

## Highlights of Environmental Initiatives

With a view to help make society and businesses more resilient, the Kirin Group established a new environmental vision that takes into account analyses of climate-related risks and opportunities conducted by the Task Force on Climate-related Financial Disclosures (TCFD).



### Complying with TCFD guidelines

Based on the schedule suggested by the TCFD, the Kirin Group is preparing to disclose information covering about five years in compliance with the TCFD's guidelines.

|                                    | 2018   | 2019  | 2020   | 2021   | 2022                                 |
|------------------------------------|--|---|--|--|--------------------------------------|
| <b>Resilience strategies</b>       |  | • Strategy for dealing with medium- and long-term risks drafted   | • Revision of the Long-Term Environmental Vision |  | • Business strategies to be reviewed |
| <b>Deliberations by management</b> |  | • Deliberations by the Kirin Group CSV Committee (refer to the page 38)   | • Deliberations by the Group Executive Committee | • Results to date to be fully deliberated by the Group Executive Committee |                                      |
| <b>Scenario analyses</b>           | • Trial impact assessment of agricultural product yields | • Impact assessment of agricultural product yields<br>• Water stress assessment of agricultural product areas<br>• Carbon pricing impact assessment | • Financial impact assessment                    | • Assessments and research to continue                                     |                                      |

### Main initiatives in fiscal 2019

Impact of climate change on major agricultural product yields/land suitable for cultivation

Legend: Negative/positive impact of less than 10% ▲/+  
From 10% to less than 50% ▲▲/++  
50% or more ▲▲▲/+++

| Agricultural products | Kirin Group Scenario3: 4°C, unwanted world, 2050  |  |   |   |
|-----------------------|---|--|---|---|
|                       | United States   | Asia   | Europe / Africa   | Oceania   |
| Barley                |   | West Asia Yield ▲/+<br>South Korea Yield+  | Finland Spring wheat yield ▲<br>Mediterranean coast (West) yield ▲, (East) yield +<br>France Winter barley and spring barley: Both yields ▲   | Western Australia Yield ▲▲  |
| Hops                  |   |  | Czech Republic Yield ▲  |   |
| Black tea             |   | Sri Lanka Yields down in lowlands<br>Little impact of temperature rise in highlands<br>India (Assam region)<br>For each 1°C temperature rise above average temperature of 28°C, yields down 3.8%<br>India (Darjeeling region)<br>Yield ▲▲-▲▲▲ (Sources from tea industry, not academic papers) | Kenya Rise in altitude of suitable cultivation land<br>Major contraction of suitable cultivating land in Nandhi region and western Kenya<br>Kenyan mountain regions will remain suitable for cultivation<br>Malawi Chitipa district: Suitable land ▲▲▲<br>Nkhata Bay district: Suitable land ▲▲▲<br>Mulanje district: Suitable land ++<br>Thyolo district: Suitable land ++ |   |
| Wine grapes           | United States (California) Suitable land: ▲▲▲<br>Northwestern United States Suitable land: +++<br>Chile Suitable land: ▲▲ | Japan (Hokkaido) Expansion of suitable land<br>Enable cultivation of Pinot Noir<br>Japan (Central Honshu)<br>Suitable land expanded on the one hand, but high-temperature damage also caused   | Northern Europe Suitable land: +++<br>Mediterranean coast Suitable land: ▲▲▲<br>Spain Production volumes ▲-▲▲<br>Western Cape, South Africa Suitable land: ▲▲▲  | New Zealand Suitable land: +++<br>Southern coastal regions of Australia Suitable land: ▲▲▲<br>Outside southern coastal regions of Australia Suitable land: ▲▲ |
| Coffee beans          | Brazil Suitable land for Arabica: ▲▲▲<br>Suitable land for Robusta: ▲▲▲   | Southeast Asia Suitable land for Arabica: ▲▲▲<br>Suitable land for Robusta: ▲▲▲  | East Africa Suitable land for Arabica: ▲▲<br>Suitable land for Robusta: ▲▲  |   |
| Corn                  | Southwestern United States Yield ▲▲<br>United States (Iowa in mid-West) Yield ▲-▲▲  |  |   |   |

### Agricultural product yields and water stress

The projected impact of climate change by 2050 and 2100 was analyzed on barley, hops, black tea leaves, and other agricultural products in each country from which supplies are procured.

### Carbon pricing

Preliminary calculations showed that reductions of about 4.7 billion yen annually in carbon emission costs would be possible if the 2030 medium-term target to reduce group-wide greenhouse gas emissions by 30% is achieved compared with if no actions to reduce emissions are taken.

### Water risk in manufacturing locations and logistics routes

The risk of flooding was assessed in non-alcoholic beverage manufacturing locations (including outsourced manufacturing) and logistics routes handling four main products.

### Kirin Group Scenario 1: 2°C, sustainable development

|  | 2025              | 2040              |
|--|-------------------|-------------------|
| If the 2030 goal is achieved                     | 4,657 million yen | 4,264 million yen |
| If no actions are taken to achieve the 2030 goal | 5,691 million yen | 8,921 million yen |

Note: Refer to the Kirin Group Environmental Report 2019 for more details

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## Environmental Vision revised

Based on its outlook spanning to 2050, the Kirin Group revised the Kirin Group Long-Term Environmental Vision, its long-term strategy announced in 2013, and re-established it as the Kirin Group Environmental Vision 2050.

### Basic approach

Previous initiatives taken in Japan will be implemented overseas, initiatives implemented in designated areas overseas will be carried out in other areas, and the scale of initiatives will be expanded globally.

The impact of the initiatives will be expanded to not only include the Kirin Group's workplaces and value chain but also society as a whole.

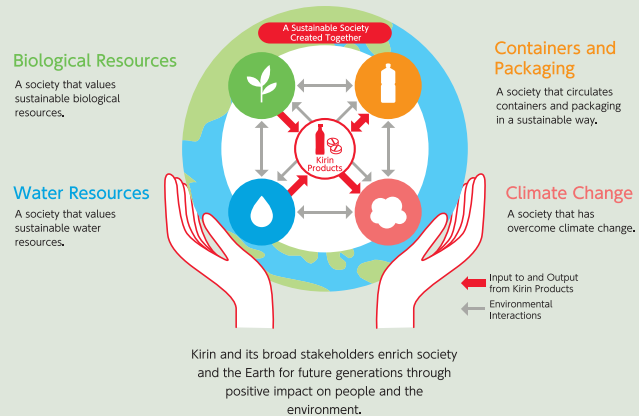
Efforts will not only be focused on curbing the negative impact of the Group's workplaces but also creating a positive impact on the value chain and society while expanding shared value.

### The Kirin Group Environmental Vision 2050

The Kirin Group Environmental Vision 2050 calls for joining together with stakeholders to create a positive impact on society as a whole by combining the social value of ensuring a sustainable natural environment with the economic value of operating sustainable businesses. Specifically, while the Group currently provides support to tea farms in Sri Lanka for acquiring Rainforest Alliance certification, it will expand this support to coffee plantations in Vietnam from 2020 with the goal of both solving environmental problems in areas that grow raw materials and ensuring stable procurement of high-quality raw materials. Meanwhile, Lion Pty Limited is aiming to have all of its offices and facilities powered by renewable energy sources by 2025 in an effort to help curb climate change and bolster measures for realizing a low-carbon society, such as introducing a carbon tax.

Through such pioneering initiatives, the Kirin Group is leading the shift toward creating a sustainable society going forward.

### Kirin Group's Environmental Vision 2050 Enrich the Earth with Positive Impact



### Roundtable dialogue during the revision of the Environmental Vision

Held November 27, 2019

**Participants from outside the Kirin Group:** Yoshinao Kozuma, professor emeritus, Sophia University Faculty of Economics; Manabu Akaike, director, Universal Design Intelligence, Inc.; Mikako Awano, CEO, SusCon Japan

**Chairperson:** Masakazu Oki, Environmental Restoration and Conservation Agency's Japan Fund for the Global Environment

**Participants from Kirin Holdings:** Ryosuke Mizouchi, senior executive officer, and Ryuji Nomura, head of the CSV Strategy Department

