

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

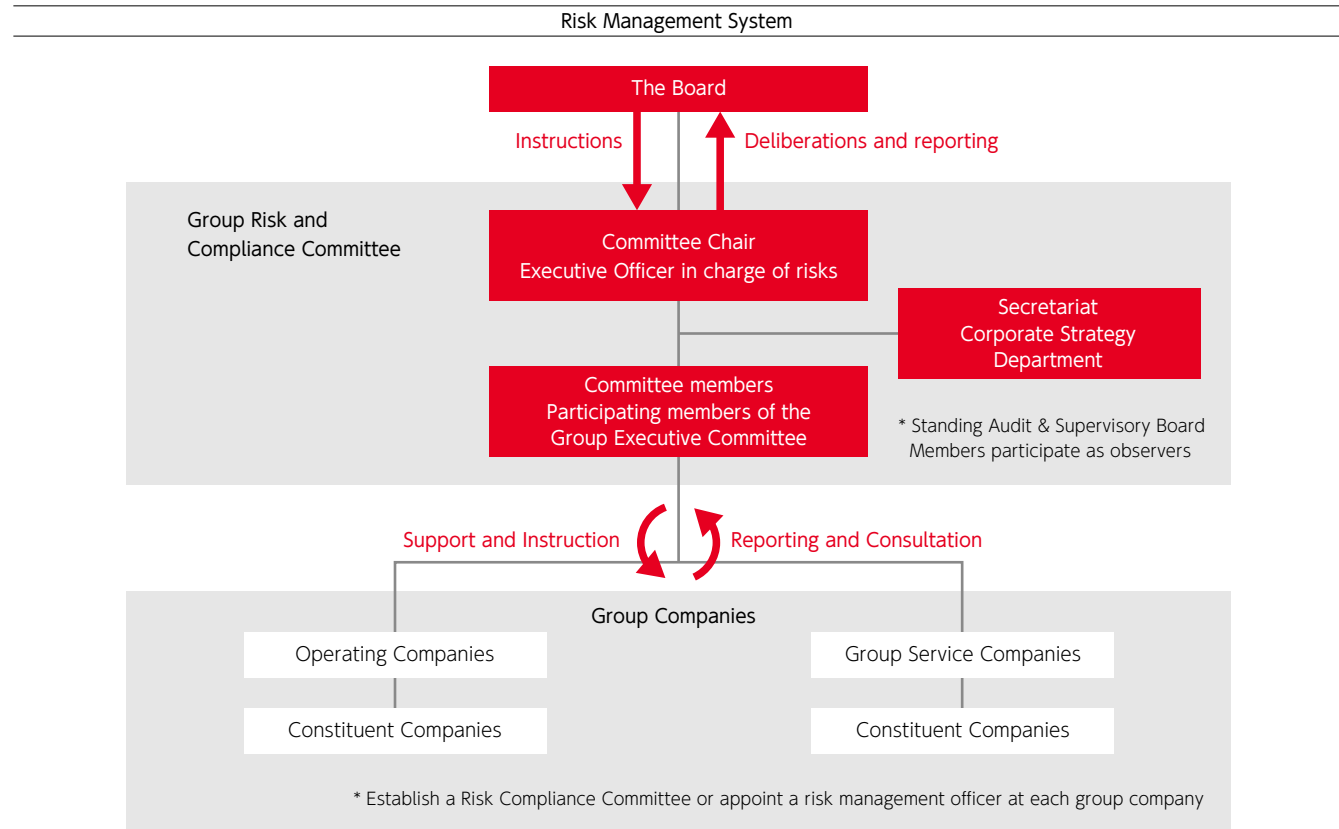
The Kirin Group has established the "Group Risk and Compliance Committee," which consists of officers at the level of senior executive officer or higher from Kirin Holdings and is chaired by the executive officer in charge of risk management. The committee meets in principle twice a year. This committee 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. The identified important risks are reported to the Board of Directors as necessary. Kirin Holdings aggregates these business-specific risks and examines risks common to the entire group*³.

*1 Please see "Commitment and Performance (→P.13-14)" 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/sustainability/materiality/human_rights/01/

*3 Details of our "risk management system" are disclosed below.
https://www.kirinholdings.com/en/purpose/governance/risk_management/



Risk and Impact Management

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 countermeasures 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.

When New Belgium Brewing's Asheville Brewery suffered flood damage in 2024, we responded in accordance with our BCP, ensuring employee safety, confirming the extent of damage, and implementing phased resumption of operations, which enabled early recovery. This incident also prompted us to re-evaluate water risk assessments at our global production sites in 2025. Going forward, we will prioritize strengthening risk management at sites identified through this assessment (Details on water risk assessment for our own production sites (→P.23)).

^{*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

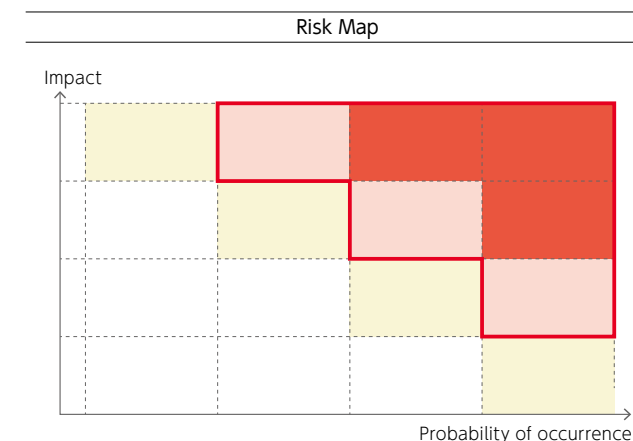
For physical and transition risks such as climate change, which will have an extremely large impact on our businesses if they occur, even though the probability of occurrence is uncertain, we have adopted an approach to identify and examine important risks by setting scenarios and conducting analysis and assessment. In 2025, we updated our overall climate scenarios based on the latest information sources and developed new nature-related scenarios, enabling us to assess risks and opportunities based on integrated climate and nature scenarios. In scenario analysis, we utilize various research papers and science-based risk assessment tools such as Aqeduct.

Through this integrated scenario analysis, we identify significant risks and opportunities across the Group's entire value chain. For specific themes such as risks related to raw material procurement and water resources, we conduct assessments by combining the TNFD recommendations and SBTN methodologies. This integrated scenario analysis is reviewed at least once a year, and we assess whether updates are required in light of the impact of uncertainties, conducting detailed analysis as needed.

The Group Environmental Meeting and the Group CSV Committee share and discuss risks and opportunities identified through these processes, which are then submitted and reported to the Board and shared with 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.



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 .

Significant Risks and Opportunities

As described in the Strategy section, in 2025 we developed new integrated climate and nature scenarios and re-evaluated risks and opportunities across the Kirin Group's direct operations and entire value chain (Details (→P.20-21)). Based on our analysis and assessment of sustainability-related risks—considering the interlinkages among climate change, natural capital, the Circular Economy, and social issues, and incorporating scenario analysis—our significant risks and opportunities are summarized in the following

tables. Significant physical risks identified include major agricultural raw materials and water-related risks that are highly relevant to businesses ranging from food to pharmaceutical sectors. Transition risks identified include environmental regulations such as energy and carbon pricing, as well as risks related to market changes. As systemic risks, we have identified risks of ecosystem degradation associated with land use and the release of pharmaceuticals into the environment. Significant opportunities have also been identified

in key value creation areas of our business, including market and product/service opportunities in the pharmaceuticals and health science sector that can address social issues caused by climate change such as infectious diseases and heatstroke, as well as in the product, service, and R&D that contribute to decarbonization and nature restoration. We are developing response strategies based on the expected timing and potential financial impacts of materialization of each identified risk and opportunity.

Colored cells: Particularly significant risks and opportunities with a rating of 20 points or higher

Risk and Opportunity	Classification	Category	Significant Risks and Opportunities	Impacts	Risk Emergence Period*			Risk Rating by 2035 Scenario			Response Strategy
					S	M	L	Scenario 1 (Sustainable)	Scenario 2 (Middle Degradation)	Scenario 3 (High Degradation & Climate Change Progression)	
Physical risk	Chronic	Climate change, Biological resources, Water resources	Impact of climate change and nature loss on agricultural products	- Procurement costs due to decline in yields of agricultural products (Sustainable Scenario: 0.9 billion yen to 2.6 billion yen, Middle Degradation Scenario: 1.3 billion yen to 3.1 billion yen, High Degradation & Climate Change Progression Scenario: 3.1 billion yen to 12.1 billion yen) - Decline in land productivity due to soil degradation - Decline in yields due to reduction in pollinators				15	20	25	- Support for farms to acquire certification for sustainable agriculture (adaptation measures) - Development of heat and drought tolerance technologies for climate change adaptation - Accumulation of mass plant propagation technologies - 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) - Risk assessment of water and land use based on the SBTN methodology
		Water resources	Impact of water pollution on production	Increased capital investment in water treatment				9	12	16	- Understanding the actual situation through risk assessment - Advanced water saving technologies (adaptation measures) - Minimization of wastewater load (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 (2.9 billion yen)				8	12	16	Building a society that recycles plastics
	Acute	Climate change, Water resources	Disruption of operations owing to floods	- Exposure to 200-year disasters (total of 43 locations within the Group: 4.2 billion yen) - Operational shutdown caused by storm surges and flooding - Increase in insurance premiums				15	20	25	- Sharing of knowledge on responses to floods (adaptation measures) - Insurance for floods (adaptation measures) - Addressing flooding at facilities (adaptation measures)
		Climate change, Water resources	Impact on transportation from floods	- Risk of flooding at shipping ports for raw materials - Delays in production and operations due to disruption of transportation routes				10	15	20	- Sharing of knowledge on responding to floods (adaptation measures) - Diversification of suppliers (adaptation measures)
		Climate change, Water resources	Disruption of operations owing to droughts	- Exposure to 10-year disasters (7 high water-stress sites within the Group) - Annual exposure is estimated at 4.57 billion yen under a 1.5°C scenario, 5.49 billion yen under a 2.0°C scenario, and 9.25 billion yen under a 4.0°C scenario				5	10	15	- Advanced water reduction technology (adaptation measures) - Sharing drought response knowledge (adaptation measures) - Water source forest conservation activities at domestic manufacturing sites (mitigation measures)
		Climate change, Biological resources, Water resources	Impact on agricultural products from floods and droughts	- High water stress in most production areas - Increase in natural disasters in production areas				15	20	25	- Responses to water stress in areas producing agricultural raw materials (adaptation measures) - Development of plant heat and drought tolerance technologies for climate change adaptation (adaptation measures) - Prevention of soil runoff in areas producing agricultural raw materials (adaptation measures)
		Climate change, 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				6	12	20	Research and measures from a long-term perspective (adaptation measures)

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Transitional risks	Policy	Climate change, Biological resources, Water resources	Financial impact of carbon pricing on energy, agricultural products, and raw material procurement	- Procurement costs due to decline in yields of agricultural products (Sustainable Scenario: 0.9 billion yen to 2.6 billion yen, Middle Degradation Scenario: 1.3 billion yen to 3.1 billion yen, High Degradation & Climate Change Progression Scenario: 3.1 billion yen to 12.1 billion yen) - Financial impact on energy due to carbon pricing (Sustainable Scenario: 91.8 billion yen, Middle Degradation Scenario: 3.8 billion yen, High Degradation & Climate Change Progression Scenario: 3.1 billion yen) - Financial impact on agricultural products due to carbon pricing (Sustainable Scenario: 0.9 billion yen to 4.1 billion yen, Middle Degradation Scenario: 2.2 billion yen to 6.6 billion yen, High Degradation & Climate Change Progression Scenario: 2.2 billion yen to 8.1 billion yen) - Financial impact of packaging material procurement due to carbon pricing (Sustainable Scenario: 43.8 billion yen, Middle Degradation Scenario: 1.1 billion yen, High Degradation & Climate Change Progression Scenario: 0.1 billion yen) - Increase in procurement costs for containers and packaging such as aluminum due to carbon taxes	●	●		25	25	15	- Energy saving/renewable energy/switch of energy source - GHG emission reduction through logistics optimization - GHG emission reduction through lightweight packaging - Increasing the ratio of recycled materials in packaging - GHG emission reduction at the sales stage - Risk mitigation through mass plant propagation technologies - Measures against fertilizer price increases
		Climate change, Biological resources, Water resources, Containers and Packaging	Early replacement of currently held assets for decarbonization	• Early retirement of facilities due to legal restrictions such as bans on plastic packaging		●	●	20	9	4	• Identification of trends in technology and implementation of our roadmap with adaptive updates
		Climate change, Biological resources, Water resources, Containers and Packaging	Cost of regulatory response	• Increase in human resources and cost of response		●	●	25	25	20	- Advancement of data collection and calculation methods - Refinement of data calculation
		Climate change, Biological resources, Water resources	Cost of responding to pollution-related regulations	• Regulations on environmental impact of pharmaceuticals		●	●	16	16	8	• Improvements to environmental management systems
		Biological resources, Water resources	Cost of responding to land use-related regulations	• Future regulatory response for biodiversity net gain (regulations mandating creation of ecosystems exceeding those lost) and other regulations		●	●	15	15	10	• Improvements to environmental management systems
		Climate change, Biological resources, Water resources	Cost of responding to genetic resource-related regulations	• Regulations on access to genetic resources derived from the Convention on Biological Diversity		●	●	25	25	20	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
		Biological resources	Increase in cost of relocating production and procurement areas due to expansion of protected areas	• Increase in cost for relocating procurement areas due to land use restrictions		●	●	20	15	10	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
		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 - Cost of transition to regenerative agriculture and agriculture with lower environmental impact	●	●	●	25	15	10	- Support for training farmers in sustainable agriculture - Appropriate engagement with experts and policymakers
	Markets	Climate change, Containers and Packaging	Social resistance to fossil-derived raw materials	- Decline in market share due to delays in adopting environmentally friendly plastic packaging - Increase in cost for switching to low-carbon packaging materials - Disruption of operations due to difficulty in procuring chemical raw materials and resins	●	●		12	6	2	• Plastic resource recycling
		Climate change, Biological resources, Water resources	Concerns about deforestation	- Dependence on forest-risk commodities - Increase in cost for ensuring compliance and traceability	●	●		15	15	10	- Promotion of sustainable forestry and agriculture - Creation of high-quality forest-based carbon credits - No-Deforestation Commitment
		Climate change, Biological resources, Water resources	Opportunity loss due to ethical consumption	• Decline in market share due to delays in responding to changes in consumer preferences	●	●	●	15	9	6	• Environmentally friendly products
		Climate change	High energy prices	- Surge in natural gas and oil prices due to carbon pricing and supply-demand balance - Energy procurement costs are estimated at 7.63 billion yen under the Sustainable Scenario, 0.27 billion yen under the Middle Degradation Scenario, and 0.12 billion yen under the High Degradation & Climate Change Progression Scenario.		●	●	25	16	12	• Steady implementation of our roadmap to achieve our science-based 1.5°C target

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Systemic risk	Stability of food and social systems	Biological resources	Reduction in agricultural land and ecosystem damage due to farmland abandonment and excessive use of agricultural chemicals	- Increase in insurance costs related to weather disasters due to decline in ecosystem functions - Degradation of agricultural land ecosystems due to long-term use of agricultural chemicals	●	●	●	10	15	20	- Promoting regenerative agriculture - Ecosystem restoration activities focusing on hedgerow-style cultivation - Enhancing engagement with agricultural production areas
		Biological resources	Ecosystem damage due to leakage of pharmaceuticals	- Decline in pharmaceutical efficacy due to spread of antimicrobial resistance - Spread or leakage of genetically modified organisms used in research and production	●	●	●	10	15	20	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
Business opportunity	Markets	Climate change, 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	●	●	●	12	20	25	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°C scenario	●	●	●	12	20	25	Contribution with products to counter heatstroke
		Climate change, Biological resources, Water resources, Containers and Packaging	Development of new markets and regions through research and development of new pharmaceuticals	- Development of new markets through therapeutics for tropical diseases - Access to new markets due to changes in endemic areas and prevalence rates resulting from changes in temperature patterns	●	●	●	15	25	25	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
	Products and services	Climate change	Increased expectations for products and services that contribute to decarbonization	- Increasing needs for products that contribute to decarbonization or low-carbon transition - Reduction in transportation volume through concentrated products - Investment in new materials and manufacturing processes	●	●	●	20	12	6	- Provision of decarbonized products - Research and development contributing to climate change mitigation and adaptation
		Biological resources	Increased revenue due to growing demand for products contributing to nature restoration	- Increased sales of certified food products and agricultural products - Increased revenue through participation in tradable permit systems related to biodiversity - Increased revenue through development of new materials derived from plants and microorganisms	●	●	●	25	25	25	- Response to product development contributing to nature restoration and Circular Economy - Strengthening consumer appeal through environmental certification labels
	Resource efficiency	Climate change	Sustainable logistics	- Decline in product supply capabilities - Optimization of logistics networks and introduction of fuel-efficient vehicles and EVs	●	●	●	10	4	4	Reduction in costs from more efficient transportation
		Climate change, 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 - Reduction of packaging materials - Use of recyclable and reusable materials - Cost reduction through development of plant-based packaging materials	●	●	●	15	12	6	- Reducing the weight of containers and packaging - In-house packaging development capability
	Energy sources	Climate change	Reduction in reliance on fossil fuels, stable procurement of renewable energy, and promotion of energy conservation	- Reduction of energy cost - Improved productivity through efficient manufacturing systems such as green chemistry	●	●	●	25	16	12	- Achievement of an energy mix to achieve net-zero emissions - Introduction of renewable energy without adverse impacts on the environment and local communities
	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 Scope3 GHG emissions - Enhanced credibility through utilization of certification systems for medicinal plants used as raw materials	●	●	●	25	20	15	Enhancement of engagement
		Biological resources	Enhancement of ecosystem services through crop breeding and advances in cultivation technologies	Development of resilient crop varieties (e.g., hops, barley)	●	●	●	25	5	5	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
	Capital flows and financing	Climate change, Biological resources, Water resources, Containers and Packaging	Increase and diversification of available subsidies and financing due to strengthened nature-related policies	Bonds and loans linked to water efficiency improvements and environmental performance	●	●	●	10	15	20	As this risk was newly identified during the reporting period, we will further assess and develop appropriate mitigation and response strategies.
	Reputational Capital	Climate change, Biological resources, Water resources, Containers and Packaging	Enhanced brand value through recognition of nature-related initiatives	- Building relationships with local communities through collaboration with NGOs and other organizations - Improved employee retention	●	●	●	20	20	10	- Appropriate communication with consumers - Appropriate disclosure in line with TCFD and TNFD recommendations

*Risk Emergence Period are defined as follows: short-term: 2025 -2027; medium-term: 2028 -2030; long-term: 2031 -2050.