Climate change risk analysis of the T. Hasegawa Group

August 31, 2022

T.HASEGAWA CO.,LTD.

Business Strategy for Sustainable Growth

We view climate change not only as a risk but also as a business opportunity. With the power of flavor and fragrance creation, we will contribute to people's affluent and healthy livelihoods and achieve sustainable growth.

Climate change poses a variety of risks, such as the reduced yield and deteriorated quality of natural raw materials, damage to facilities and equipment due to disasters, and interruption of business activities due to supply chain disruptions. On the other hand, extensive loss of arable land due to climate change, etc. and increased environmental and health consciousness may increase demand for plant-based meat substitutes as well as demand for flavors that bring deliciousness to food products. Rising temperatures will also lead to increased demand for flavors and fragrances that enrich various aspects of daily life, such as soft drinks, frozen desserts, antiperspirants, and detergents.
With these in mind, T. Hasegawa Group aims to contribute to the creation of an enriched society and achieve sustainable growth by using its flavor and fragrance technology to solve the world's problems.
In March 2022, T. Hasegawa Group announced its support for the TCFD (Task Force on Climate-related Financial Disclosures) recommendations and is working to disclose information in accordance with the TCFD requirements.

Megatrends, changes in business environment

Japan
- Population decline, low birth rates, population aging

Global
- Intensifying disputes between nations and regions
- Rising standard of living in emerging nations
- Increase in foreign exchange risks
- Industry oligopoly
- Frequent disasters due to climate change
- Rising temperatures due to climate change
- Reduced crop yield
- Food shortages due to global population growth
- Increased awareness of sustainability
- Consumers' health and natural preference
- Diversification of consumer behavior and purchasing patterns
- Advancement of digitalization, AI

- Environment-related
- Society-related
- Economy-related
- Technology-related
- Geopolitics-related

Impact on T. Hasegawa

Business opportunities
- Expansion of business opportunities due to diversification of customer needs such as health consciousness
- Expand demand for flavors and fragrances in emerging nations
- Increased demand for alternative food raw materials and natural raw materials
- Increased demand for beverages, frozen desserts, etc. due to rising temperatures
- Enhanced reputation for sustainability initiatives
- Increased opportunities to use technology

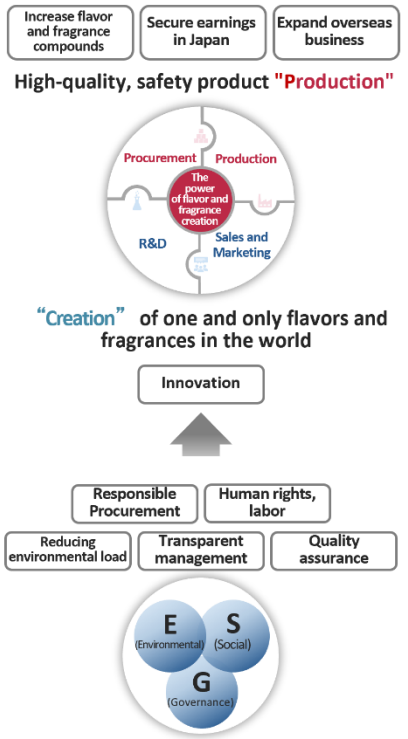
Risks / Challenges
- Maturing domestic market and intensifying competition
- Impact of foreign exchange rate fluctuations on earnings
- Impact of natural disasters on business activities
- Soaring prices and difficulty in obtaining natural raw materials due to conflicts, climate change, etc.
- More stringent regulations for a decarbonized society
- Soaring raw material and energy prices associated with decarbonization
- Growing demand for sustainability disclosure from investors, customers, etc.

The T. Hasegawa approach

Expand business opportunities
- Creating a framework for providing diverse flavors and fragrances that are safe, reliable, and suited to customer preferences
- Overseas local procurement and local production
- Sustained R&D investments
- Strengthen technology and innovation based on trends: secure and develop human resources, utilize databases and AI
- Speedy development: Rapidly identify and respond to customer requests and latent needs
- Detailed customer service

Risk mitigation
- Reinforce raw material inventory management and diversify purchasing routes
- Develop efficient production system, stable product supply
- Reduction in surplus inventory
- Overseas local procurement and local production
- Realization of highly reliable quality assurance system and process control through enhanced inspection systems and strict standardization
- Environmentally friendly products design and manufacturing, environmental safety audits
- Effective use of waste and improvements to deodorizing facilities
- Promoting initiatives to achieve carbon neutrality
- Advancement of business continuity management
- Enhanced information disclosure

Business strategy



Mission

Contribute to the creation of an enriched society through flavors and fragrances

Contributions to SDGs

Strategy

T. Hasegawa Group conducts scenario analysis based on the requirements of the TCFD. Among the "Megatrends, changes in business environment" and "Impact on T. Hasegawa," we have evaluated the impact of environment-related risks and business opportunities that would have on T. Hasegawa.
Regarding the physical risks and opportunities, such as an increase in natural disasters, we have referred to a scenario in which climate change progresses (4°C global warming scenario), and regarding the risks and opportunities associated with the transition to a decarbonized society, we have referred to a scenario in which decarbonization is realized (1.5°C and less than 2°C global warming scenarios) to assess the impact of risks and opportunities leading up to the year 2030.
As we recognize that climate change will have various impacts on corporate management, we will use our "power of flavor and fragrance creation" to innovate and thereby seize business opportunities while rigorously managing risks. In doing so, we shall aim to contribute to the creation of an enriched society and to achieve sustainable growth.

*Please refer to 4°C global warming scenario (IPCC RCP 8.5 etc.), 1.5°C global warming scenario (IEA NZE 2050) 2°C global warming scenario (IEA SDS etc.)

Megatrends, changes in business environment (Environment-related)	Impact on T. Hasegawa (Major environment-related risks and business opportunities)			Impact	The T. Hasegawa approach
■ Frequent disasters due to climate change	Risks/Challenges (Physical)	■ Impact of natural disasters on business activities	Natural disasters, such as floods, may affect the company's sites and value chains, resulting in damage to facilities and equipment and interruption of business activities.	Because there is a high risk of flooding in some locations, there are some concerns about damage to equipment due to submersion and business interruption as well.	■ Advancement of business continuity management
	Risks/Challenges (Physical)	■■ Soaring prices and difficulty in obtaining natural raw materials due to conflicts, climate change, etc.	Conflicts, natural disasters, and unfavorable weather conditions may worsen the yield and quality of natural raw materials, while population growth may increase the demand for food, causing the price of natural raw materials to soar and making them more difficult to obtain.	There are concerns that some of the raw materials we procure may experience lower yields, lower quality, and higher prices due to climate change.	■ Reinforce raw material inventory management and diversify purchasing routes ■ Overseas local procurement and local production
■ Rising temperatures due to climate change	Business opportunities (Physical)	■■ Increased demand for beverages, frozen desserts, etc. due to rising temperatures	Rising temperatures are expected to increase sales of soft drinks, ice cream and other cold desserts, and increase demand for added flavors.	For sports drinks, we expect sales to rise by several percent as of 2030 due to rising temperatures. Sales of flavors and fragrances are also expected to increase.	■ Creating a framework for providing diverse flavors and fragrances that are safe, reliable, and suited to customer preferences ■ Sustained R&D investments
■ Reduced crop yield	Business opportunities (Physical)	■■ Increased demand for alternative food raw materials and natural raw materials	Declining agricultural produce, livestock, and crop yields due to climate change and other factors such as population growth and increased environmental and health consciousness may lead to growing demand for alternative food raw materials, such as meat substitutes, as well as for flavors that bring deliciousness.	The global market for plant-based meat substitutes is expected to grow at least 10% annually. Sales of flavors are expected to expand in tandem with this growth.	■ Sustained R&D investments ■ Strengthen technology and innovation based on trends: secure and develop human resources, utilize databases and AI
■■ Food shortages due to global population growth	Risks/Challenges (Transition)	■ More stringent regulations for a decarbonized society	More stringent regulations on greenhouse gas emissions, such as carbon taxes, to achieve carbon neutrality may increase financial burden.	T. Hasegawa Group's carbon efficiency is high in the chemical sector, and its impact is limited in the same sector.	■ Promoting initiatives to achieve carbon neutrality
■■ Increased awareness of sustainability	Risks/Challenges (Transition)	■■ Soaring raw material and energy prices associated with decarbonization	Changes in energy policy toward decarbonization may change the volume of energy demand and supply and may lead to higher prices for raw materials and energy.	There is concern that the prices of petroleum-derived synthetic fragrance materials and containers, etc., and energy will soar and have a certain impact on the market.	■ Promoting initiatives to achieve carbon neutrality
■■ Consumers' health and natural preference	Business opportunities (Transition) Risks/Challenges (Transition)	■■ Enhanced reputation for sustainability initiatives ■■ Growing demand for sustainability disclosure from investors, customers, etc.	As investors, customers, etc. demand more sustainability measures, there is a possibility of enhancing the Group's reputation because of our high carbon efficiency in the chemical industry.	The ESG evaluation of T. Hasegawa Group, a highly carbon-efficient company in the chemical sector, is expected to improve, leading to an increase in its share price.	■ Promoting initiatives to achieve carbon neutrality ■ Enhanced information disclosure

Governance and Risk Management

T. Hasegawa Group has established the Sustainability Committee, a cross-functional organization chaired by the officer in charge of internal management control, to strategically promote sustainability initiatives throughout the Group, including the matters set forth in the CSR Policy and ESG.
The Committee deliberates on important matters, including the formulation of business strategies and the details of initiatives concerning sustainability for the entire Group. Matters deliberated by the Sustainability Committee are submitted to the Strategy Committee, which consists of the Representative Director and executive officers appointed by the Representative Director, for decision-making, and are also submitted to and reported to the Board of Directors as necessary.
With respect to climate change, we identify and evaluate risks and opportunities that may affect our business. Specifically, the following scenario analyses are conducted to assess the impact of risks and opportunities toward 2030: for physical risks and opportunities such as increased natural disasters, a scenario in which climate change progresses (4°C global warming scenario); for transition risks and opportunities associated with the transition to a decarbonized society, a scenario in which decarbonization is realized (1.5°C and less than 2°C global warming scenarios).
Risks that may affect our business are reported not only in the Sustainability Committee but also in the Risk Management Committee, which is chaired by the President and CEO.

Indicators and Targets

T. Hasegawa Group is working to achieve a "46% reduction in CO_2 emissions in FY 2030 (compared to FY 2013)."
In FY2021, we were able to reduce energy consumption significantly by engaging in efficient production activities. As a result, we reduced Scope 1 and 2 emissions by 3.7% compared to the previous fiscal year. As for our target of achieving a 46% reduction by FY2030 from FY2013 levels (18,793 t), we reduced FY2021 CO_2 emissions by 20.6%.
We also have started calculating Scope 3 emissions on categories for which we are able to calculate. We will receive third-party validation of our CO_2 emission calculations to further expand our understanding of our environmental load.
We will also continue engaging in long-term initiatives related to CO_2 emissions.