Risk and Impact Management

Risk and Impact Management

In the section on governance, we have described our measures to address significant physical and transitional risks related to climate change detected in scenario analysis. Senior management deploys mitigation and adaptation strategies and manages targets under the supervision of the Board. The same applies to overall sustainability-related risks, including the degree of dependence and impact on natural capital and the creation of a circular economy. In this section, we describe our monitoring system for important risks and our response to the acute risks posed by climate change.

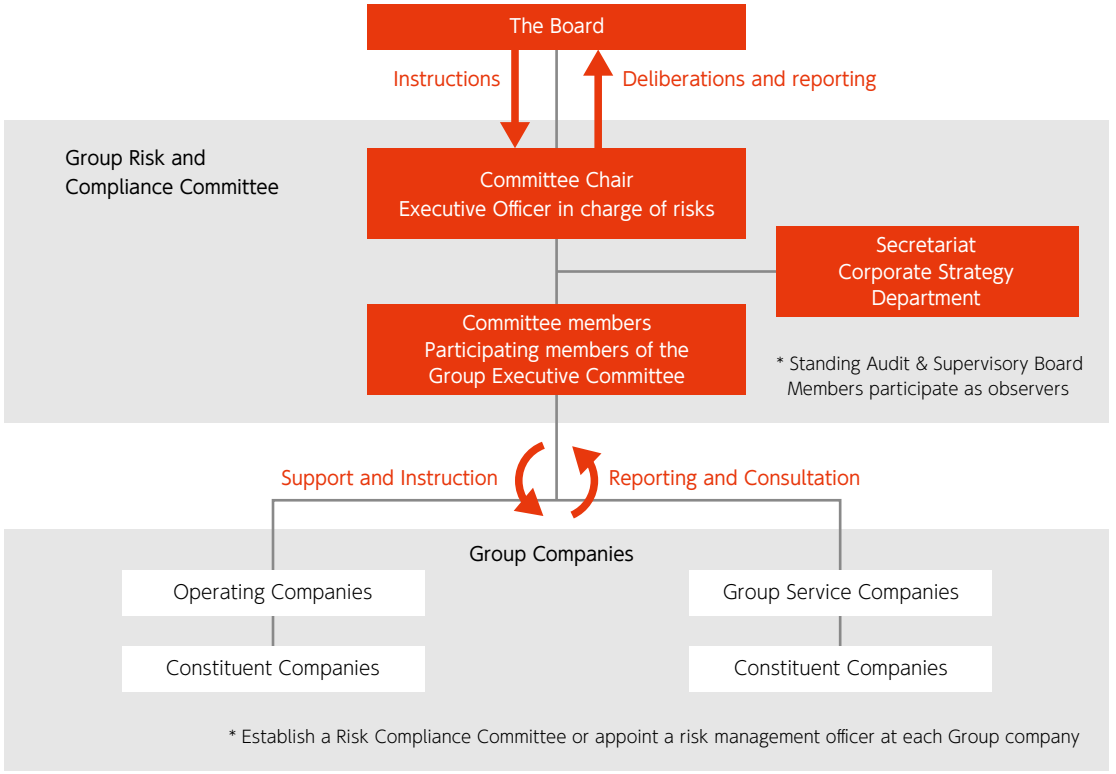
Risk management system

The Kirin Group has established the "Group Risk and Compliance Committee," which consists of officers at the level of senior executive officer or higher from Kirin Holdings. This committee oversees all aspects of risk management activities, including the collection of information related to risk, the formulation of Group risk policies, risk mitigation initiatives, information sharing at times of crisis and consideration of countermeasures, and instructions and support for Group companies. Risks*1 and opportunities related to sustainability include environmental issues such as climate change, natural capital, and the circular economy; social issues such as human rights*2, local communities, indigenous peoples, small-scale farmers, and gender; and the mutual relationships among such issues and regulatory responses (under our risk management system, "opportunities" are included in the management of "risks"). The Board oversees the effectiveness of risk management through deliberations and reports on important risks for the Group.

Regarding the process of determining the Group's important risks, based on the Kirin Group's risk management policy established each fiscal year, Group companies consider and identify risks to their strategies and business operations, as well as risks that could develop into major crises. Kirin Holdings aggregates these business-specific risks and examines risks common to the entire group*3.

*1 Please see "Identification of Materiality" P.7 for details concerning the identification of materiality for risks and opportunities related to environmental issues, including climate change.
*2 The Kirin Group revised the "Kirin Group Human Rights Policy" on November 8, 2023, in order to advance our human rights initiatives toward global, high-level industry standards.
https://www.kirinholdings.com/en/impact/community/2_1/policies/
*3 Details of our "risk management system" are disclosed below.
https://www.kirinholdings.com/en/purpose/governance/risk_management/

Risk management system



Management of risks related to sustainability

Sustainability-related risks include torrential rains, floods, droughts, and wildfires, which are physical and acute risks related to climate change, and which are becoming more frequent and severe. When such climate disasters occur, the Group or the relevant company's Risk and Compliance Committee discusses the matter, and counter-measures are promptly implemented. When we expect the impact to be significant, we respond based on business continuity plans (BCPs) adopting all hazards approach*4 . The Board of Kirin Holdings receives reports on the status of crises expected to have a significant impact as appropriate and issues necessary instructions. After a response to an individual crisis has been completed, we review the risks involved and the progress of measures to respond, and share our experience within the Group in the form of revisions to response manuals and BCPs, contributing to a sustained strengthening of management resilience. In 2024, New Belgium Brewing's Asheville Brewery suffered significant flood damage. Previous water risk assessments had not identified Asheville as a high-risk site. This incident underscored the importance of incorporating local information in addition to desktop studies. Currently, we are re-evaluating water risk assessments across the entire Kirin Group.

*4 All hazards approach: A business continuity plan that focuses on the loss of management resources due to inter-correlated hazards such as employee and equipment damage or temporary suspension of headquarters functions, rather than approaching each individual crisis event.

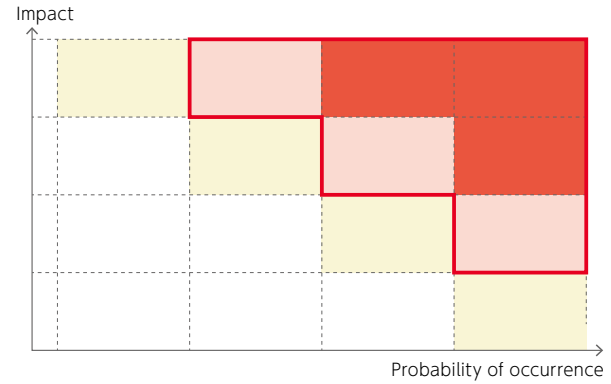
Improving risk response capabilities

For physical and transition risks such as climate change, which will have an extremely large impact on our businesses if they occur, even though the probability of occurrence is uncertain, we have adopted a new approach to identify and examine important risks by setting scenarios and using them to analyze and assess risks. In scenario analysis, we utilize various research papers, science-based risk assessment tools such as Aqueduct, etc. We have already begun assessing the identification of dependencies, impacts, risks, and opportunities related to natural capital, both directly and in the upstream and downstream value chains, on a trial basis, in accordance with the TNFD guidance, and we intend to incorporate it as a regular process in the coming years. The Group Environmental Meeting and the Group CSV Committee share and discuss risks and opportunities identified through these processes, then they are not only submitted and reported to the Board but also to the Group Risk and Compliance Committee Secretariat, which manages them together with other risks. Additionally, we share internal cases of sustainability-related risks, such as responses to climate disasters, within the Group in order to strengthen resilience across the Group as a whole.

Impact measurement

The Kirin Group measures the impact of important risks based on their financial impact and probability of occurrence. We manage these risks in a unified manner on a risk map, and take measures to address high-impact risks by the Board's monitoring.

Risk map



We unify important risks for the Group on a risk map, and review their importance and countermeasures. The Board of Directors also monitors the most important risks, which are placed within the red frame ▭ .

Risk and Impact Management

Significant Risks and Opportunities

As described in Strategy section, we have analyzed and assessed sustainability-related risks which are interconnected with climate change, natural capital, the circular economy, and other social issues using scenario analysis and other methods. We have summarized significant risks and opportunities identified as a result in the table below. The physical risks primarily focus on major agricultural raw materials and water-related risks that are highly relevant to businesses ranging from food to pharmaceutical sectors. For transitional risks, we have analyzed energy and agricultural products, which account for a large share of procurement costs. For natural capital, we have narrowed the scope of analysis by considering location, dependency, and the impact on nature and our businesses. As for containers and packaging, we set the scope of analysis after comprehensively taking resource recycling and related impacts on climate change and natural capital into consideration. In terms of business opportunities, we have analyzed areas such as health, which is a key area for value creation through our businesses, and an area where we think we can contribute to social issues caused by climate change.

Risk and Opportunity	Classification	Category	Main Risk	Impact	Risk Emergence Period			Financial Impact			Response Strategy
					S	M	L	L	M	H	
Physical risk	Chronic risks	Climate change, biological resources and water resources	Declining yields of agricultural products and increase in procurement costs Changes in the state of nature	• Procurement costs due to reduced agricultural yields (2°C scenario: 1.2 billion yen to 3.2 billion yen in 2050, 4°C scenario: 3.1 billion yen to 12.2 billion yen)		●	●			■	• Support for farms to acquire certification for sustainable agriculture (adaptation measures) • Technology development to improve plant heat tolerance in response to global warming (adaptation measures) • Mass plant propagation technologies (adaptation measures) • Development of alternative raw materials and new production technologies (adaptation measures) • Introduction of perennial grains into annual crop production systems (adaptation measures) • GHG emission reduction (mitigation measures)
		Climate change, biological resources, water resources, containers and packaging	Environmental pollution by improper disposal of used containers	• Negative impact on life in river basins and oceans • Expenses associated with measures to address ocean pollution (1.1 billion yen)		●	●		■		• Building a society that recycles plastics • Horizontal recycling of alcoholic beverage caps
	Acute risks	Climate change and water resources	Disruption of operations owing to floods	• Historical examples of actual flood damage (1.0 billion yen to 5.0 billion yen) • Exposure to 200-year disasters (total of 20 locations in Japan: 1.0 billion yen)	●	●	●		■		• Sharing of knowledge on responses to floods (adaptation measures) • Insurance for floods (adaptation measures) • Addressing flooding at facilities (adaptation measures)
		Climate change and water resources	Impact on transportation from floods	• Risk of flooding at shipping ports for raw materials	●	●	●		■		• Sharing of knowledge on responding to floods (adaptation measures) • Diversification of suppliers (adaptation measures)
		Climate change and water resources	Disruption of operations owing to droughts	• Impact from decline in production owing to droughts (30 million yen to 600 million yen)	●	●	●	■			• Advanced water reduction technology (adaptation measures) • Sharing drought response knowledge (adaptation measures)

Risk and Impact Management

Significant Risks and Opportunities

Risk and Opportunity	Classification	Category	Main Risk	Impact	Risk Emergence Period			Financial Impact			Response Strategy
					S	M	L	L	M	H	
Physical risk	Acute risks	Climate change, biological resources and water resources	Impact on agricultural products from floods and droughts	• High water stress in most production areas • Increase in natural disasters in production areas	●	●	●			■	• Responses to water stress in areas producing agricultural raw materials (adaptation measures) • Prevention of soil runoff in areas producing agricultural raw materials (adaptation measures)
		Climate change and biological resources	Impact of diseases and air pollution on agricultural products	• Declining quality of agricultural products due to smoke and air pollution • Spread of disease	●	●		■			• Research and measures from a long-term perspective (adaptation measures)
Transitional risks	Policy	Climate change, biological resources and water resources	Carbon pricing and energy procurement costs	• Energy procurement costs (2°C scenario by 2030: 7.7 billion yen, 4°C scenario: 1.2 yen billion, 1.5°C scenario: 10.4 billion yen to 904.4 billion yen)		●	●			■	• Energy saving/renewable energy/energy conversion • GHG emission reduction through logistics optimization • GHG emission reduction through lightweight packaging • GHG emission reduction at the sales stage
		Climate change, biological resources and water resources	Financial impact on the procurement of agricultural products from carbon pricing	• Procurement costs due to reduced agricultural yields (2°C scenario: 0.9 billion yen to 4.0 billion yen in 2050, 4°C scenario: 2.2 billion yen to 8.0 billion yen in 2050.)	●	●			■		• Risk mitigation through mass plant propagation technologies • Measures against fertilizer price increases
		Climate change, biological resources and water resources	Impact on currently held assets	• Difficulty in recovering investment in facilities and equipment due to legal restrictions, etc. • Damage to facilities and equipment due to flooding, etc.		●	●	■			• Identification of trends in technology and implementation of our roadmap with adaptive updates
		Climate change, biological resources and water resources	Cost of regulatory response	• Increase in human resources • Increase in cost of response		●	●	■			• Development of information disclosure infrastructure
		Biological resources	Environmental and economic incompatibility with rapid agricultural policy transitions	• Chain collapse of agricultural infrastructure caused by extreme bans on agricultural chemicals and fertilizers without preparation	●	●	●		■		• Support for training farmers in sustainable agriculture • Appropriate engagement with experts and policymakers
	Technology	Climate change, biological resources, water resources, containers and packaging	Lack of research and development resources and lack of long-term perspective	• Possibility that research contributing to decarbonization will not be put to practical use at the expected timing	●	●	●		■		• In-house packaging development technology • Research and development on climate change and natural capital

Risk and Impact Management

Significant Risks and Opportunities

Risk and Opportunity	Classification	Category	Main Risk	Impact	Risk Emergence Period			Financial Impact			Response Strategy
					S	M	L	L	M	H	
Transitional risks	Technology	Climate change	Decline in ability of engineering departments to respond and lack of appropriate investment	• Introduction of facilities and equipment at appropriate times and prices	●	●	●	■			• Strengthening engineering capabilities • Understand technological trends and flexibly introduce facilities and equipment
	Markets	Climate change, containers and packaging	Social resistance to fossil-derived raw materials	• Growing negative impression of PET bottles	●	●		■			• Plastic resource recycling
		Climate change, biological resources and water resources	Concerns about deforestation	• Decrease in confidence in the amount of GHGs absorbed and stored through forests, etc.	●	●		■			• Promotion of sustainable forestry and agriculture • Creation of high-quality forest-based carbon credits
		Climate change, biological resources and water resources	Opportunity loss due to ethical consumption	• Decline in the reputation of our brand	●	●		■			• Environmentally friendly products
		Climate change	High energy prices	• Possibility that natural gas and oil prices do not fall		●	●		■		• Steady implementation of our roadmap to achieve our science-based 1.5°C target
	Reputation	Climate change, biological resources, water resources and containers and packaging	Consumer reputation	• Decline in the reputation of our brand	●	●	●	■			• Appropriate communication to consumers
		Climate change, biological resources, water resources, and containers and packaging	Concerns about facilities of renewable energy	• Opposition to installation from regions where power plants are constructed • Deforestation caused by sourcing raw materials for biomass energy	●	●	●	■			• Introduction of renewable energy that does not have a negative impact on the environment or local communities
		Climate change, biological resources, water resources, and containers and packaging	Loss of trust from investors	• Loss of trust due to lack of adequate disclosure • Increase in cost of capital	●	●	●		■		• Appropriate disclosure in line with TCFD and TNFD recommendations
		Climate change, biological resources, water resources, and containers and packaging	Responsibility for pollution of the natural environment	• Compensation, fines, administrative dispositions, and loss of social trust	●	●	●	■			• Improvements to environmental management systems

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Significant Risks and Opportunities

Risk and Opportunity	Classification	Category	Main Risk	Impact	Risk Emergence Period			Financial Impact			Response Strategy
					S	M	L	L	M	H	
Systemic risk	Stability of food and social systems	Biological resources	Ecosystem damage due to the abandonment of farmland	• Reduction of agricultural land for food	●	●	●	■			• Promotion of regenerative agriculture
		Biological resources	Ecosystem damage due to the excessive use of agricultural chemicals	• Decline in ecosystem services	●	●	●	■			• Ecosystem restoration activities focusing on hedgerow-style cultivation
		Biological resources	Damage to ecosystems owing to reduction in agricultural land for food	• Loss of ecosystem sources on agricultural land due to years of use of agricultural chemicals	●	●	●		■		• Enhancing engagement with agricultural production areas
Business opportunity	Markets	Climate change and biological resources	Increasing distribution in infectious diseases caused by global warming	• Concerns related to increases in the number of infections and regions affected • Northward movement of the habitat of the Aedes albopictus	●	●	●		■		• Contribution to health science domain
		Climate change	Increase in heatstroke caused by global warming	• The National Institute for Environmental Studies expects the number of excess deaths related to heat to increase between 4 and 10 times under the 4℃ scenario	●	●	●	■			• Contribution with products to counter heatstroke
	Products and services	Climate change	Increased expectations for products and services that contribute to decarbonization	• Possibility that products will be required that contribute to decarbonization or the shift to a low-carbon society		●	●	■			• Provision of decarbonized products
	Resource efficiency	Climate change	Sustainable logistics	• Decline in product supply capabilities	●	●	●	■			• Reduction in costs from more efficient transportation
		Climate change and containers and packaging	Reduction of container and packaging raw materials and stable procurement	• Demands for the 3Rs and reduction in costs from the move to lightweight containers	●	●	●	■			• Reducing the weight of containers and packaging
	Energy sources	Climate change	Reduction in reliance on fossil fuels	• Reduction of energy cost	●	●	●		■		• Achievement of an energy mix to achieve net-zero emissions
		Climate change	Stable procurement of renewable energy	• Stable use of renewable energy with additionality	●	●	●	■			• Use of renewable energy with a focus on additionality
	Resilience	Climate change, biological resources, water resources, containers and packaging	Strengthening the supply chain	• Ensuring the stability of the procurement of agricultural raw materials and reduction of Scope 3 GHG emissions	●	●	●		■		• Enhancement of engagement • Utilization of the Kirin Supply Chain Environmental Program