Identification of risks and opportunities

The risks and opportunities related to material environmental issues that are believed to affect the Kirin Group's business and the strategies for addressing them are as follows. We have assumed short-term (within three years), medium-term (until 2030), and long-term (until 2050) periods in which these risks and opportunities will manifest.

Theme	Scenario	Major risks	Time period			Negative impact on society	Negative impact on businesses	Possibility of difficulty in recovery	Major opportunities	Time period			Resilience of society	Positive impact on businesses	Positive impact on customers and society	Strategies for addressing risks and opportunities
			S	M	L					S	M	L				
Biological resources	Decrease in yields of main ingredient agricultural products in the 2℃/4℃ scenarios	Agricultural products: price hike, quality deterioration, concerns about stable supply, and transferring optimal production regions	●	●	●	↓↓↓	↓↓	↓↓↓	Securing of stable supply / Differentiation / Improvement of reputation through Kirin's original mass plant propagation technologies	●	●	●	↑↑↑	↑↑↑	↑↑↑	Cultivate, expand and procure sustainable agricultural raw materials Stand by the side of farmers to make raw material production areas sustainable
									Brewing technology using alternative sugars that does not rely on barley	●	●	●	↑↑↑	↑↑↑	↑↑	
									Stable supply / Strengthening relationships with agricultural production regions by supporting the acquisition of sustainable farm certification / Improvement of reputation through Kirin's original mass plant propagation technologies	●	●	●	↑↑	↑↑	↑	
	Regulations on the use of petroleum-based fertilizers/chemical pesticides	Agricultural products: poor growth, quality deterioration, pest spread, and price hike, concerns about stable supply, and transferring optimal production regions		●	●	↓↓↓	↓↓	↓↓↓	Stable supply / Cost reduction by providing appropriate guidance on the use of fertilizers and pesticides through the support for acquiring sustainable farm certification / Strengthening relationships with agricultural production regions by supporting the acquisition of sustainable farm certification / Quality improvement	●	●	●	↑↑	↑↑	↓↓	
	Decrease in domestic farmers/ expansion of idle lands	Difficulty in supplying unique agricultural ingredients (hops, grapes for Japan Wine)	●	●		↓	↓↓	↓↓↓	Community revitalization by promoting environmentally-friendly agriculture in agricultural production regions / Stable supply	●	●		↑↑↑	↑	↑↑↑	
	Interest in ecosystems/human rights	Reputation risk against procuring agricultural products inconsiderate to ecosystems/human rights	●	●		↓↓↓	↓↓	↓↓↓	Anticipation for ethical consumption	●	●	●	↑↑↑	↑↑↑	↑↑↑	
Water Resources	Water stress at production sites	Suspension of manufacture due to water shortage/decline in water quality	●	●	●	↓↓↓	↓↓↓	↓↓↓	Cost reduction through water conservation	●	●		↑↑↑	↑	↑↑↑	Bring water, used as a raw material, to a sustainable state Solve problems with water in a way that suits the characteristics of basin regions where our business bases are located
		Reputation risk against water use during droughts	●	●	●	↓↓↓	↓↓↓	↓↓	Improvement of reputation for water conservation considerate to local communities	●	●	●	↑↑↑	↑↑↑	↑↑↑	
	Water risk in domestic production sites/logistics sites/logistics channels	Suspension of manufacture and transport due to floods, etc.	●	●	●	↓↓↓	↓↓↓	↓↓↓	Continually improved BCP and execution capabilities	●	●		↑↑↑	↑	↑↑↑	
									Increase in trust / Stable operation in the community through continuing Water Source Forestation Activities and clean-up activities in basins	●	●		↑↑	↑↑	↑↑	
	Water intake/drainage restrictions at production sites	Suspension of manufacture due to water shortage/wastewater restriction	●	●	●	↓↓↓	↓↓↓	↓↓↓	Cost reduction through water conservation	●	●		↑↑↑	↓	↑↑↑	
	Water risk/water stress in ingredient agricultural production regions	Rise in prices of agricultural products/concern about stable supply	●	●	●	↓↓↓	↓↓↓	↓↓↓	Stable supply through measures to conserve water resources in ingredient production regions / Strengthening relationships with agricultural production regions by supporting the acquisition of sustainable farm certification / Improvement of reputation through Kirin's original mass plant propagation technologies		●	●	↑↑↑	↑↑	↑↑	
									Stable supply through measures to conserve water resources in raw material production areas / Strengthening relationships with agricultural production regions by supporting the acquisition of sustainable farm certification / Improvement of reputation through Kirin's original mass plant propagation technologies	●	●	●	↑↑↑	↑↑	↑↑	
	Water intake restrictions in agricultural production regions	Poor growth/decline in quality of agricultural products/rise in prices/ concern about stable supply	●	●	●	↓↓↓	↓↓↓	↓↓↓	Stable supply through provision of water-saving agricultural technology in raw material production areas/strengthening relationships with agricultural production regions by supporting the acquisition of sustainable farm certification / Improvement of reputation through Kirin's original mass plant propagation technologies	●	●	●	↑↑↑	↑↑	↑↑	
Containers and Packaging	Large price fluctuations in the oil market under the 2℃/4℃ scenarios	Concerns about supply of raw materials for PET bottles		●	●	↓↓↓	↓↓↓	↓↓↓	Stable procurement of plastic containers that are not affected by the oil market by increasing the use of recycled resin		●	●	↑↑↑	↑↑↑	↑↑↑	Develop and disseminate sustainable containers and packaging Build a resource-recycling system to make containers and packaging sustainable
	Deforestation in the 2℃/4℃ scenarios and inconsiderate agriculture, forestry, and livestock industries	Reputation risk/concerns about stable supply of raw materials for paper containers and packaging	●	●	●	↓↓↓	↓↓↓	↓↓	Stable supply of paper products with FSC certification / Anticipation for ethical consumption	●	●	●	↑↑↑	↑↑↑	↑↑↑	
	Expansion of the marine plastic problem/lack of resource circulation system	Reputation risk against PET bottles/ concerns about stable supply of recycled resin	●	●	●	↓↓↓	↓↓↓	↓↓	Stable procurement of plastic containers by increasing the use of recycled resin and inedible resin	●	●	●	↑↑↑	↑↑↑	↑↑	
									Reduced use of container materials through our original light-weight packaging technology / Cost reduction	●	●	●	↑↑↑	↑↑↑	↑	
									Improvement of reputation for seriously addressing the marine plastic problem	●	●	●	↑↑↑	↑↑↑	↑↑↑	
Climate change	Widening of regulations on carbon pricing under the 2℃/ 4℃ scenarios	Rise in fuel procurement costs		●	●	↓↓	↓↓	↓↓	Cost reduction through early achievement of GHG reduction targets		●	●	↑↑↑	↑↑↑	↑↑	Realize Net-Zero GHG emission from the entire value chain Lead to build a decarbonized society
									Elimination of the impact of carbon pricing through energy transition from natural gas and heavy oil to electricity or renewable energy		●	●	↑↑↑	↑↑↑	↑↑	
	Targets under the Paris Agreement not achieved	Various effects under the 4℃ scenario or beyond		●	●	↓↓↓	↓↓↓	↓↓↓	Market expansion and sales expansion of non-alcoholic beverages, tablets, and lactic acid bacteria products that help prevent infectious diseases and heat stroke		●	●	↑↑↑	↑↑↑	↑↑	
	Increase in renewable energy facilities	Reputation risk against energy use resulting from environmentally-inconsiderate construction/operation of renewable energy facilities		●	●	↓↓	↓↓	↓↓	Improvement of reputation through ethical use of renewable energy	●	●	●	↑↑↑	↑↑↑	↑↑↑	

↓ : Negative impact ↑ : Positive impact The number of arrows shows the magnitude of impact.