



TNFD Disclosure by Kirin

Kirin Holdings Company, Limited

October 2023

Kirin's 4 Environmental Themes and Holistic Approach

- Kirin views its 4 material environmental issues, “biological resources,” “water resources,” “containers & packaging,” and “climate change,” as not independent but interrelated, which is consistent with TNFD’s integrated approach to climate-related and nature-related risks.

Kirin Group’s Environmental Vision 2050



Alignment with TCFD

- Since TNFD basically follows the pillars (core elements) of TCFD, TCFD disclosure should make a good launching pad for TNFD disclosure.

TNFD 2023	Governance Disclose the organisation's governance of nature-related dependencies, impacts, risks and opportunities.	Strategy Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organisation's business model, strategy and financial planning where such information is material.	Risk & impact management Describe the processes used by the organisation to identify, assess, prioritise and monitor nature-related dependencies, impacts, risks and opportunities.	Metrics & targets Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.
	Governance Disclose the organization's governance around climate-related risks and opportunities.	Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Risk Management Disclose how the organization identifies, assesses, and manages climate-related risks.	Metrics and Targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Source: [Recommendations of the Taskforce on Nature-related Financial Disclosures September 2023.pdf \(tnfd.global\)](#)
[FINAL-2017-TCFD-Report.pdf \(bbhub.io\)](#)

- In July 2022, Kirin published a high-level application of the LEAP (Locate, Evaluate, Access, Prepare) model in accordance with the original beta version of the TNFD's framework released in March 2022.

The "Location" that have a significant impact on our businesses and is important in terms of the natural and social environment

Sri Lankan tea farms

- Locate** The delicious taste of *Kirin Gogo-no-Kocha* is supported by tea farms in Sri Lanka. Water sources of large coastal cities exist on the farms.
- Evaluate** Approximately 25% of the Sri Lankan tea leaves imported by Japan are used by *Kirin Gogo-no-Kocha*. Tea production areas face increased water risk and stress due to climate change, while heavy rains run off fertile soils.
- Assess** If Sri Lankan tea leaves, on which Kirin is highly dependent, cannot be used sustainably, the product concept will fail.
- Prepare** Support Sri Lankan tea farms in obtaining The Rainforest Alliance certifications since 2013. Widely publish the number of farms that obtained the certificate and the number of farms trained in environmental reports, and on the Web.

The "Location" where water risks are high and water resource management is particularly important

Production plants in Australia

- Locate** All Kirin Group Australian brewery locations are in water-stressed watersheds
- Evaluate** Water stress in Australia is very high both empirically and when measured with such tools as Aqueduct. Once every few decades, when flooding occurs due to torrential rains, the damage is significant
- Assess** Water-saving technology is the best in the Group, but there remains a possibility that production could be disrupted in the event of a severe drought
- Prepare** Contribute to the development of the SBTs for Nature methodology and set new goals in line with this. Widely publish results in environmental reports, and on the Web.

The Japanese wine which "Location" determines the characteristics of the product

Mariko Vineyard

- Locate** An important factor that determines the taste of wine is "terroir" or the character of the land
- Evaluate** Expansion of vineyards is necessary for the expansion of the Japanese wine. The target is formerly derelict land.
- Assess** Joint research with the National Agriculture and Food Research Organization (NARO) revealed that converting derelict land into vineyards creates high-quality grasslands and contributes to a rich ecosystem
- Prepare** Contributing to Nature Positive and 30by30. Widely publish joint research results in academic papers, environmental reports, and on the Web.

Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

LEAP (2023): Locate

- This year, Kirin conducted a deep-dive analysis of Sri Lankan tea farms in accordance with v0.2 criteria for identifying priority locations.

Criteria for determining priority areas		Indicators and databases considered to correspond to each criterion for assessment	
Ecosystem integrity	Present or expected future integrity of ecosystems. Ecosystems that are damaged or low integrity are judged to be at greater risk than healthy ones (evaluated based on ecosystem integrity and health, species diversity, species extinction risk, etc.)	Red List species living in the region (total "CR" + "EN" category species) □START (threat mitigation score), STARR (recovery score)	Studies of the number of Red List species within a 50 km radius of survey sites using IBAT For STAR, analysis using the GIS software "QGIS," with data from Nature Ecology & Evolution magazine "A metric for spatially explicit contributions to science-based species targets"
Importance of biodiversity	Whether the ecosystem is internationally recognized for the importance of its biodiversity, as a biodiversity hotspot, as a protected area, or for other reasons (assessment based on factors such as the existence of legal protection, whether the area is recognized as a priority area to be protected, including important regions for biodiversity, and whether the area contains unique and local ecosystems).	Proximity to protected areas Proximity to Key Biodiversity Areas (KBAs)	Studies of the number of protected areas and KBAs within a 50 km radius of survey sites using IBAT
Water stress	Regions known to have high levels of water stress.	Baseline water stress	Studies of water stress levels at survey sites using Aqueduct Water Risk Atlas

*1 Global Map of Ecoregions: A map developed by the World Wildlife Fund (WWF) to classify and map the Earth's biomes. According to Sri Lanka's terrestrial assessment with this map, the area where the tea plantations are located is an ecoregion at risk of extinction due to its valuable endemic habitats and high water stress
 *2 A classification system developed by the United Nations Environment Programme (UNEP) for broadly classifying ecosystems on Earth
 *3 An integrated database of global biodiversity information developed by the United Nations Environment Programme's World Conservation Monitoring Centre (UNEP-WCMC)

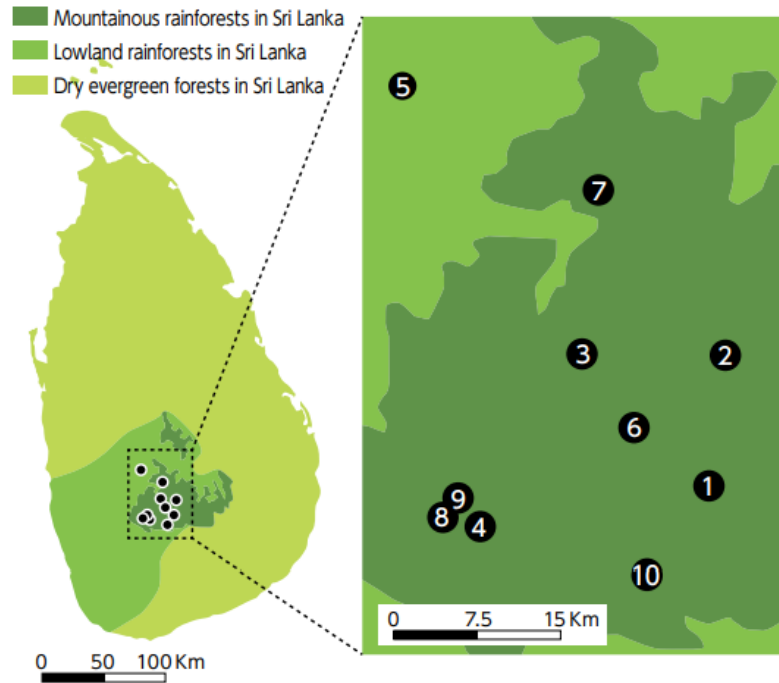
Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

LEAP (2023): Locate

- Kirin identified 10 priority locations and found that highland farms and lowland farms face different challenges.

LEAP

The regions with tea farms are home to scarce endemic species. In addition, these regions also face high levels of water stress, as well as the risk of extinction.*1



Results of analysis and asseses of 10 targeted farms.

Mountainous rainforests in Sri Lanka		Lowland rainforests in Sri Lanka
	Applicable number of farms studied	
Uva, Nuwara Eliya, Dimbula	Tea farm regions	Kandy
<ul style="list-style-type: none"> ● There are many life forms native to Sri Lanka. ● Limited distribution, with half or more of the endemic flowering plants and vertebrates living in production areas 	Regional characteristics	<ul style="list-style-type: none"> ● Existing 70% or more of Sri Lanka's endemic species. ● Abundance of endemic species of large trees and a high proportion of endemic species of small plants
<ul style="list-style-type: none"> ● Large-scale deforestation of rainforests to develop tea farms ● There are no measures in place for managing adjacent national parks and conservation areas 	Biodiversity concerns	<ul style="list-style-type: none"> ● Ecosystem damage by illegal logging of natural forests
<ul style="list-style-type: none"> ● Connecting ecosystems from high to low elevations ● Creation of green funds to purchase land for environmental conservation and establishment of public-private partnerships ● Conservation and restoration of forests at an altitude of approximately 1,515m or higher in accordance with laws and regulations 	Conservation efforts to be prioritized over the next 10 years	<ul style="list-style-type: none"> ● To maintain ecological connectivity, connect existing forests that are spread out like a mosaic and join them with neighboring protected areas ● Creation of green funds to purchase land for environmental conservation and establishment of public-private partnerships

Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

LEAP (2023): Evaluate

- Kirin evaluated the risks and opportunities from the perspectives of “dependence” and “impact” proposed by v0.4.
- Based on those evaluations, Kirin will conduct “Access” and “Prepare” steps and disclose the results next year.

LEAP

Risks and opportunities related to “dependence”

Category	Ecosystem services	Risks	Opportunities	Existing activities*2
Supply services	Water supply	<ul style="list-style-type: none"> ● Decline in yield due to lower water supply ● Conflict over water rights with local communities 	<ul style="list-style-type: none"> ● Ensuring the availability of sustainable water by protecting water sources 	<ul style="list-style-type: none"> ● Conservation activities for water sources on farms
	Genetic resources			
Coordination and maintenance services (Functions to aid production)	Water purification			
	Water flow control	<ul style="list-style-type: none"> ● Decline in yield due to poor drainage ● Occurrence of disasters 	<ul style="list-style-type: none"> ● Water flow control and improvement in drainage as Nature-based Solutions ● Improvement of water source recharge function 	<ul style="list-style-type: none"> ● Appropriate wastewater treatment in farms, factory and residence areas.
	Adjustments to soil quality			
Coordination and maintenance services (Protection from impact)	Soil and sediment retention	<ul style="list-style-type: none"> ● Decline in fertility and yield due to soil runoff ● Occurrence of disasters 	—	<ul style="list-style-type: none"> ● Cover crops on the farm lands
	Local climate regulation	—	—	
	Biological controls (pest controls, etc.)	<ul style="list-style-type: none"> ● Disease outbreak/expansion 	<ul style="list-style-type: none"> ● Reduced use of pesticides based on “Nature-based Solutions (NbS)” 	<ul style="list-style-type: none"> ● Planting plants that pests don’t like

Risks and opportunities related to “impact”

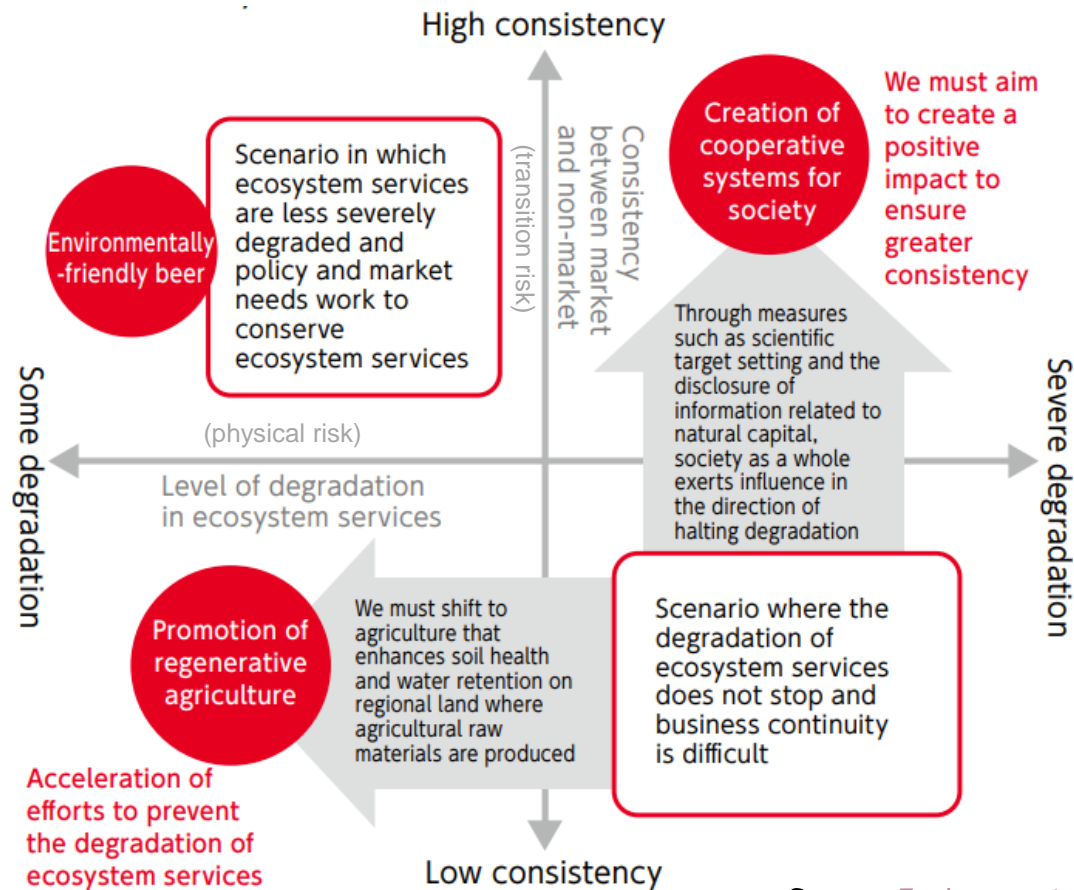
Category	Impact drivers	Risks	Opportunities	Existing activities*2
Use of ecosystems	Land ecosystem use	<ul style="list-style-type: none"> ● Loss of biodiversity through land use 	<ul style="list-style-type: none"> ● Preventing deforestation through proper land use and improved agricultural practices 	<ul style="list-style-type: none"> ● Ban on deforestation, cover crops, pesticide and fertiliser management
Use of resources	Water use	<ul style="list-style-type: none"> ● Depletion of water resources due to overuse ● Conflict over water rights with local communities 	<ul style="list-style-type: none"> ● Maintaining the availability of sustainable water and protecting yields by protecting water sources 	<ul style="list-style-type: none"> ● Conservation of Water Sources in Tea Farms
Pollution	Soil contamination	<ul style="list-style-type: none"> ● Long-term environmental pollution caused by the use of chemical fertilizers and pesticides ● Short-term decline in yield due to pesticide regulations 	<ul style="list-style-type: none"> ● Use of organic fertilizers to improve the environment and protect yields 	<ul style="list-style-type: none"> ● Appropriate use and recording of pesticides and chemical fertilisers
	Solid waste	—	—	<ul style="list-style-type: none"> ● Waste management
	Water pollution	—	—	<ul style="list-style-type: none"> ● Appropriate wastewater treatment in farms, factory and residence areas.
Climate change	Greenhouse gas emissions	—	—	
Invasive alien species, etc.	Disturbance	—	—	

*2 Activities where it can be judged that the training conducted in support of Rainforest Alliance certification at tea plantations in Sri Lanka is contributing to reducing risks and expanding opportunities identified in the assessment phase of LEAP.

Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

- Kirin participated in the pilot test of the scenario analysis framework organized by TNFD at one of Kirin's group companies, New Belgium Brewery in Fort Collins, Colorado, where water stress is very high.

TNFD Scenario Frame and the Result of Workshop



Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

Metrics and Targets

- For biological resources, Kirin sets targets for the preservation of 5 prioritized agricultural raw materials (black tea leaves, paper, palm oil, coffee beans, and soybeans).
- For water resources, Kirin sets targets by location in accordance with the water risk of the respective area.

Targets related to natural capital	Target	Achievements
Number of Large tea farms in Sri Lanka that received training for the acquisition of certification	Cumulative total of 15 large farms (2022 to 2024)	4 Large farms
Number of small tea farms in Sri Lanka that received training for the acquisition of certification	Cumulative total of 5,350 small farms (2022 to 2024)	9 small farms
Ratio of FSC-certified paper used for office paper in the Japan Non-alcoholic Beverages Business:100%	Maintain 100%	100%
Ratio of certified palm oil used in Japan	Maintain 100	100%
Ratio of renewable energy in plant purchased electric power	100%(2040)	27%
Water efficiency in Lion (Oceania region only)	2.4kl/kl(2025)	3.6kl/kl
Kyowa Hakko Bio water usage	32% reduction compared with 2015 (2030)	52% reduction compared with 2015

Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)

Kirin Environmental Report 2023

- Kirin tried to integrate the TNFD disclosure into the TCFD disclosure in its 2023 environmental report.



Source: [Environmental Report 2023 \(kirinholdings.com\)](https://www.kirinholdings.com)



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