

Assessment of Risks and Opportunities

Scenario Analysis Related to Climate Change

Physical risks

We have used the latest global tools to examine water risks and water stress at our production sites (plants and breweries), and have found that the overall level of risk is rising. Additionally, in relation to agricultural products, we believe that if we do not take sufficient measures to address climate change, it will be impossible to avoid a significant impact on the yields of key agricultural raw materials, as well as water risk and water stress by 2050 (2100 in some cases). At present, the Kirin Group is focusing on initiatives such as the diversification of suppliers, support for the acquisition of sustainable farm certification, and the development of mass plant propagation technology, and we believe that we are resilient to physical risks to some extent. Even if the Kirin Group achieves our "SBT 1.5°C" target and the "SBT Net-Zero" target, it is becoming increasingly likely that it will be difficult to completely avoid the effects of global warming. Therefore, we intend to consider appropriate adaptation measures and include them in transition plans.

Transitional risks

With regard to the financial impact of carbon pricing on energy costs, we estimate that achieving the “SBT 1.5°C” target early will reduce energy costs by approximately 4.6 billion yen (2°C scenario) in 2030. If, however, we do not achieve net-zero by 2050, the impact of carbon pricing on energy costs is estimated to be 15.7 billion yen. We also estimate that the financial impact of carbon pricing on agricultural prices will be in the same range as the financial impact of agricultural prices due to the physical effects of climate change.

* This is not a financial impact assessment that takes into account both carbon pricing and global warming impacts.

Business opportunity

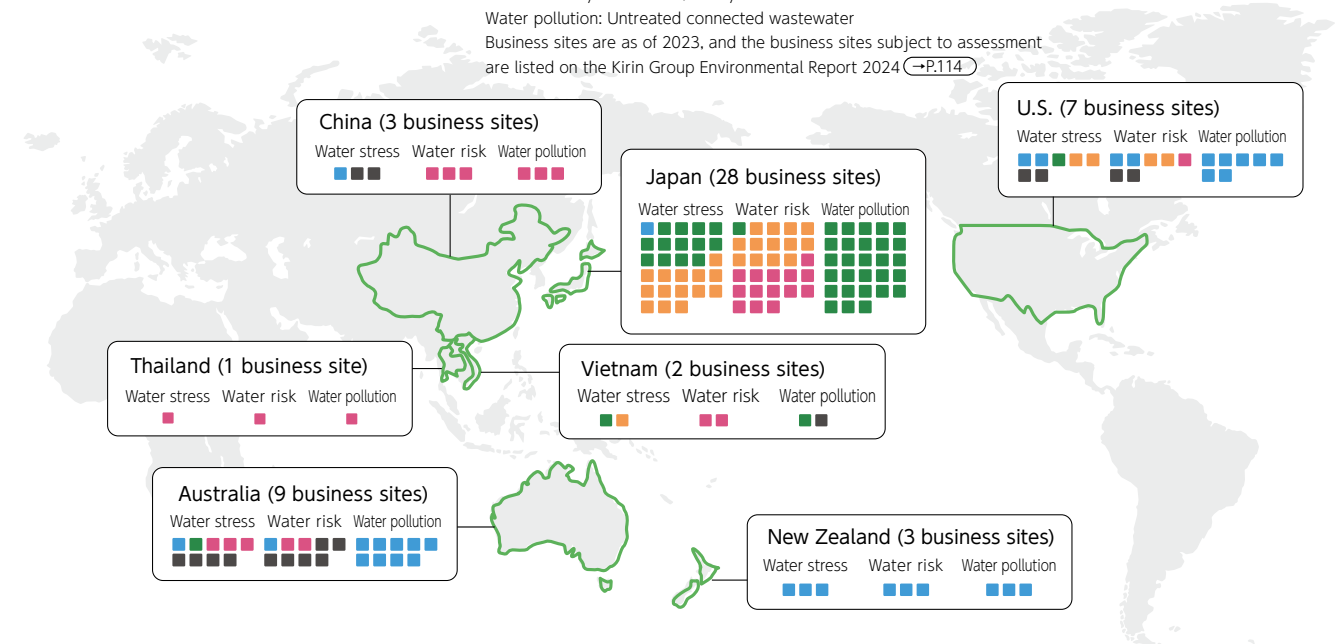
In response to the impact of climate change on society, we believe there are business opportunities related mainly to the spread of infectious diseases and heatstroke in the "Health & Well-being domain," which we have identified as a key area in our Long-Term Management Vision for 2027 (KV2027).

Water stress and risk at production sites

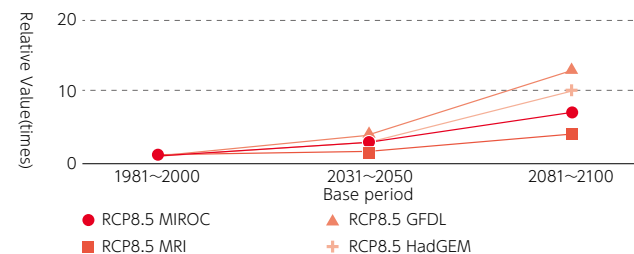
Degree of stress and risk

High ■ ■ ■ ■ ■ Low

* For water risk, water stress, and water pollution, we have referred to the following items, using the latest Aqueduct 4.0 (WRI).
Water stress: Baseline Water Stress
Water risk: Physical Risks Quantity
Water pollution: Untreated connected wastewater
Business sites are as of 2023, and the business sites subject to assessment are listed on the Kirin Group Environmental Report 2024 (P.114)



Excess deaths related to heat stress in Japan



Created by Kirin Group based on A-PLAT Projections for the Future: S-8 Research Results, published in 2016, Chart of Excess Deaths Related to Heat Stress
<https://adaptation-platform.nies.go.jp/map/national/index.html>

Forecast population exposed to risk of dengue fever under the 4°C scenario

(Upper: Ten thousand persons; Lower: Difference from not taking GDP into consideration)

	2030		2050	
Region	Without GDP consideration	With GDP consideration	Without GDP consideration	With GDP consideration
Asia-Pacific high-income countries	81	56 (▲31%)	92	69 (▲25%)
East Asia	31,093	37,559 (+21%)	28,574	21,679 (▲24%)
Southeast Asia	71,335	71,338 (0%)	75,666	75,669 (0%)

Assessment of Risks and Opportunities

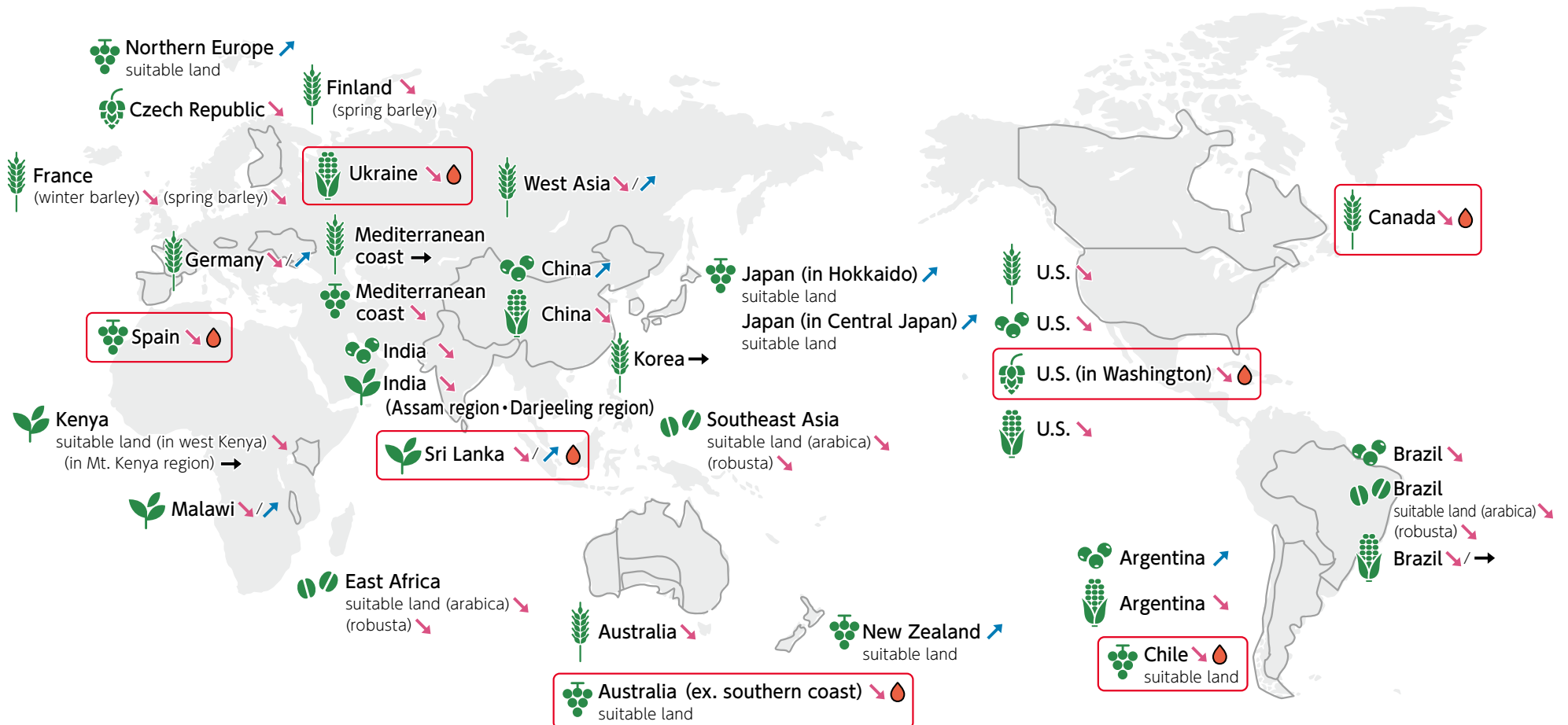
Scenario Analysis Related to Climate Change

Impact of climate change on yields of key agricultural products and water stress in agricultural production areas around 2050

Key agricultural products Barley 🌾 Hops 🍷 Tea leaves 🍵 Wine grapes 🍇 Coffee beans ☕ Corn 🌽 Soybeans 🌱

Impact on agricultural product yields or areas of suitable land for cultivation (by around 2050, some by 2100) ➡ Increase of 5% or more ➡ Change of less than 5% ➡ Decrease of 5% or more

Agricultural products sourced from regions expected to have "High to Extremely High" water stress (2050) 🔥



Assessment of Risks and Opportunities

Assessment of Risks and Opportunities Related to Natural Capital Following the LEAP Approach

In line with the LEAP (Locate, Evaluate, Assess, Prepare) approach outlined in TNFD recommendations v1.0, the Kirin Group is conducting an assessment of risks and opportunities related to natural capital. The analysis and assessment procedures are shown in the following Figure.

Analysis and assessment procedures

Scoping Determine the scope of assessment	Locate Locating our interface with nature	Evaluate Evaluating our dependencies and impacts	Assess Assessing risks and opportunities	Prepare Preparing reports
<p>Analysis and assessment from the perspective of "dependence of businesses on nature" and "impact of businesses on nature," based on the hypothesis of agricultural materials as materials</p> <p>↓</p> <p>Reiteration of the appropriateness of designating tea farms in Sri Lanka as a priority target/region</p>	<p>Survey of the state of natural capital and biodiversity in and around 10 tea farms in Sri Lanka</p> <p>↓</p> <p>Confirmation that the tea farms are located in regions with high biodiversity. Confirmation of appropriateness of priority location</p>	<p>Qualitative review of dependencies and impacts related to natural capital on tea farms in Sri Lanka</p> <p>↓</p> <p>Tea cultivation depends on water and soil, which are being damaged by climate change and economic development</p>	<p>Step1 Identification of risks and opportunities</p> <p>Identification of natural capital-related risks and opportunities for Kirin at tea farms in Sri Lanka</p> <p>↓</p> <p>Step2 Assessment of risks and opportunities through scenario analysis</p> <p>Assessment and prioritization of risks and opportunities identified in relation to natural capital</p>	<p>Disclosure in accordance with TNFD guidance</p>

Scoping implementation

Based on an overview of the business domains and value chain of the Kirin Group, we have established the hypothesis that there is a high degree of dependence and impact on nature at the stage of procuring agricultural raw materials. Accordingly, we analyzed and evaluated 21 raw agricultural products with high procurement volumes, including items covered by the "Kirin Group Action Plan for the Sustainable Use of Biological Resources", on the two axes of "impact of our businesses on nature" and "nature-related dependencies of our businesses." We then used the LEAP approach for scoping of agricultural products to be analyzed in detail.

The "Dependence on Nature-related Business" was assessed as the degree of dependence on the "provisioning services" of raw agricultural products, which is indicated as a type of reliance in TNFD's recommendations. We evaluated this using our own indicators such as "procurement amount," "the impact on group sales revenue," "the substitutability of production areas for raw materials," and "the concentration of import source country."

Concerning the "the degree of impact which our businesses have on nature," we assessed the following indicators: "carbon footprint at the cultivation stage," "land use footprint," "water footprint," and "fertilizer usage" for which data is available on a per-crop basis, and which are among the five impact factors listed by IPBES*¹ that the TNFD recommendations state should be considered. Additionally, using external databases on risk incidents, we checked whether the target agricultural products are commodities with "reputation risk" on a global scale.

*1 IPBES: An intergovernmental organization that scientifically assesses trends related to biodiversity and ecosystem services and strengthens links between science and policy

Assessment of Risks and Opportunities

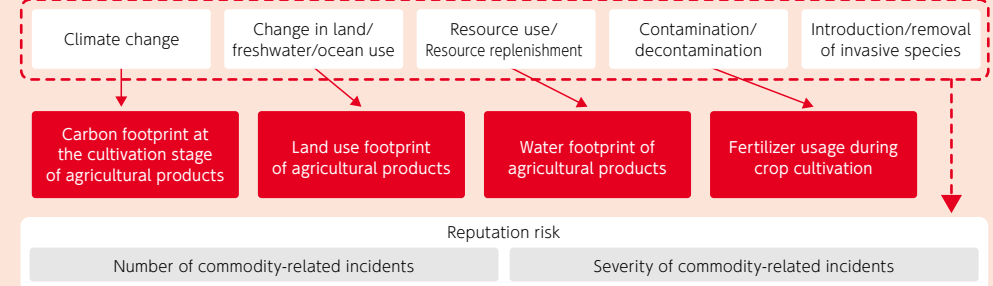
Assessment of Nature-Related Risks and Opportunities Following the LEAP Approach

Assessment procedures and heatmap of dependency and impact assessment results^{*1}

Assessment of the nature-related dependencies of businesses

Procurement amount of agricultural raw materials	Calculated from procurement data.
Percentage of total sales revenue from products for which agricultural raw materials are the main ingredient(s)	Calculate the percentage of the revenue of typical brands made from agricultural raw materials in total revenue.
The substitutability of production areas for raw materials	Established based on the judgment of procurement departments, taking into account the knowledge of natural capital in the CSV Strategy Department.
The concentration of import source country	We have estimated and assessed our bias for agricultural raw materials procured by applying the "Herfindahl-Hirschman index," which is an indicator for measuring the competitive status of companies in an industry.

Assessment of nature-related impacts of our businesses



Assessment axes		Dependence					Impact					
Ecosystem services that we depend on		Provisioning services				Relative assessment of dependency	Climate change	Change in land / freshwater / ocean use	Resource use / Resource replenishment	Pollution	Commodity risk	Relative assessment of impact
Indicators		Amount of agricultural products procured	Percentage of total sales revenue from products for which agricultural crops are the main ingredient(s)	The substitutability of production areas for raw materials	The concentration of import source country		GHG emissions	Acreage per unit yield	Freshwater use (water footprint)	Fertilizer usage per unit area	Number of commodity-related incidents X severity	
Raw commodity	Corn											
	Barley											
	Wheat											
	Rice											
	Soybeans											
	Sugarcane											
	Hops											
	Black tea leaves											
	Green tea leaves											
	Oolong tea leaves											
	Coffee beans											
	Powdered milk											
	Raw milk											
	Grapefruit											
	Lemon											
	Orange											
	Grapes											
	Apple											
	Tomato											
	Plum											
	Palm oil											

High ■ ■ ■ Low

^{*1} The carbon footprint is based on the ClimateHub database, land use data comes from the FAO's 2022 release, freshwater data is from Mekonnen and Hoekstra (2011), fertilizer use is based on IFASTAT (2018), and reputational risk is assessed using RepRisk.

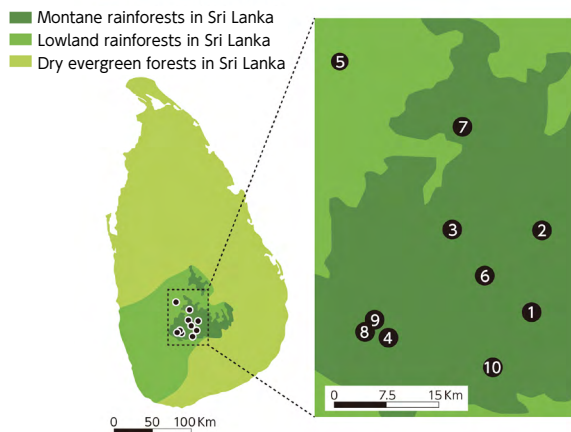
Assessment of Risks and Opportunities

Assessment of Nature-Related Risks and Opportunities Following the LEAP Approach

Results of materiality analysis assessment in scoping

Based on the results of the assessment of nature-related dependencies and impacts of our businesses, as well as whether the product is listed on the EUDR and/or SBTN High Impact Commodity List, procurement volume, and strategic priority, we have identified priority agricultural products for which we should conduct a more detailed assessment of risks and opportunities in line with the LEAP approach. Starting in 2025, we plan to analyze approximately 10 priority agricultural products following the LEAP approach. As an initial example of this analysis, we highlight our efforts related to Sri Lankan tea plantations, one of the identified priority agricultural products.

Sri Lankan tea plantations



Locate (the interface with nature)

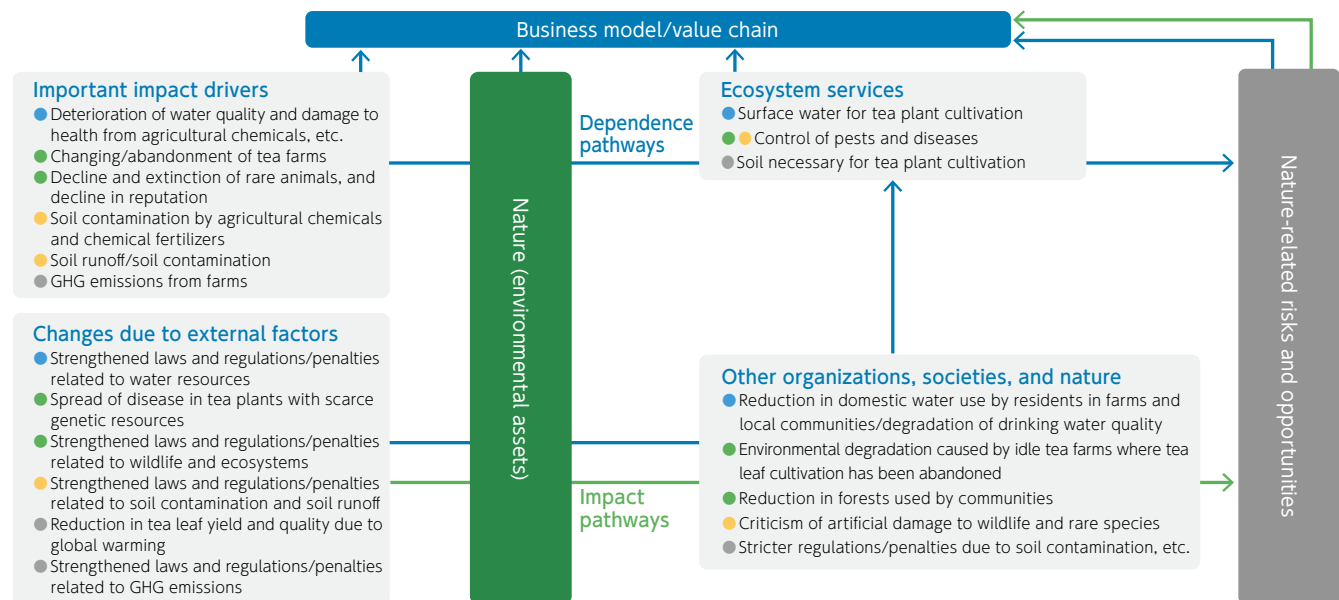
The sustainable procurement of Sri Lankan tea leaves, which enhance the flavor of “Kirin Gogo-no-Kocha,” has a significant impact on our business and represents a key focus area from both natural and social environmental perspectives. Consequently, the Kirin Group has identified Sri Lankan tea plantations as priority areas and investigated their ecosystems to identify concerns and determine necessary actions. We analyzed 10 tea plantations, which are suppliers to the Kirin Group, focusing on their biomes, ecosystem integrity, biodiversity significance, and water stress levels. The results revealed that these tea plantations are situated in montane and lowland tropical

rainforests, habitats for many endemic species. Despite their proximity to national parks and reserves, there is a notable lack of effective conservation measures in place.

Evaluate (Dependencies & impacts)

We analyzed how business processes and activities at these Sri Lankan tea plantations depend on and impact natural capital. Based on a list of key impact drivers and ecosystem services, we summarized the dependency and impact pathways for each of the four environmental assets (water resources, land ecosystems, land, and atmospheric systems) as shown in the following figure.

Relationship between dependency and impact pathways



* Impact drivers and external factors are color-coded for each of the four environmental assets (water resources, land ecosystems, land, and air). In fact, we have analyzed and assessed each risk and opportunity in detail, but we have only provided the key points here.

Assessment of Risks and Opportunities

Assessment of Nature-Related Risks and Opportunities Following the LEAP Approach

Assess (Risks & opportunities)

As part of the Evaluate phase, we identified relevant external factors and stakeholders (e.g. policies and regulations, consumers, investors) for each material natural capital item. Based on this, we extracted potential risks and opportunities.

Subsequently, we conducted a scenario analysis. The horizontal axis of the scenarios represents the “degree of ecosystem service degradation,” with the left side indicating moderate degradation and the right side indicating severe degradation. The vertical axis represents market principles, with the upper end indicating strong alignment between regulatory measures and market behavior toward nature-positive outcomes, and the lower end reflecting limited regulatory effectiveness and low levels of interest from consumers and investors. Based on these axes, four scenarios were

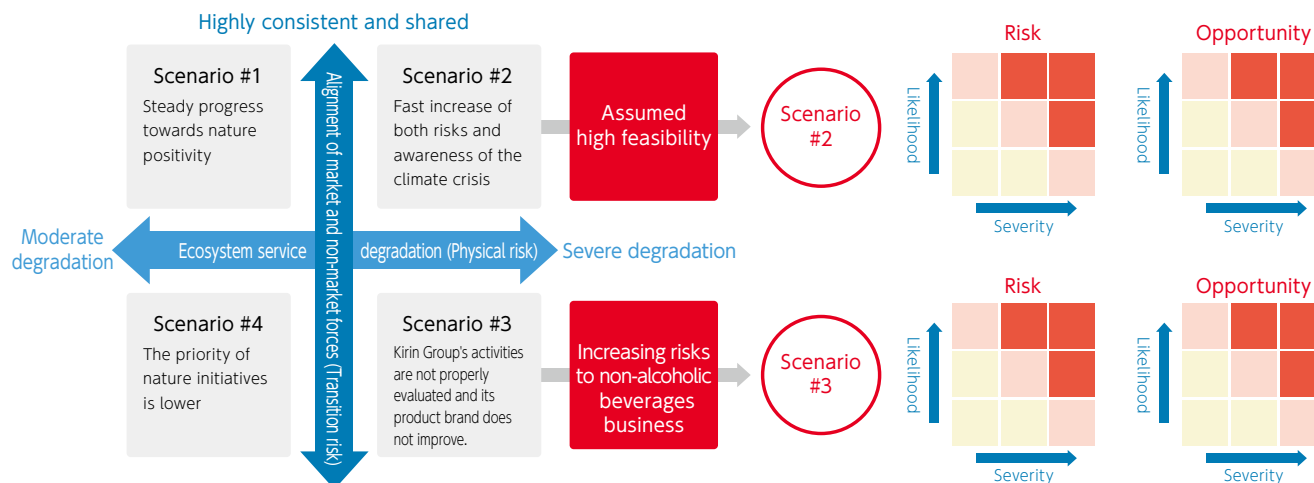
developed. Among these, Scenarios #2 and #3, which assume a more severe degradation of nature, were identified as the most plausible. For each associated risk and opportunity, a risk map was developed and evaluated based on the likelihood of occurrence and severity of impact in terms of financial materiality. The results revealed that Sri Lankan tea plantations face various nature-related risks, including climate change, natural degradation, labor force reduction, increased costs due to economic development, and strengthened regulations. On the other hand, by reducing risks through sustainable agriculture, regenerative agriculture, thorough human rights due diligence on plantations, and fair trade procurement, there are opportunities for stable production and tapping into the ethical consumption market.

Prepare (To respond & report)

From the perspective of risk reduction and opportunity acquisition, the Kirin Group’s support for obtaining Rainforest Alliance (RA) certification for plantations since 2013, and the promotion of the “Regenerative Tea Scorecard” introduced in 2024 to practice regenerative agriculture, is considered to be effective. These measures and achievements are detailed in the “Metric and Targets” section as activity (details on sustainable farm certification support → P.39, details on the Regenerative Tea Scorecard → P.66).

To manage the progress of these initiatives, we are also preparing to set goals that align with science and international targets related to nature.

Overview of nature-related scenario analysis



Policies, regulations, consumers and investors will remain unchanged from January 2024

Financial impact

Financial impact assessment

We assessed the financial impacts of climate change, natural capital, and containers and packaging, and summarized the interrelated impacts. Estimates of the financial impact related to climate change and natural capital are limited, and we cannot determine risk from financial impact estimates alone. Accordingly, we have combined these estimates with qualitative analysis and assessments from scenario analysis for reflection in our strategies.

* The calculation methods for each financial impact are as follows:

- *1 Reduced yields of agricultural products due to climate change: Estimated from standard prices for beer by country as shown in the results of research using the economic models of Xie et al., and the research results of Hasegawa et al., as presented in the IPCC "Special Report on Climate Change and Land (SRCLL)."
- *2 Energy usage in 2024 and energy prices due to carbon pricing: Estimated from Current Policies Scenario and Sustainable Development Scenario in Annex A of the IEA "World Energy Outlook 2019," and the IPCC Special Report on Global Warming of 1.5°C, etc.
- *3 Carbon pricing and prices of agricultural products: Estimated from the research results of Hasegawa et al., as presented in the IPCC "Special Report on Climate Change and Land (SRCLL)."
- *4 Flood risk: The sum of the results of estimations for 200-year disasters for 20 locations in Japan using the wind and flood damage model flood simulation. In addition, the actual amount of damage caused by past disasters in the cases of Lion's Castlemaine Perkins Brewery (approx. 1 billion yen) and Kirin Brewery's Sendai Plant (approx. 5 billion yen).
- *5 Drought risk: Hypothetical situation where production is affected by a drought for a certain period of time.
- *6 Negative impact of PET bottles: Estimated the financial impact in the event of a negative influence on natural capital from improperly disposed of used PET bottles that leak into the ocean from available statistics based on the company's own production volume ratios.
- *7 Procurement of Recycled PET Resin: An internal estimate of the incremental cost required to procure the volume of recycled PET resin necessary to meet the targets set forth in the Kirin Group Plastic Policy, based on the unit prices assumed at the time the policy was formulated.
- *8 Risk from transition to certified products: Estimation of expenses from switching to tea and coffee procured from certified sustainable farms to the extent currently possible.
- *9 Infectious diseases: Estimated from WHO "Quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s" and "Dengue and severe dengue," January 10 2022.
- *10 Heatstroke: Estimated from a S-8 2014 Report by Project Team of Comprehensive Study on Impact Assessment and Adaptation for Climate Change.
- *11 Food waste reduction: Estimated from the cost reduction effect if the target is achieved (Kirin Brewery, Kirin Beverage, Mercian, Koivai Dairy Products).
- *12 Reduction in agricultural chemicals and fertilizers: Estimated reduction in costs associated with the reduction of chemical fertilizers and pesticides for coffee farms in Vietnam
- *13 Flood exposure: Estimated from wind and flood damage model flood simulations and actual data
- *14 Residual value of related facilities due to strengthening of energy-saving legislation: Residual value of boilers and trucks (both are assumed to have a very low possibility of being discontinued before the end of their useful life in the event fuel conversion is mandated by law. We have determined that there will be no financial impact, but for reference purposes, we disclose the residual value)

Estimated financial and asset impact

Environmental themes	Risk types	Business risks / social issues	Financial impacts
Climate change	Physical risk	Decline in yields of agricultural products* ¹	2°C scenario: 1.2 billion yen to 3.2 billion yen (2050) 4°C scenario: 3.1 billion yen to 12.2 billion yen (2050)
	Transitional risk	Financial impact of energy due to carbon pricing* ²	1.5°C scenario: 9.8 billion yen (2030) 15.7 billion yen (2050) 2°C scenario: 9.1 billion yen (2030) 12.5 billion yen (2050) 4°C scenario: 5.4 billion yen (2030) 5.9 billion yen (2050)
		Financial impact of agricultural products due to carbon pricing* ³	RCP2.6/SSP1: 0.9 billion yen to 4.0 billion yen (2050) RCP8.5/SSP3: 2.2 billion yen to 8.0 billion yen (2050)
Climate change and natural capital	Physical risk	Disruptions to operations owing to floods* ⁴	Wind and flood damage simulation results: 1 billion yen Actual data from past disasters (1 billion yen to 5 billion yen)
		Disruptions to operations owing to droughts* ⁵	0 billion yen to 0.6 billion yen
Natural capital and containers and packaging	Physical risk	Negative impact of PET bottles* ⁶	1.1 billion yen
	Transitional risks	Procurement of recycled PET resin* ⁷	2.0 billion yen (2027)
		Procurement of certified products* ⁸	0.1 billion yen
Climate change	Business opportunity	Increase in infectious diseases* ⁹	Market for immunity and health supplements: 28,961.4 million US dollars (2030)
		Increase in heatstroke* ¹⁰	Market for non-alcoholic beverages that prevent heatstroke: 94 billion yen to 188 billion yen (2100, 4°C scenario)
Natural capital	Business opportunity	Reducing food waste* ¹¹	0.9 billion yen
		Financial impact from the reduction of chemical fertilizers and pesticides for coffee farms in Vietnam* ¹²	0.1 billion yen
Environmental themes	Risk types	Business risks / social issues	Financial impacts
Climate change	Transitional risks	Exposure of production sites to floods* ¹³	1.0 billion yen to 5.0 billion yen
		Residual value of related facilities due to strengthening of energy-saving legislation* ¹⁴	1.1 billion yen

Transition Plans

Investment and financial plans

We have formulated holistic business transition plans which aim to simultaneously realize a decarbonized society, Nature Positive, and Circular Economy, ensuring business continuity.

Our transition plans from the perspective of climate change mitigation and adaptation are shown in the figure on the right.

Investment plans and financing plans

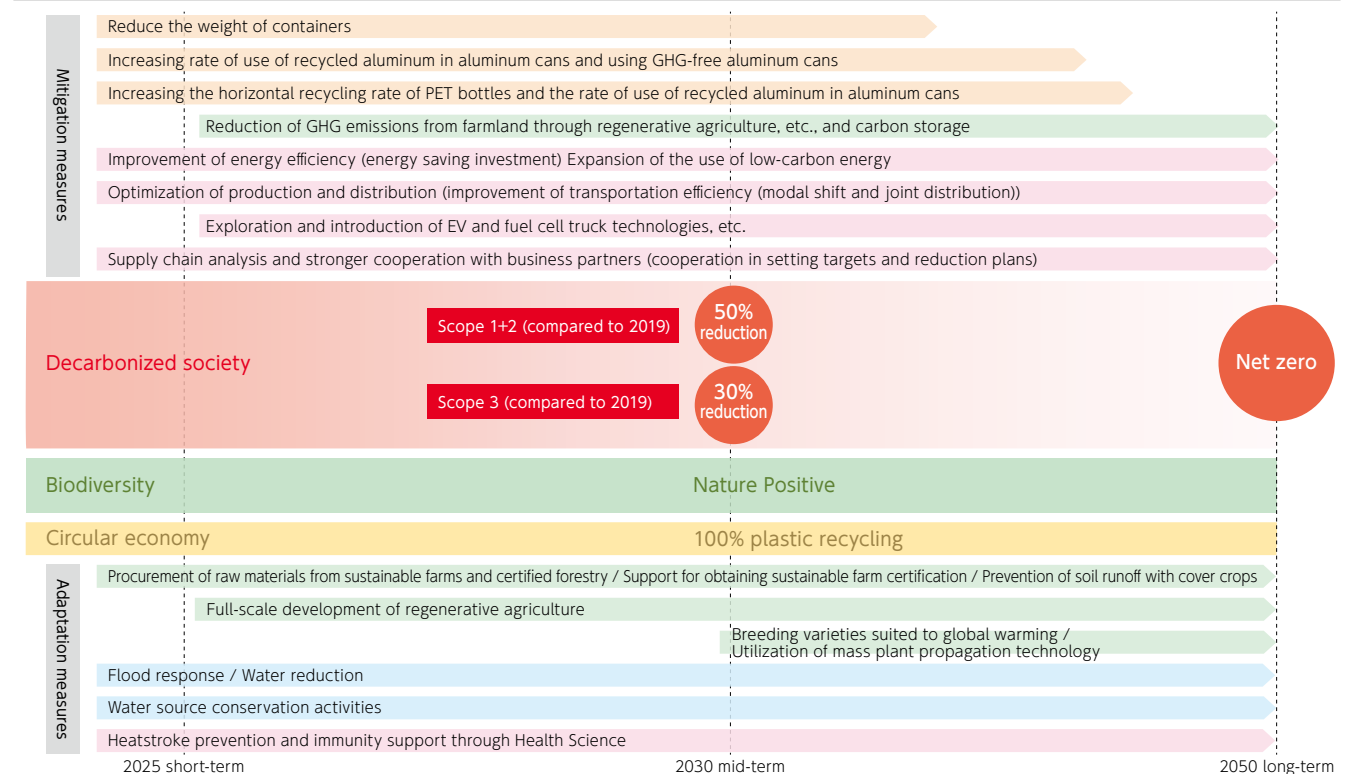
Investment and financing plans for “Scope 1+2 GHG emissions reduction” and “expansion of the use of recycled PET resin” are shown in the figure on the bottom right. Additionally, when considering “Scope 3 transition plans” in the future, we will consider transition strategies related to “Nature Positive” and “Circular Economy,” and thus formulate holistic plans that also incorporate investments and costs.

We make investment decisions based on annual plans to address issues related to containers and packaging other than expanding the use of recycled PET resin.

As part of the transition plan towards Nature Positive, we have activities such as supporting certification acquisition at Sri Lankan tea plantations, developing and pilot testing of Regenerative Tea Scorecard for regenerative agriculture, and conducting joint research with NARO at Mariko Vineyard, which includes GHG strage. Additionally, we are considering the full-scale implementation of regenerative agriculture and expanding efforts to other raw agricultural products such as soybeans, hops, and barley, beyond the tea leaves and wine grapes we have already addressed. We anticipate that these activities will require associated research and deployment costs.

The main targets for the reduction of Scope 3 emissions are containers and packaging and agricultural raw materials. We envisage that regenerative agriculture will be a key adaptation and mitigation measure for climate change related to agricultural raw materials.

Image of an integrated transition plan from the perspective of climate change



Investment plans and financing plans (partial)

	Investment plans	Financing plans
Scope 1+2 GHG emissions reduction	<ul style="list-style-type: none"> Plan to reduce GHG emissions on a profit - and - loss neutral basis by balancing energy cost reductions by saving energy and transition costs (e.g. CAPEX of projects and cost premium of renewables) In order to promote environmental investments, we will use the Net Present Value (NPV) as an indicator for environmental investments aimed mainly at reducing GHG emissions, and we have also introduced ICP (Internal Carbon Pricing) as a method for making investment decisions Plan to consider strategies for 2030 and beyond, based on the assumption that there will be infrastructure and technological innovation 	<ul style="list-style-type: none"> In 2020, we issued a green bond (10 billion yen) to finance the procurement of recycled PET resin and the installation of a heat pump system at plants In December 2022, we became the first food and beverage company in Japan to develop a framework that complies with transition finance-related guidelines, etc., and to have obtained a second party opinion from an independent third party in order to promote transition initiatives on the finance side In January 2023, we became the first food and beverage company in Japan to raise funds with a transition-linked loan (50 billion yen), which is aimed at financing energy conservation and renewable energy-related projects that contribute to reducing Scope 1 and Scope 2 emissions
Expanded use of recycled PET resin	<ul style="list-style-type: none"> Enhance manufacturing facilities for small PET bottles at the Kirin Beverage Shonan Plant (investment of approximately 10 billion yen) Plan to formulate investment roadmaps with a view to developing practical applications for chemical recycling 	

Transition Plans

Plan to transition to a decarbonized society

The Kirin Group is working to reduce GHG emissions based on a roadmap consistent with the "SBT 1.5°C" target for 2030 and the "SBT Net-Zero" target for 2050. We plan to materialize not only to reduce GHG emissions, but also to mitigate and adapt to climate change.

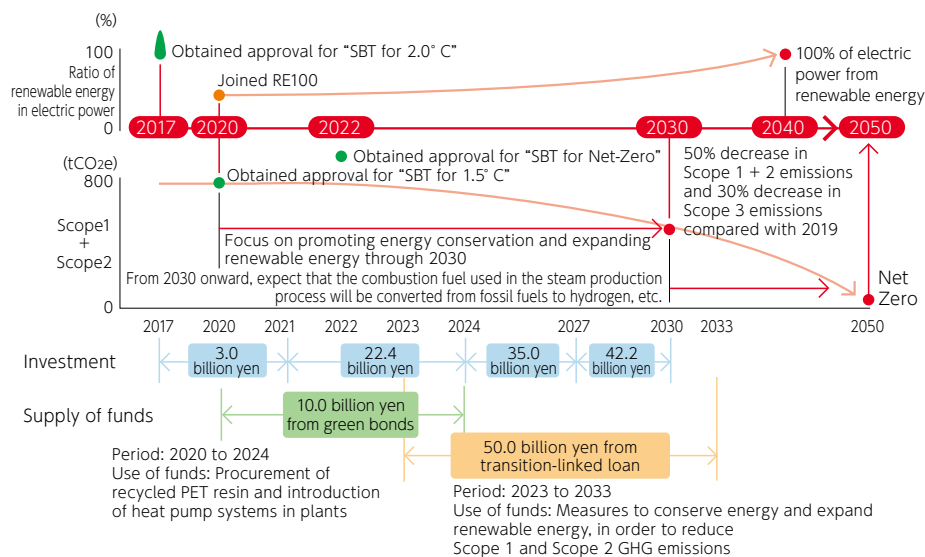
Scope 1+2 emissions reduction

Our roadmap for reducing Scope 1 and Scope 2 emissions by 2030, as well as our investment and financing plans, is shown in the figure below.

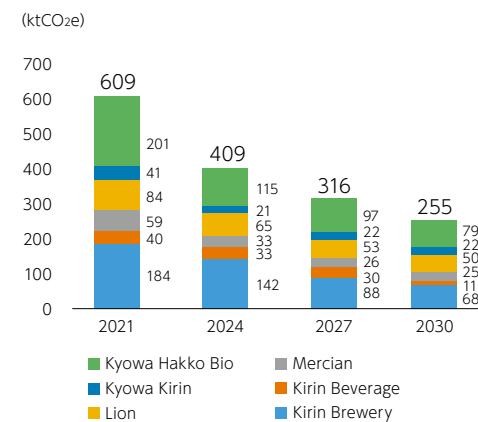
We will take a three-pronged approach to reducing Scope 1 and Scope 2 emissions, namely: "promotion of energy conservation," "expansion of renewable energy," and "energy transition," and will also develop ways to optimize production and logistics, etc. Our actions in each area are on the right.

	Action
Promotion of energy conservation	<ul style="list-style-type: none"> ● Kirin Brewery introduced heat pump systems at the wastewater treatment facilities of six plants in 2019 ● At Shinshu Beverage, we reuse waste heat, which is difficult to use directly in rinsing processes for bottles and caps, through a heat pump unit ● At the Kirin Brewery Okayama Plant, we reuse waste heat in hot water sterilization equipment for cans and heat in the air
Expansion of renewable energy	<ul style="list-style-type: none"> ● At Kirin Brewery, we have installed large-scale solar power generation facilities at all nine plants (PPA model at eight plants excluding the Yokohama Brewery) ● Mercian introduced solar power generation using a PPA model at the Fujisawa Plant ● Kyowa Kirin introduced a large-scale solar power generation facility (1.47MW) using a PPA model at the Ube Plant ● Kyowa Hakko Bio introduced solar power generation using a PPA model at the Hofu Plant ● Lion acquired carbon neutral certification in Australia, as well as Toitū carbon zero certification in New Zealand ● Lion installed solar power generation facilities at Castlemaine Perkins Brewery and Little Creatures Geelong Brewery
Energy transition	<ul style="list-style-type: none"> ● Completed the transition of fuel to natural gas at all Kirin Brewery and Kirin Beverage plants, as well as the Mercian Yatsushiro plant ● Lion plans to install an electric boiler at a brewery in New Zealand. The company plans to expand its use of electric power generated from renewable energy ● At Kirin Brewery Hokkaido Chitose Plant, a demonstration project to transition energy from fossil fuels to green hydrogen will commence in June 2026

Roadmap to Net-Zero

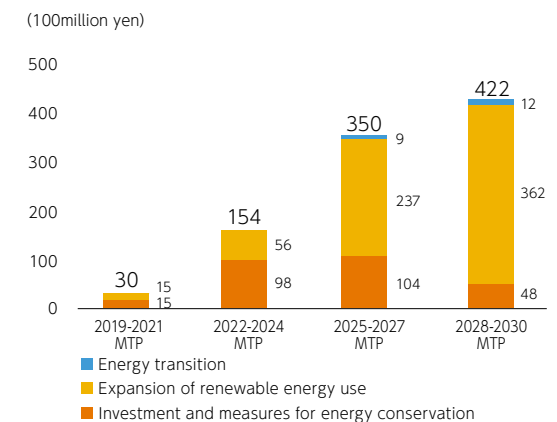


Reduction of Scope 1 and Scope 2 emissions*



*Company information that is deemed to have a significant impact on group management and GHG emissions is extracted and disclosed. We will review the companies to be extracted in the future as appropriate.

Investment



Transition Plans

Plan to transition to a decarbonized society

Scope 3 emissions reductions

Of the categories in the "Scope 3 Standard" of the GHG Protocol, Category 1 (purchased goods and services) emissions from "containers and packaging" and "agricultural raw materials" account for approximately 70% of the Kirin Group's Scope 3 emissions. Category 4 (upstream transportation and distribution) emissions from "transportation" make up approximately 10% of the total.

We will continue working to reduce Scope 3 emissions through the two approaches of the "reduction of our own independent emissions" and "encouragement of reduction at suppliers." Transportation and containers and packaging are the targets for reducing our own independent emissions. Using the technologies of Institute for Package Innovation, which is the largest research institute in the world owned by a consumer goods manufacturer, to reduce GHG emissions from containers and packaging materials. We encourage suppliers to reduce GHG emissions from the produc-

tion of containers and packaging and their materials, and GHG emissions during the production of agricultural raw materials. We have determined that regenerative agriculture is effective way to reduce GHG emissions from agricultural products. Our key actions are as follows.

To address the challenges related to Scope 3 emissions, we have requested all suppliers to comply with the "Kirin Group Sustainable Supplier Code," which includes measures to tackle climate change. Additionally, in April 2024, we launched the "Supply Chain Environmental Program." This initiative aims to enhance collaboration with high GHG-emitting business partners and reduce Scope 3 emission through three main pillars: mutual disclosure of actual GHG emission data, setting and supporting GHG emission reduction targets at the SBT level, and collaboration on GHG emission reduction efforts. This initiative is expected to contribute to a 10% reduction in Scope 3 emissions, which accounts for one-third of our medium-term goal to reduce group-wide GHG Scope

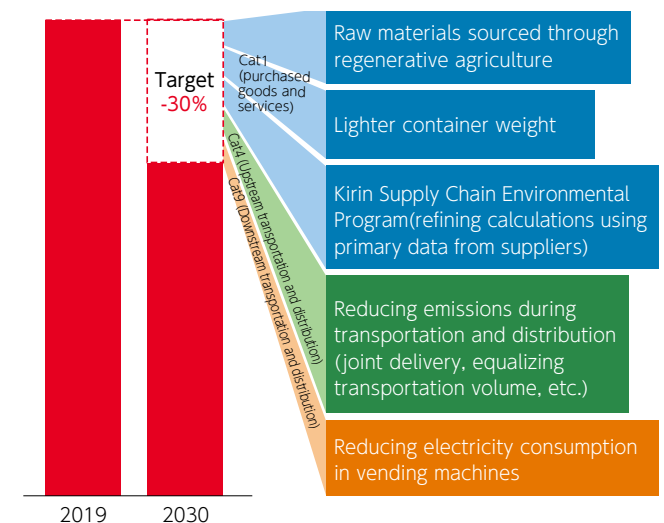
3 emissions by 30% by 2030 compared to 2019. Combined with other measures targeting Scope 3 emission categories 1, 4, and 9, we plan to achieve a total reduction of 30%.

Lion is a member of the Australian Climate Leaders Coalition, a group of Australian company CEOs. Within this group, we have confirmed that using a system where actual GHG emission data is pooled by a third-party organization without mutual disclosure among value chain companies such as suppliers and retailers, allows for a more accurate understanding of Scope 3 emissions. This approach serves as a starting point for collaboration among stakeholders to collaborate how to reduce emissions throughout the value chain, raising Scope 3 reduction targets and leading to more effective actions. Additionally, we use the calculation of the carbon footprint (CFP) per product to visualize and set targets for GHG reduction across the entire supply chain. These results are featured in the publication "Scope 3 Roadmap" by the Australian Climate Leaders Coalition.

Scope 3 emissions reduction actions led by our company in collaboration with external partners

	Action
Containers and packaging (about 30% of Scope 3 emissions)	<ul style="list-style-type: none"> ● In addition to reducing the weight of cans, we will also increase the rate of CAN to CAN recycling, reducing the use of virgin materials and increasing the rate of use of recycled materials as much as possible ● For aluminum cans, considering the practical application of GHG-free aluminum refined with renewable energy and low-emission aluminum with a higher recycling rate, we are exploring the introduction of carbon-free aluminum cans ● Joint adoption of "EcoEnd" can lids with a higher recycled aluminum ratio by four beer manufacturers ● For PET bottles, in order to increase the PET to PET horizontal recycling rate, we will increase the use of mechanically and chemically recycled materials, while also reducing GHG emissions from the manufacturing process ● We will contribute to the reduction of GHG emissions from transportation by reducing the weight of containers and packaging ● Refine Scope 3 emission calculations by accurately capturing actual GHG emission reduction amount through the Supply Chain Environmental Program ● Strengthen Scope 3 emissions reduction efforts through participation in the Australian Climate Leaders Coalition
Agricultural raw materials (about 30% of Scope 3 emissions)	<ul style="list-style-type: none"> ● Initiation of joint research on the accurate measurement of GHG emissions from soil at Mariko Vineyard and carbon storage using biochar from pruning debris ● New Belgium Brewing (U.S.) has begun procuring barley through regenerative agriculture
Transportation (about 10% of Scope 3 emissions)	<ul style="list-style-type: none"> ● Optimize production and logistics (including the use of AI and on-site warehouses), level transportation volumes, conduct joint deliveries, and shift to modal transportation. ● Reduce emissions during maritime transportation by importing wine in large-capacity bags. ● Consideration of conversion to fuel cell trucks and EV trucks

Scope 3 emissions reduction actions



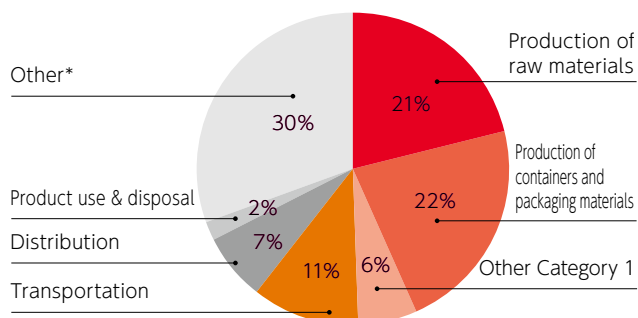
Transition Plans

Plan to transition to a decarbonized society

GHG emission reductions from agricultural raw materials

For upstream suppliers (farmers), it is important to reduce GHG emissions from the cultivation process of agricultural raw materials through regenerative agriculture and to decarbonize the energy needed for transportation and storage. For raw material processing companies, reductions can be achieved through process improvements such as energy conservation, the use of renewable energy, and energy conversions. As a product manufacturer, reaching upstream suppliers can sometimes be challenging. In such cases, procuring certified products that have implemented various GHG reduction measures in these upstream processes can be an effective option. Additionally, implementing food loss countermeasures and recycling at each stage can help reduce GHG emissions associated with waste. Regarding agricultural raw materials, we have positioned Japan's Mariko Vineyard and Sri Lankan tea plantations as model cases to accumulate knowledge on climate change mitigation and adaptation through regenerative agriculture. The insights gained will be applied to other agricultural products and production areas. Furthermore, we have started verifying a technology for long-term evaluation of soil sequestration using satellite data. In this verification, we aim to establish a technology to measure carbon sequestration without soil sampling or measurements in the production area fields, using barley fields with high procurement volumes as test sites.

Proportion of Scope 3 emissions



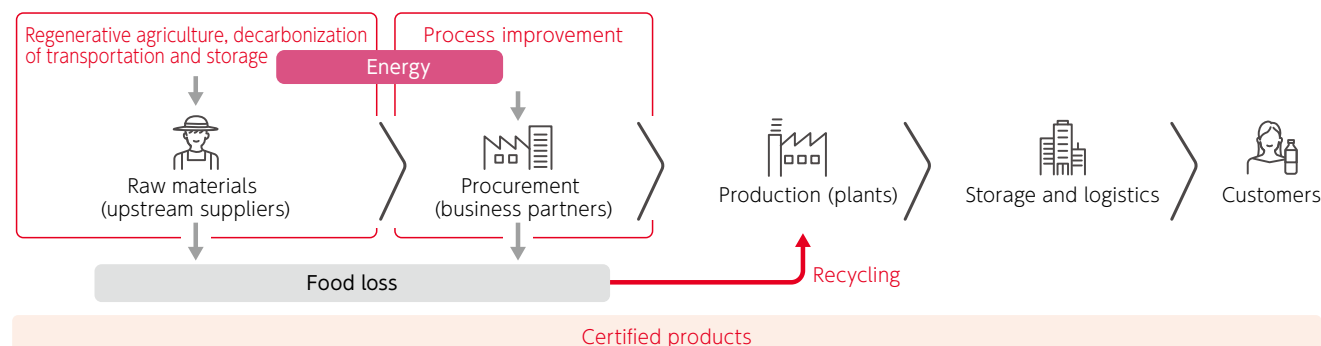
* Emissions other than the above (emissions from the manufacture and transportation of capital goods, fuel, etc., waste from business operations, travel and commuting of employees, etc.)

GHG emission reductions from containers and packaging

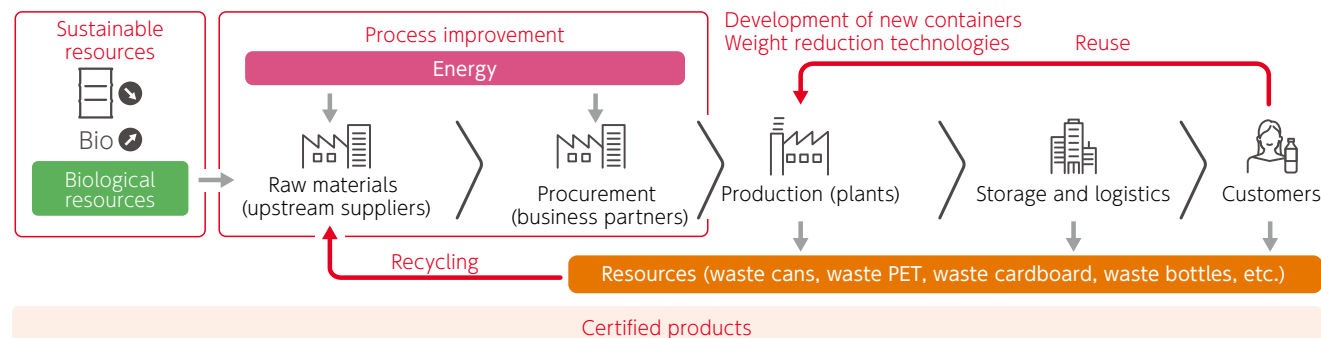
In reducing GHG emissions from containers and packaging, recycling and reuse as much as possible is the priority. Additionally, selecting and switching to sustainable materials such as paper and biomass PET is crucial. Upstream suppliers (of materials) and processing companies are expected to implement process improvements for GHG reductions through energy conservation, the use of renewable energy, and energy transitions, as well as decarbonizing the energy needed for transportation and storage. As a product

manufacturer like the Kirin Group, procuring certified products that have implemented various GHG reduction measures in these upstream processes can be an effective option. Moreover, reducing the amount of containers and packaging used through the development of new functionalities, new materials, and lightweight packaging is essential when advancing energy reduction and renewable energy use in recycling, processing, and transportation throughout the supply chain. Recycling used resources and reusing bottles can also help reduce GHG emissions associated with waste.

Approach to reducing GHG emissions from agricultural raw materials



Approach to reducing GHG emissions from containers and packaging



Transition Plans

Plan to transition to Nature Positive

We will organize our transition to Nature Positive using the AR3T (Avoid, Reduce, Restore & Regenerate, Transform) framework for natural capital proposed by the SBTN (SBTs for Nature).

On March 29, 2024, the Ministry of the Environment, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of Economy, Trade and Industry, and the Ministry of Land, Infrastructure, Transport and Tourism jointly announced the “Transition Strategies toward Nature Positive Economy,” reflecting discussions by the Ministry of the Environment’s “Study Group on Nature Positive Economies,” in which the Kirin Group participated. One of the three points of view presented in this report is the “necessity of transition to Nature Positive business and contribution to the conservation of natural capital and value creation.”

Projects in Sri Lanka and at vineyards in Japan are examples of “Nature Positive through business,” in which we will restore and maintain “secondary nature” through business activities, and we believe that these examples fall under the “contribution to the conservation of natural capital and value creation” in the Ministry of the Environment’s transition strategies.

We have adopted a landscape approach, which is “a method for sustainably solving issues based on a comprehensive treatment of various human activities and the natural environment in raw material production areas,” to address issues related to “indigenous peoples, local communities, and affected stakeholders,” which the TNFD requires to be disclosed. In addition to Kirin’s engagement with local communities at Sri Lankan tea plantations and Japanese vineyards, Lion provides employee training programs that teach the traditional knowledge of Aboriginal culture and nature. Lion also promotes coexistence and positive impacts in local communities by expanding business transactions and creating employment with indigenous-owned businesses. In Blackmores’ health science business, the role of indigenous communities in biodiversity conservation has been recognized while exploring nature-based solutions

* We assess water stress using three indicators for available water resources (Aqueduct Baseline Water Stress, Water Risk Filter Baseline Water Depletion, and Blue Water Scarcity)
* Water intake refers to the percentage of the total intake for 14 sites with high water stress
* We assess biodiversity using scores for indexes calculated based on the IUCN Red List for basins at production sites (START (Species Threat Abatement and Restoration) and STARR), as well as the presence of biodiversity elements triggering KBA criteria inhabiting water within a 50km radius of production sites, including fish, amphibians, turtles, crustaceans, and dragonflies

(NbS) to preserve valuable medicinal herbs. Through events such as bushwalks that teach the traditional use of plants as medicine, employees have opportunities to engage more deeply with members of indigenous communities. Moving forward, we will consider sharing knowledge within the Group and expanding applicable areas through supplier collaboration in the “Supply Chain Environmental Program” that began in 2024.

Regarding water risk, we have prioritized production sites based on water stress and intake in the watershed, and have

considered non-financial goals and CSV commitments based on drought risk. Although the Asheville brewery of New Belgium Brewing in the U.S. was not evaluated as a high-risk site by tools, it experienced flood damage from a hurricane in 2024, highlighting the need to consider flood risk. This prompted a risk assessment of all group sites using the latest global tools and local information to identify priority sites. In the future, to strengthen resilience to water risks, we plan to collaborate with watershed stakeholders at identified priority sites to undertake activities to reduce water risks.

Actions	
Avoid	● Achieve and maintain 100% use of FSC-certified paper and expand this initiative globally.
	● Achieve and maintain 100% RSPO certified credits for palm oil as primary and secondary raw materials (excluding palm kernel oil), and avoid procurement from countries and regions at risk of deforestation.
	● Continue development of applications for bag-type culture vessel technology that enables mass plant propagation with minimal water.
	● Education on wildlife conservation for young people living on farms in Sri Lanka.
	● Identify priority sites for water risk using the latest global tools and local information, and work to avoid and mitigate water risk.
Reduce	● Support Rainforest Alliance certification acquisition and develop and implement the Regenerative Tea Scorecard for tea plantations in Sri Lanka and coffee plantations in Vietnam.
	● Continue supporting Rainforest Alliance certification acquisition for coffee plantations in Vietnam.
	● Reduce food loss and waste.
	● Introduce, continue, and expand advanced water treatment using reverse osmosis membranes at breweries in water-stressed areas in Australia to achieve significant water savings.
Restore & Regenerate	● Utilization of derelict farmland as Japan Wine vineyards. Restore ecosystems through hedgerow-style cultivation.
	● Conserve water sources within tea plantations in Sri Lanka and educate local residents.
	● Water source conservation activities at production sites in Japan.
	● Procure certified regenerative agriculture raw materials for Stone & Wood Brewery in Australia.
Transform	● Participate in TNFD and SBTs for Nature to develop guidance on natural capital financial disclosures and target-setting frameworks.
	● Lion and Blackmores declare themselves as TNFD adapters in Australia.
	● Contribute to the expansion of the supply of FSC-certified paper by establishing a consortium for sustainable paper use with other companies and NGOs.
	● Establish the Rainforest Alliance Consortium and contribute to raising awareness of sustainable agriculture.

Priority of production sites for each indicator				
Country	Production site	Water stress	Water intake	Biodiversity risk
United States	Biokyowa	★★★★★	★★★★★	★★★
Thailand	Thai Kyowa Biotechnologies	★★★★★	★★★★★	★★★
Japan	Kyowa Pharma Chemical	★★★★★	★★★★★	★★★
Japan	Kirin Brewery Toride	★★★★★	★★★★★	★★★
Japan	Kirin Brewery Yokohama	★★★★★	★★★★★	★★★
Japan	Kirin Distillery Gotemba	★★★★★	★★★★★	★★★
Japan	Kyowa Kirin Fuji	★★★★★	★★★★★	★★★
Australia	Lion Tooheys Brewery	★★★★★	★★★★★	★★★
Japan	Kirin Brewery Nagoya	★★★★★	★★★★★	★★★
China	Shanghai Kyowa Amino Acid	★★★★★	★★★★★	★★★
Japan	Kirin Beverage Shonan	★★★★★	★★★★★	★★★
Australia	Lion Castlemaine Perkins Brewery	★★★★★	★★★★★	★★★
China	Kirin Brewery (Zhuhai)	★★★★★	★★★★★	★★★
United States	New Belgium Brewing Fort Collins	★★★★★	★★★★★	★★★

Transition Plans

Plan to Transition to Circular Economy

Containers and packaging

We will adopt a 3R(Reduce, Reuse, Recycle)+Renewable approach for promoting a transition to the circular economy for containers and packaging. Our main actions are on the right.

In the EU, the transition to a circular economy is positioned as part of growth strategies, and “design” is expected to play an important role in promoting this transition. Internally, the Kirin Group has the Institute for Package Innovation, which focuses on developing containers and packaging and solving related problems. Taking advantage of this strength, we are able to solve social issues through design related to the environment for containers and packaging. In addition to the reduction of GHG emissions in transportation by measures such as reducing the weight of containers and packaging, we will contribute to the circular economy by creating practical applications for chemical recycling and building a society that recycles plastics throughout society.

Food loss and waste

The Kirin Group positions issues related to food loss and waste, as issues for not only Nature Positive but also the circular economy. In order to reduce product waste losses, we are promoting production optimization by improving demand forecasts. In addition, we are promoting effective utilization methods, such as the donation of unavoidable surplus inventory to local governments, food banks, and other organizations. We are continuing to effectively use by-products generated in production processes (e.g., spent grains) as feed and compost.

	Action
Reduce	<ul style="list-style-type: none"> ● Utilize the “Institute for Package Innovation” to promote weight reduction for containers and packaging. Specifically, we developed and deployed the lightest returnable beer bottle produced in Japan and reduced the weight of cans and PET bottles. ● Promote the reduction of single-use plastics and the switch to alternative materials.
Reuse	<ul style="list-style-type: none"> ● We will continue to reuse returnable beer bottles.
Recycle	<ul style="list-style-type: none"> ● We collect old beer bottles and one-way bottles, turn them into cullet, and reuse them as bottles. ● Expand the use of aluminum cans with a high percentage of recycled metal. ● We collect empty containers from vending machines and voluntarily collect and reuse aluminum cans in cooperation with can manufacturers. ● Lion has developed a “Sustainable Packaging Strategy,” and will assume key roles such as collection coordinator in states where Container Deposit Schemes are in place in Australia.
Renewable	<ul style="list-style-type: none"> ● Based on “Kirin Group Plastic Policy,” our medium-term target is to achieve a rate of recycled resin use in 50% of PET bottles in Japan by 2027. ● In terms of “R100 PET bottles,” we will gradually expand the adoption of products that use 100% recycled PET resin from mechanical recycling, the current mainstream method. ● We will also actively promote “bottle-to-bottle” horizontal recycling, in which used PET bottles are collected and recycled into new PET bottles. ● Engage in chemical recycling initiatives using non-food grade PET materials. ● Anticipate future supply and demand for recycled PET resin and, while monitoring the progress of chemical recycling practical application, develop and promote a roadmap towards 2050.

Transition Plans

Plan to Transition to Circular Economy

We have separately provided information concerning plans for transition to a decarbonized society, Nature Positive, and a circular economy, but in reality, we will implement these plans as a single unified plan that takes into account their interconnectedness. Our specific activities and their results for each of the aforementioned transition plans are shown below.

Our specific activities and their results in relation to natural capital, in accordance with the SBTN's AR3T framework, are summarized below.

Climate change strategies and progress

	Increase in resilience (adaptation)			Minimization of impact on natural capital (mitigation)			Business opportunity	
Material agenda	Water resources		Biological resources		Containers and packaging	Climate change		
Response strategy	<ul style="list-style-type: none">● Sharing flood knowledge● Equipment and facility measures against flooding● Sharing drought knowledge● Development and deployment of water usage reduction technology● Conservation of water sources		<ul style="list-style-type: none">● Procurement of materials from sustainable farms and forestry and support for obtaining certification● Prevention of soil runoff with cover crops● Breeding varieties suited to global warming● Utilization of mass plant propagation technology● Procurement of raw materials from regenerative agriculture	<ul style="list-style-type: none">● Reduction of GHG emissions from farmland through regenerative agriculture and carbon storage● Use of biogas	<ul style="list-style-type: none">● Creation of more lightweight containers● Increase rate of use of recycled aluminum in aluminum cans● Consider the use of GHG-free aluminum cans● Increase the horizontal recycling rate of PET bottles	<ul style="list-style-type: none">● Promotion of energy conservation● Expansion of renewable energy● Energy transition● Production optimization● Improvement of transportation efficiency (modal shift and joint distribution)● Exploration and introduction of EV and fuel cell truck technologies, etc.	<ul style="list-style-type: none">● Provision of products to address infectious diseases	<ul style="list-style-type: none">● Provision of non-alcoholic beverages that prevent heatstroke
Progress	<ul style="list-style-type: none">● Contribution to the TNFD pilot program, including the worldleading LEAP trial disclosure (2022) and scenario analysis trial (2023)● Participation in the pilot test of Corporate Engagement Program in SBTN for Nature (from 2021)	<ul style="list-style-type: none">● Started surveys of high-risk business sites for insurance coverage, utilizing the results of simulations of natural disasters and floods (since 2022)● Implemented flood prevention measures and equipment measures at pharmaceutical plants that must ensure a stable supply of products● Conduct water risk surveys as foundational data to enhance group-wide resilience, due to the increasing visibility of water risks such as droughts and floods influenced by climate change (starting in 2025)	<ul style="list-style-type: none">● Establishment of mass plant propagation technology for hops● Coinciding with pilot testing of Regenerative Tea Scorecards for tea farms in Sri Lanka, cover crops preserve soil moisture and prevent soil runoff in heavy rainfall● Procure raw materials from regenerative agriculture at Stone & Wood Brewery	<ul style="list-style-type: none">● Began a joint study on controlling GHG emissions from soil and carbon storage with biochar at Mariko Vineyard● Continued use of biogas from anaerobic wastewater treatment	<ul style="list-style-type: none">● Joined the Alliance To End Plastic Waste and supported projects to solve the global problem of plastic pollution● Increased use of R100 PET bottles made with 100% recycled resin● Practical applications for chemical recycling	<ul style="list-style-type: none">● Introduced large-scale solar power generation facilities at nine Kirin Brewery plants (through 2023, including eight breweries and plants with PPA model purchasing), Mercian Fujisawa Plant (2023), Kyowa Kirin Ube Plant (2023), Kyowa Hakko Bio Yamaguchi Production Center, and Lion Castlemaine Perkins Brewery (2019). Achieved 100% of procured electricity from renewable energy sources at all Kirin Brewery plants and operating sites (2024), Kyowa Kirin Takasaki Plant, Ube Plant, and research laboratories, all Lion plants in Australia and New Zealand (2023), and all Château Mercian wineries (2022). Became the first global food and beverage company to obtain approval for an SBT Net-Zero (2022)● Launched the Kirin Supply Chain Environmental Program to strengthen cooperation with major suppliers (2024)	<ul style="list-style-type: none">● Enhancement of product lineup● Supply of materials to partner companies	<ul style="list-style-type: none">● Raising awareness of heatstroke