed information on specific indicators can be found in this report or other publicly available reports.

No	Indicator	Metrics		Index Location
		LV 1	LV 2	
C1.0	Total spatial footprint	Total surface area of land/freshwater/ ocean affected by corporate operations and business activities	Total surface area controlled/ managed by the organization	TNFD Pilot Report: Risk and Impact Management – Identification and Assessment (Entire Value Chain)
			Total disturbed area	TNFD Pilot Report: Risk and Impact Management – Identification and Assessment (Entire Value Chain)
			Total rehabilitated/restored area	TNFD Pilot Report: Strategy – Dependencies/Impacts and the Impact of Risks/Opportunities
C1.1	Extent of land/ freshwater/ ocean use change	Extent of land/freshwater/ocean ecosystem use change	Soil: Area of overlap with natural forests and protected/primary forests	TNFD Pilot Report: Risk and Impact Management – Identification and Assessment (Entire Value Chain)
		Extent of land/freshwater/ocean ecosystem conserved or restored voluntarily	Soil: Area of overlap with natural forests and protected/primary forests	TNFD Pilot Report: Risk and Impact Management – Identification and Assessment (Entire Value Chain)
C2.1	Wastewater discharged	Volume of water discharged	Freshwater	2024 KT&G Integrated Report: ESG Facts & Figures – Water Resources Management
			Discharge to third parties	
C2.2	Waste generation and disposal	Weight of waste generated	Non-hazardous waste	2024 KT&G Integrated Report: ESG Facts & Figures – Waste Discharge
			Hazardous waste	
		Weight of waste incinerated	Non-hazardous waste	
			Hazardous waste	
		Weight of waste sent to landfill;	Non-hazardous waste	
			Hazardous waste	
		Weight of waste treated excluding incineration and landfill	Non-hazardous waste	
			Hazardous waste	
		Weight of waste recycled	Non-hazardous waste	
			Hazardous waste	
C2.4	Non-GHG air pollutants	Non-GHG air pollutants by type	PM	2024 KT&G Integrated Report: ESG Facts & Figures – Air Pollutant Emissions
			NO_2	
			VOC	
			SOx	
			NH_3	
C3.0	Water withdrawal and consumption from areas of water scarcity	Amount of water withdrawal and consumption from areas of water scarcity	-	Water withdrawal and consumption data for the Türkiye Plant in 2024: • Withdrawal: 22,564 tons • Consumption: 31,780 tons (including reused volume)
C3.1	Quantity of natural commodities sourced from land/ocean/ freshwater	Quantity of natural commodities sourced from land	Wood (Overseas)	2024 CDP Corporate Questionnaire (8.2)
			Paper and pulp	
		Quantity of high-risk natural commodities sourced under a sustainable management plan or certification programme	Wood	TNFD Pilot Report: Strategy – Dependencies/Impacts and the Impact of Risks/Opportunities
			Paper and pulp	
C4.0	Invasive alien species and other	Measures to prevent unintentional introduction of IAS	-	TNFD Pilot Report: Strategy – Scenario Analysis


KT&G