

# Environment

Striving for the ideal of a global environment that supports lives of vibrancy.



'Shiseido' comes from a phrase in the classical Chinese text, I Ching: "Praise the virtues of the Earth, which nurtures new life and brings forth significant value." This praise for the Earth, which continuously gives birth to new things, is consistent with Shiseido's goal of sustainability, which aims to create and circulate new value in society. Since Shiseido was founded in 1872, we have developed a business model that combines business success with respect for people, society, and the planet.

In everything we do, we cooperate with our stakeholders across our entire value chain – from procurement of materials and product development through to production, use and disposal – to create value through our products and services and enable the coexistence of people and the environment. This is how we create new sustainable value for the world.

# Reducing Our Environmental Footprint

The impact of climate change, including extreme weather events caused by global warming, is becoming more apparent each year. To preserve the natural environment and its biodiversity, companies must take action to resolve these environmental issues — while simultaneously ensuring sustainable growth for themselves and the global economy. Shiseido has set long-term targets to be achieved by 2030 in order to reduce the environment impact of its business operations. We have identified 3 key actions 'the reduction of CO<sub>2</sub> emissions', 'the reduction of water consumption', and 'waste reduction' under the strategic action of "Reducing environmental footprint". We will continue to work with stakeholders throughout our value chain to create sustainable impact within each of these actions.

■ We are reducing the environmental footprint of our activities by taking actions in three key actions.

- CO<sub>2</sub> : By 2026 Carbon neutral\*1  
By 2030  
Reduce CO<sub>2</sub> 46.2% (SBTi, Scope 1 + 2\*1).  
Reduce CO<sub>2</sub> 55% (SBTi, Scope 3\*2).
- Water : By 2026 Reduce Water consumption 40%.\*3
- Waste : By 2022 Zero landfill.\*4

\*1 : At all our sites, compared with 2019.

\*2 : Entire value chain excluding our sites, Economic Intensity Target, compared with 2019.

\*3 : For all our sites, intensity per sales, compared with 2014.

\*4 : For Shiseido owned factories.

# Developing Sustainable Products

Shiseido's original research and development (R&D) philosophy is based on high safety and quality standards, and this has been passed down for over 100 years. Today, we have redefined this philosophy as "DYNAMIC HARMONY: "fusion of different values" for the new value creation, rooted Western science and Eastern wisdom, as the origin of Shiseido to identify the core of our R&D strategy.

Premium/Sustainability, one of the research approaches of, states that "we will step up to the challenge of creating sustainable value unique to Shiseido, which balances satisfaction stemming from the results, high-quality design, and feel of our products with respect for and coexistence between people, society, and the global environment".

To ensure we can make effective use of limited resources, mitigate climate change, and minimize our impact on ecosystems, we focus on developing sustainable formulas and ingredients, circular packaging and recycling models. In addition, we have implemented a Life Cycle Assessment (LCA) evaluation system to promote the reduction of environmental impact based on life cycle thinking."

■ We use innovation to minimize the environmental impact of our products and disclose our policies on product development.

- Packaging : By 2025 100% Sustainable Packaging.\*5
- Formula/Ingredients : Reduce our environmental and social impact by using sustainably sourced raw materials that are selected in consideration of safety, the environment and ethics.

\*5 : For sale of products with plastic packaging.

# Promoting Sustainable and Responsible Procurement

At Shiseido, we utilize the world's natural resources to develop products and operate our business. We understand that these resources are limited, and we place the utmost importance on the sustainable and responsible procurement of raw materials at every stage of the supply chain. We focus on reducing and reusing resources to promote environmental conservation and biodiversity and contribute to a circular economy. In all our activities, we also work to address and strengthen our response to other sustainability issues, such as human rights.

■ We work with suppliers to procure raw materials in consideration of environmental protection, biodiversity and human rights:

- Palm Oil : By 2026 100% Sustainable Palm Oil Usage\*<sup>6</sup>
- Paper : By 2023 100% Sustainable Paper Usage\*<sup>7</sup>
- Supplier Assessment Program : Create a sustainable supply chain.

\*<sup>6</sup> : Roundtable on Sustainable Palm Oil's (RSPO) physical supply chain models, identity preserved, segregated, and/or mass balance.

\*<sup>7</sup> : Such as certified paper and recycled paper.

## Data

# Reducing Our Environmental Footprint

The impact of climate change, including extreme weather events caused by global warming, is becoming more apparent each year. To preserve the natural environment and its biodiversity, companies must take action to resolve these environmental — while simultaneously ensuring sustainable growth for themselves and the global economy. Shiseido has set long-term targets to be achieved by 2030 in order to reduce the environment impact of its business operations. We have identified 3 key actions 'the reduction of CO<sub>2</sub> emissions', 'the reduction of water consumption', and 'waste reduction' under the strategic action of "Reducing environmental footprint". We will continue to work with stakeholders throughout our value chain to create sustainable impact within each of these actions.

## Reducing CO<sub>2</sub> Emissions

The increasing severity of climate change is leading to numerous issues, including direct health hazards caused by temperature extremes, insufficient water resources, and an accelerated loss of biodiversity. For responding to Climate Change, the world leaders gathered at the COP26 summit\*1 agreed to limit global temperature rises to 1.5°C.



In accordance with the TCFD\*2 framework, Shiseido discloses information on the financial impact that long-term climate-related risks and opportunities may have on its business. Moreover, to ensure a thorough response to these risks — and to leave a better environment for future generations—we support the Paris Agreement and the Glasgow Climate Pact, and have set goals following the Science Based Targets\*3 initiative, which aims to cut CO<sub>2</sub> emissions\*4 in line with the 1.5°C target ahead of 2030. Our CO<sub>2</sub> reduction goals were accredited by the Science Based Targets initiative in 2022.



\*1 : The 26th Session of the UN Climate Change Conference of the Parties.

\*2 : Task Force on Climate-related Financial Disclosures (TCFD).

\*3 : Scope 1, Scope 2, and Scope 3 emissions.

\*4 : Greenhouse gases usually refer to CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, and NF<sub>3</sub>. In this report, unless otherwise specified, these greenhouse gases will be collectively referred to as 'CO<sub>2</sub>'.

## Reducing CO<sub>2</sub> Emissions from Energy Consumption (Scope 1 and 2)

To mitigate climate change, we are committed to reducing CO<sub>2</sub> emissions from the electricity and fuel used in our business activities. As part of our efforts, we use renewable energy where possible and constantly seek to improve energy efficiency in our factories, offices, and other facilities.

## Increasing the Use of Renewable Energy

We are constantly working to increase the use of renewable energy at our factories and offices. By the end of 2022, all our factories (both domestic and overseas) operated on 100% carbon neutral electricity. In addition, we are promoting the use of renewable energy in our offices, such as switching 100% of the electricity at our Shiodome and Ginza headquarters offices to



renewable electricity. As a result, renewable electricity now accounts for 75% of all the electricity used at Shiseido Group.

In addition to promoting the use of renewable energy, we are installing solar panels on the premises and in the buildings of our factories and research centers worldwide. In 2022, our Fukuoka Kurume factory, Osaka Ibaraki factory (both in Japan) and Taiwan factory were equipped with solar panels, and now nine of our factories\* are equipped with solar power generation facilities.



Solar panels at the Fukuoka Kurume factory (Japan)

Shiseido is a member of the RE100 global initiative, which brings together businesses committed to using 100% renewable electricity in their activities. We will continue to accelerate our transition to renewable electricity in our operations to reduce fossil-fuel derived electricity.

\*The nine factories are: Kakegawa (Japan), Osaka Ibaraki (Japan), Fukuoka Kurume (Japan), Shanghai (China), Beijing (China), Taiwan factory, Vietnam, East Windsor (US), Gien (France).

### Improving Energy Efficiency

To increase energy efficiency, we are introducing several building design improvements at our factories, including improved heat insulation, more energy-efficient equipment, and new environmental measures based on the ISO 14001 environmental management system.



West Japan Distribution Center

In addition to using LED lighting to reduce energy consumption, we installed Energy Management Systems (EMS\*) to visualize energy use and CO<sub>2</sub> emissions on equipment that uses electricity, steam, or compressed air. These systems allow us to optimize energy usage in a number of ways and, in this way, help us to reduce energy consumption.

Furthermore, at our Osaka Ibaraki factory and neighboring West Japan Distribution Center—our production and logistics hub in Japan—we installed sandwich panels in the exterior walls. Lightweight and with excellent heat insulation properties, these panels have helped reduce CO<sub>2</sub> emissions generated by operations at the facilities by approximately 30%.

\*A system that realizes efficient use of energy such as energy saving and load leveling by visualizing the energy usage status using information and communication technology

### ■ Kakegawa Factory Initiative Wins the Director General Prize for Agency of Natural Resources and Energy

Our Kakegawa factory in Japan was awarded the Director General Prize for Agency of Natural Resources and Energy (Energy Conservation Best Practices Category) at the Energy Conservation Grand Prize 2022. The Energy Conservation Grand Prize recognizes outstanding energy-saving initiatives and advanced, high-efficiency energy-saving products in Japan's industrial, business, and transportation sectors.



We received this prize for our energy-saving activities at our Kakegawa factory. These include an initiative to achieve carbon neutrality of electricity in cosmetics manufacturing by enabling factory employees to proactively participate in energy-saving projects. As a result of our work, we reduced CO<sub>2</sub> emissions at our Kakegawa factory by 9.5% in 2021 compared to 2019.

The prize recognized the initiatives at the Kakegawa factory for their outstanding versatility. They can be transferred to other sectors, and so have the potential to accelerate energy-saving measures in other industries.

## Reducing Indirect CO<sub>2</sub> Emissions from the Value Chain (Scope 3)

Our indirect CO<sub>2</sub> emissions result from our business activities but they are not directly under our control – for example, emissions that derive from the manufacturing and shipping of raw materials or the use and disposal of our products. As part of our work to reduce the impact of our business activities on climate change, we have established science-based long-term reduction targets for our indirect CO<sub>2</sub> emissions, and we are working with our suppliers and other stakeholders to reduce emissions across our entire value chain.

### Procurement of Raw Materials

In line with the green chemistry principles,\*1 we select raw materials that generate low CO<sub>2</sub> emissions, just as we strive to reduce CO<sub>2</sub> emissions during product development. With regard to palm oil-derived materials, which are key ingredients in our products, as well as sugarcane-derived polyethylene and paper for containers, we use raw materials that are not linked to deforestation.

In 2022, Shiseido participated in the CDP Supply Chain Program\*2. Through the program, we expect to reduce CO<sub>2</sub> emissions related to raw material procurement. In 2023, we will begin to monitor our suppliers' CO<sub>2</sub> emissions and engage with them to reduce emissions.

\*1 : The design of chemical products and processes that reduce or eliminate the use or generation of substances that are hazardous to people or the environment.

\*2 : The Carbon Disclosure Project (CDP) Supply Chain Program is an initiative in which member companies use the CDP platform to request that their suppliers disclose information related to climate change, water, and forestry.

### Reducing CO<sub>2</sub> Emissions During Transportation

Shiseido is striving to reduce waste and CO<sub>2</sub> emissions by repeatedly using shipping boxes when procuring raw materials, mainly from bottle suppliers that deliver frequently.

When shipping our own products, we conduct joint deliveries with other domestic companies to optimize transportation routes and improve loading efficiency. In addition, since in 2022, we began double stack palletization\* for improving loading efficiency. We also optimize the use and design of packaging materials according to the shape and volume of the products shipped and actively promote the reuse of protective materials used in transportation.

In February 2023, we introduced an electric truck into our vehicle fleet in Japan on a trial basis. The electric truck is expected to reduce CO<sub>2</sub> emissions by 1 ton per year, and we plan to expand our fleet of electric vehicles moving forward.

\*A logistics process consisting of placing goods together on top of a pallet to consolidate the load at the warehouse.



Shiseido's EV truck

## Assessing Climate Risks and Opportunities

Given the seriousness of the impact of climate change issues on business growth and social sustainability, Shiseido has been disclosing information in line with TCFD's framework. Disclosures include the results of our qualitative and

quantitative analyses of the risks and opportunities associated with the transition to a decarbonized society and changes in the natural environment due to climate change for both the 1.5/2°C and 4°C scenarios, as well as our major actions, over the short, medium, and long term.

## Governance

Shiseido is promoting sustainability initiatives through our brands and regional businesses. In 2022, the Shiseido Sustainability Committee was held regularly to ensure prompt decision-making in sustainability-related operations and company-wide implementation. The committee makes decisions on group-wide sustainability strategies and policies, manages the progress of medium- and long-term targets, and implements such activities as the TCFD and human rights actions. Attendees consist of representative directors and executive officers of corporate strategy, R&D, supply network, public relations, brand holders, who actively discuss issues from the perspective of their respective areas of expertise. For decisions regarding business execution, issues are also discussed by the Global Strategy Committee and the Board of Directors.

## Strategy (Scenario Analysis)

We conducted our scenario analysis for both the transitional and the physical risks/opportunities in terms of the 1.5/2°C and 4°C scenarios, respectively, based on the Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSPs) provided by the IPCC.

Regarding transitional risk, the elements associated with the transition to a decarbonized society — such as policy, regulation, technology, market, and consumer perceptions — were considered. Physical risks related to the acute or chronic phenomena caused by the rise in temperature — such as floods and water shortages — were also considered. Based on these considerations, the financial impacts of the 1.5/2°C and 4°C scenarios were then analyzed. The influence of carbon tax was identified as the transition risk, with projections pointing toward approximately JPY 0.05-0.87 billion in 2030, depending on the number of countries and regions where carbon tax would be introduced. For Physical risks, JPY 0.89 billion of floods and JPY 3.5 billion of water shortage were forecasted potentially. As for opportunities, in the 1.5/2°C scenario, high awareness by consumers means there is a market for sustainable brands and products. Similarly, the 4°C scenario identifies sales opportunities for products that can help people to live with high temperatures. At Shiseido, we aim to leverage these findings — by mitigating risks and making the most of opportunities to provide sustainable products to consumers and promote our beauty innovations.

## Risks and Opportunities

		Risks	Opportunities
Transition (seen mainly in the 1.5/2°C scenario)		<ul style="list-style-type: none"> <li>• Carbon tax increase ●</li> <li>• Fuel price increase</li> <li>• Loss of sales opportunities for products using single-use plastics ●</li> </ul>	<ul style="list-style-type: none"> <li>• Improve energy efficiency</li> <li>• Develop more ethical products (e.g. clean beauty)</li> </ul>
Physical (seen mainly in the 4°C scenario)	Acute	<ul style="list-style-type: none"> <li>• Natural disasters stop operations (e.g. typhoons, floods) ●</li> <li>• Natural disasters disrupt logistics</li> </ul>	<ul style="list-style-type: none"> <li>• Develop environment-friendly products</li> <li>• Develop climate-adaptive solutions</li> </ul>
	Chronic	<ul style="list-style-type: none"> <li>• Changes in rainfall conditions impact the cost of procuring raw materials derived from crops ●</li> <li>• Water shortages stop operations ●</li> </ul>	

● Risk factor analyzed qualitatively and quantitatively.

Shiseido Climate/Nature-related Financial Disclosure Report, including detailed results of scenario analysis.



## Risk Management

We assessed and identified the impactful risks holistically from a mid-to-long-term perspective. "Environment and Climate Change" and "Natural and Human-made Disasters" are listed as the categories related to sustainability. Climate-related risks are analyzed based on scientific and socioeconomic evidence and integrated into the enterprise risk management system as one of the elements related to climate change or natural disasters. Based on the significance of the evidence, the Shiseido Group's risk assessment and countermeasures are reviewed by the Global Risk Management & Compliance Committee, the Global Strategy Committee, and the Board of Directors.

## Metrics and Targets

In order to mitigate the climate-related risks, we set the reduction of CO<sub>2</sub> emissions as our target. We aim to achieve carbon-neutrality by 2026, and to reduce by 46.2 % by 2030 compared to emissions in 2019 for Scope1 and Scope2 emissions. For the target of Scope 3 emissions, 55% reduction in economic intensity by 2030 was set. These were accredited by SBTi\* as a scientific target along the 1.5°C trajectory. In addition, we have set appropriate metrics and targets related to climate issues, such as "Water consumption at our sites" and "Rate of switching to RSPO-certified raw materials," and aim to build a resilient business.

\*SBTi is a global initiative that defines and promotes best practice in science-based target setting and independently assesses companies' targets.

## Reducing Water Consumption

Water supports every aspect of our products, including the development of water-containing products such as lotions; the growth of plants as raw materials; temperature control and equipment cleaning at factories; consumption; and waste disposal.

In view of the importance of water resource management, we cooperate with stakeholders (Water Stewardship\*<sup>1</sup>), we cooperate with stakeholders to promote the sustainable use of water resources by working to understand the water cycle and the environment of watersheds, reduce water consumption, increase the effectiveness of its use, and ensure thorough control of water quality. In addition, we prioritize the healthy circulation of water in water systems, value unique regional water-related cultures, and respect people's right to safe drinking water and sanitation\*<sup>2</sup>. At the same time, we work to educate our employees on water-saving measures, and encourage our stakeholders, including our employees, to contribute to achieving Goal 6 of the UN Sustainable Development Goals\*<sup>3</sup>.

\*<sup>1</sup> : Using water in a way that is socially equitable, environmentally sustainable, and economically beneficial.

\*<sup>2</sup> : SDGs Goal 6: Ensure availability and sustainable management of water and sanitation for all.

\*<sup>3</sup> : Using water in a way that is socially equitable, environmentally sustainable, and economically beneficial.

## Water Saving Initiatives

We actively work to reduce water consumption at all our factories. As each Shiseido factory has various facilities and equipment tailored to the kind of cosmetics it produces, we design specific water reduction initiatives for each site.

Examples of our water-saving initiatives include using automatic cleaning to ensure the manufacturing equipment is cleaned more effectively, consolidating the washing locations of equipment parts, and redesigning the nozzles on our cleaning facilities. At our Val de Loire factory in France—an area where rainfall is expected to drop in future—initiatives like these successfully reduced the amount of water used per clean by 30%.

When we build new facilities, we incorporate water-saving processes in the design. This measure has a significant impact. For example, we expect our Fukuoka Kurume factory in Japan—which began operations in 2022—will use around 6,600 tons less water per year than equivalent factories, as well as expecting around 466 fewer hours on cleaning.

To ensure more effective use of water, we focus on circular systems that clean water and reuse or recycle it within the process. At our Taiwan factory, for example, we reuse 100% of the wastewater from our water purification systems in onsite facilities. At our Osaka Ibaraki factory in Japan, we introduced a circular system that utilizes re-used water to



cool the manufacturing tanks. This system led to an annual reduction in water consumption of around 65,000 m<sup>3</sup> in 2022. Other new water utilization initiatives include optimizing our pure water manufacturing equipment – as we have done at our Nasu factory in Japan, for example. Pure water manufacturing consumes approximately half of all water used at the factory. Through this initiative, as well as other water recycling schemes, we reduced our annual water consumption by around 72,000 m<sup>3</sup>, an amount that is approximately one third of the factory's annual water usage.

At our Gien factory in France, we switched from water-based cleaning to alcohol-based cleaning for our fragrance manufacturing equipment and transportation components. The alcohol used is cleaned and reused in the process repeatedly.



Water treatment facilities at Nasu factory (Japan)

## Engaging Stakeholders

To effectively use water resources, we are engaged in the management of water resources as common property of the water basin, including secondary use in cooperation with communities.

At our Nasu factory in Japan, we use high-quality groundwater for manufacturing processes and as a raw material for cosmetics. In consideration of the natural environment, the Nasu factory has established its own strict standards to control discharged water, thereby minimizing any impact on the environment and striving to coexist with nature. We regularly engage with local governments and related organizations to discuss the local water resource environment and appropriate water use at this factory.

At our Shanghai factory in China — which is located in a water-stressed\*1 area — we participate in a local environmental protection association and proactively obtain environmental information, such as environmental laws and regulations regarding factory activities. We also report monthly water consumption to the government, which promotes water conservation and is working to improve water utilization rates and strengthen water conservation management. In the area around our Val de Loire factory in France, rainfall volumes are expected to fall in future. Therefore, we regularly share information with other local industries on good water practices to decrease water consumption.

In cooperation with our stakeholders, we conduct water footprint\*2 assessments to better understand the environmental impact of water usage throughout our value chain. We ask our suppliers to provide information on their water usage through self-assessment and strive to ascertain water-related environmental impacts. In addition, we have participated in the "Study Group on Water, Climate Change and Sustainable Development" organized by Professor Oki Taikan of the University of Tokyo, who has outstanding expertise in hydrology\*3, to gather the latest scientific knowledge on the characteristics of water resource, water availability, and the future change forecast associated with climate change. We apply these findings to our analysis of risks and opportunities related to climate change to ensure sustainable water use.

\*1 : A situation where there is not enough water of sufficient quality to meet the demands of people and the environment.

\*2 : A method to quantitatively calculate the environmental impact of direct and indirect water consumption and pollution throughout a product's lifecycle.

\*3 : The study of all aspects of water, including the Earth's water cycles, water usage, and the protection of water sources.

## Reducing Waste

As population growth continues and income levels rise, resource consumption and waste increase. To make more effective use—and reuse—of limited resources, it is important that businesses shift from a disposable, linear economic model to a circular economy.

At Shiseido, we are doing this by optimizing the use of raw materials and reducing waste throughout our entire value chain, while complying with all relevant waste management rules in the countries and regions where we operate.

### Reducing, Reusing and Recycling Waste

At Shiseido, we continuously work to reduce, reuse, and recycle the waste we generate. In 2003, we achieved "zero emissions\*1" at our domestic factories in Japan, and we continue our waste separation and recycling activities to this day. For example, to minimize the amount of sludge generated by our factories during wastewater treatment, we use dehydrators and dryers, recycle cardboard boxes and paper, and reuse shipping boxes. We also compress and melt waste plastics to both reduce waste volume and convert waste into valuable resources.

Our target was to achieve zero waste\*2 to landfill from our factories worldwide by 2022. Thanks to the actions above and other initiatives, we managed to achieve our target in 2020, two years ahead of schedule, and continue to achieve it.

To constantly improve our efforts to reduce, reuse and recycle, we are engaging in various initiatives to minimize waste generated outside of our factories and branch offices. This includes streamlining our product containers and packaging, eliminating package inserts, and shifting to more lightweight cardboard boxes. Moreover, we also work to limit product waste by minimizing excess inventory through improved precision in demand forecasts and shorter lead times in production and procurement.

\*1 : "zero emissions" is a concept defined by UN university in Japan. Recycled waste: 99.5% or higher (excluding waste designated as landfill by law).

\*2 : Excluding waste designated as landfill by law

### Employee Education

All our waste reduction initiatives are driven by our PEOPLE. Therefore, we arrange online seminars and training sessions\* for newly appointed managers and employees in charge of industrial waste in Japan. Following the seminars and training sessions, each participant should be able to identify how to effectively manage waste with the help of our internal guidelines and checklists.

\*Due to the coronavirus pandemic, these are held online.



**Shiseido Climate/Nature-Related Financial Disclosure Report**  
May 30, 2023



## Background

“Give a human face to the global market.”

The philosophy of the ESG investment called for by then UN Secretary-General Kofi Annan in his 1999 speech at the Davos Forum is changing the values of the global economy. Nonfinancial information is now being used to judge a company's future value, as well as financial information by investors, and companies are increasingly required to transparently disclose their goals and performance in sustainability-related initiatives, including climate change. The TCFD<sup>1-3)</sup> and the TNFD<sup>4)</sup> have demonstrated to corporate managers the importance of considering and addressing climate change and biodiversity issues as one of the business priority issues by providing a simple framework, including *governance, strategy, risk management, and metrics and targets*.

In the *Global Risks Report 2023*<sup>5)</sup>, the World Economic Forum warned of the “failure to mitigate climate change,” “the failure of climate change adaptation,” “natural disasters and extreme weather,” and “biodiversity loss and ecosystem collapse” as the greatest long-term risk factors to the global economy. It is important to accurately analyze climate-related or nature-related risks and opportunities and to respond to those issues in advance in order to ensure sustainable business growth considering the recent severe damage caused by disasters.

For example, many cosmetic raw materials are made from agricultural products, such as oil palms. Stable climate conditions, including rain and temperatures, are essential for continuous business growth. If the weather conditions change because of climate change, it will cause water shortages and serious disasters, which will have significant impacts on society, as well as our value chain, including procurement, production, logistics, and sales activities. Therefore, we disclosed the science-based target along the 1.5° C trajectory in addition to analyzing sustainability-related risks and opportunities to mitigate climate change and its risks. We also committed to accelerating and to analyzing

climate-related risks and opportunities and integrating them into company-wide actions. Furthermore, we will switch to RSPO-certified raw materials by 2026 for all cosmetic raw materials derived from oil palms in order to minimize supply chain risks and biodiversity loss as much as possible.

In this report, we present the results of our analysis of the climate-related and the nature-related risks and opportunities based on scientific and statistical evidence as comprehensively as possible in line with the TCFD framework of *governance, strategy, risk management, and metrics and targets*.

The analysis of global environmental issues, such as climate change, assumes a much longer time scale than that of normal business planning and risk management, and it is impossible to forecast all the various changes in society and markets that may occur as a result of environmental issues. Hence, the results contain a great deal of uncertainty and indeterminacy.

## Governance

Shiseido is promoting sustainability initiatives through our brands and regional businesses. In 2022, the Shiseido Sustainability Committee was held regularly to ensure prompt decision-making in sustainability-related operations and company-wide implementation. The committee makes decisions on group-wide sustainability strategies and policies, manages the progress of medium- and long-term targets, and implements such activities as the TCFD and human rights actions. Attendees consist of representative directors and executive officers of corporate strategy, R&D, supply network, public relations, brand holders, who actively discuss issues from the perspective of their respective areas of expertise. For decisions regarding business execution, issues are also discussed by the Global Strategy Committee and the Board of Directors.

## Strategy

### 1. Screening of factors related to risks and opportunities

In considering factors related to climate change, we conducted a scenario analysis for both the transitional and the physical risks and opportunities in terms of the 1.5/2° C and 4° C scenarios, respectively, based on the Representative Concentration Pathways (RCPs) and Shared Socioeconomic Pathways (SSPs). A variety of factors and relationships among them are assumed to contribute to climate-related risks and opportunities.

Regarding transitional risk, the elements associated with the transition to a decarbonized society, such as the policy, regulation, technology, market, and consumer perceptions were considered. Since factors that pose climate-related risks and opportunities are influenced by a variety of events and relationships, we comprehensively identified key physical risk factors based on the IPCC *Sixth Assessment Report*<sup>(6)</sup> and the Shiseido Group's areas of activity.

Table 1: Key risk factors reported by IPCC and Shiseido's activity area

Area	Key Risk	Procurement	Manufacturing	Distribution
Europe	(1) Coastal and inland flooding (2) Increasing temperatures and heat extremes (3) Ecosystem disruptions (4) Water scarcity (5) Losses in crop production	✓	✓	✓
North America	(1) Mental health and mortality (2) Increasing temperatures and heat extremes (3) Ecosystem disruptions (4) Water scarcity and quality (5) Losses in crop production (6) Sea level rising	✓	✓	✓
Central and South America	(1) Water scarcity (2) Infectious diseases (3) Coral ecosystem disruptions (4) Food security (5) Floods (6) Sea level rising	✓		✓
Asia	(1) Human health (2) Floods (3) Ecosystem disruptions (4) Sea level rising (5) Water scarcity (6) Food security	✓	✓	✓
Australasia	(1) Ecosystem disruptions in ocean or alpine area (2) Sea level rising (3) Losses in crop production (4) Increasing temperatures (5) Wildfire	✓		✓
Africa	(1) Ecosystem disruptions (2) Food security (3) Human mortality (Heat and infections) (4) Economic growth and poverty (5) Water scarcity	✓		

In the following sections, the results of the qualitative and quantitative analysis of financial impacts as of 2030 are described. The analysis was conducted based on scientific and statistical data by selecting items with significant impacts from among the individual risk and opportunity factors presented in the IPCC *Sixth Assessment Report*, considering the sustainability and uncertainty of the business and assets, and the lifetime of the business and facilities.

## 2. Carbon tax

The financial impact of a carbon pricing scheme is a concern in the transition to a decarbonized society. Various carbon pricing schemes are being discussed, including a carbon tax, a border carbon tax on the movement of goods from countries and regions with weak carbon regulations to those with strong carbon regulations, Cap & Trade, and an emissions trading system.

Currently, carbon tax prices are set at US\$20–140 per ton of GHG emissions in European countries.<sup>7)</sup>

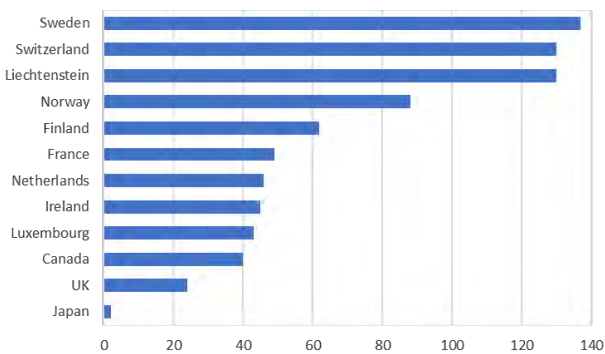


Figure 1: Price of carbon taxes worldwide (as of April 2022, USD/t-CO<sub>2</sub>e)

Since the carbon tax is used to secure the budget for implementing mitigation, adaptation measures, and compensation for climate disasters, the carbon tax price is expected to be determined based on the social cost of carbon in the near future. The International Energy Agency (IEA) has projected a carbon price of US\$120 in the Announced Pledges Scenario to US\$130 in the Net Zero Emissions by

2050 Scenario per ton of GHG emissions in 2030, which includes the cost of implementing climate-related policies. With France and Iceland announcing carbon taxes of €100 and CA\$170 in 2030, the trend toward higher carbon tax prices is likely to continue.

In recent years, a series of studies on the social cost of carbon have been published, and some reports put the appropriate future carbon price at \$500–1,500<sup>8, 9)</sup>. As the carbon tax becomes more expensive, the transaction price in the ETS market is expected to follow the carbon tax price. With this current situation regarding carbon pricing as background, we analyzed the financial burden of the carbon tax in 2025 as a short-term impact, adopting the current level in France, where we have a production plant, and the annual burden as of 2030 using the IEA AP and NZE scenarios for the medium- to long-term impact. Based on the projections for GHG emissions of Scope 1 and Scope 2, we considered the financial impact of the border carbon tax as well, according to the following formula with the assumption that a border carbon tax with the same level is introduced in Europe in 2030 or in all countries and regions where our production plants are located.

$$\text{Carbon tax impact} = \text{GHG}_{\text{in}} * \text{CT}_{\text{in}} + \text{GHG}_{\text{out}} * \text{CT}_{\text{out}} + \text{GHG}_{\text{out}} * (\text{CT}_{\text{in}} - \text{CT}_{\text{out}}) * S_{\text{in}} / (S_{\text{in}} + S_{\text{out}})$$

GHG<sub>in</sub>: GHG emissions in countries and regions with a border carbon tax

GHG<sub>out</sub>: GHG emissions in countries and regions without a border carbon tax

CT<sub>in</sub>: Carbon tax price in countries and regions with a border carbon tax

CT<sub>out</sub>: Carbon tax price in countries and regions without a border carbon tax

S<sub>in</sub>: Sales volume to countries and regions with a border carbon tax

S<sub>out</sub>: Sales volume to countries and regions without a border carbon tax

As a result, it was estimated that the financial

impact over the short term would be small (Scenario 1). However, for the medium to long term, if a carbon tax is introduced only within the EU, the annual impact would be approximately ¥53 million in 2030 (Scenario 2), and if the same level was applied globally, the annual impact would be approximately ¥0.87 billion per year (Scenario 3). If the level of renewable energy deployment in 2030 were to remain at the same level as in 2020, the annual carbon tax burden would be approximately ¥2.2 billion (Scenario 4).

Table 2: Projected financial impact from carbon tax

	Period	Tax price	Region	Impact
1	2025	\$52	France	¥12 mil.
2	2030	\$130	EU	¥53 mil.
3	2030	\$130	All	¥0.87 bil.
4	2030	\$130	All	¥2.2 bil.

At COP27, it was agreed to establish a fund to compensate for losses and damages caused by climate change. According to the *Sharm el-Sheikh Implementation Plan*<sup>10)</sup>, it is reported that US\$5.8 trillion to US\$5.9 trillion will be needed until 2030 to support such developing countries. Assuming that these losses and damages will be financed by a carbon tax in the future, we estimate that the annual burden would be approximately ¥250 million to ¥840 million under the 1.5° C scenario and ¥360 million to ¥1.2 billion under the 4° C scenario even if we had reduced our Scope 1 and Scope 2 GHG emissions by 95% in 2050.

The carbon tax would affect procurement costs. If only GHG emissions at Tier 1 suppliers were subject to a carbon tax, additional costs would be incurred for raw material procurement in proportion to the ratio of GHG emissions from electricity and fuel consumption of GHG emissions from raw material procurement, but in practice, it should be assumed that electricity

and fuel consumption, especially at upstream suppliers located in countries and regions that have introduced carbon taxes, would also be considered. The share of GHG emissions that would be subject to a carbon tax if all upstream suppliers were covered is calculated as the sum of the following infinite sequence of numbers.

$$\text{Carbon tax coverage} = \sum_{n=1}^{\infty} \{(1-x)^{n-1} * x\}$$

$x$ : Ratio of GHG emissions from electricity and fuel consumption of GHG emissions from raw material procurement

For  $0 < x < 1$ , this infinite series converges to 1. If a carbon tax were introduced globally, a carbon tax would be imposed on all GHG emissions from raw material procurement, but discussions at the Conference of the Parties to the United Nations Framework Convention on Climate Change often call for restrictions only on developed countries. Therefore, we calculated the impact of the carbon tax on raw material procurement costs under the IEA NZE scenario with a conservative approach, assuming that up to the tier 3 suppliers operate in countries and regions subject to the tax. The share of GHG emissions from procurement of cosmetic raw materials and packaging materials, which are emitted through electricity and fuel consumption at suppliers, was estimated based on our raw material procurement results using an analysis based on IDEA v2, a life cycle inventory database.

$$\text{Carbon tax impact} = \left( \sum_{n=1}^3 \{(1-x_m)^{n-1} * x_m\} * \text{GHG}_{C1m} + \sum_{n=1}^3 \{(1-x_p)^{n-1} * x_p\} * \text{GHG}_{C1p} \right) * \text{CT}$$

$x_m$ : Ratio of GHG emissions from electricity and fuel consumption of GHG emissions from cosmetic raw material procurement

$x_p$ : Ratio of GHG emissions from electricity and fuel consumption of GHG emissions from packaging



material procurement  
 GHG<sub>C1m</sub>: GHG emissions from cosmetic raw material procurement  
 GHG<sub>C1p</sub>: GHG emissions from packaging material procurement  
 CT: Carbon tax price

As a result, an additional burden of approximately ¥3.5 billion per year was expected, suggesting the importance of working with direct and indirect suppliers to decarbonize the supply chain.

### 3. Floods

The impact of large-scale floods due to the temperature increase was evaluated. For the flood frequency in future, we used the return period of large-scale floods in the RCP 2.6 and theRCP 8.5 scenario reported by Hirabayashi *et al.*<sup>11)</sup> As for the current frequency, we adopted the average number of floods per unit area by country and region for the decade from 2000 to 2019 based on the *Emergency Events Database*<sup>12)</sup> published by the Universite Catholique de Louvain. The inverse of the number of return period in 2100 is taken as the probability of flooding per year. The sum of the probability of flood occurrence at present and one third of the difference between the current probability and the probability in 2100 was adopted as the probability of flooding in 2030.

The amount of damage was calculated for all domestic and overseas factories. Assuming that 50% of the facilities are to be replaced at the factories located in areas where flooding is predicted to be greater than 50 cm, according to hazard maps published by local governments and other sources, the financial impact was the total amount of loss if shipments were suspended with the assumption that production activities at the affected factories would be halted for one month. And for the factories whose hazard maps predicted inundation of 50 cm or less, the financial impact was calculated as the impact of a

three-day suspension of production activities due to disruption of surrounding logistics and difficulty in commuting for employees, assuming no damage to facilities caused by the inundation.

The reported data are evaluated at a spatial resolution of 0.25 degrees in latitude and longitude. Therefore, the results may differ significantly due to slight differences in location information. For this reason, we calculated the average score for each river basin and used them in this analysis. An impact assessment was conducted for all factories, and the total was calculated as the impact of the flooding on the Shiseido Group as a whole. The Kurume factory, which began operations in June 2022, is not included in this evaluation because its contribution to sales is unclear.

$$f(F_{2030}) = FR_0 * FF_{2030} * (S + C)$$

$$\text{Flood impact} = \sum f(F_{2030})$$

FR<sub>0</sub>: Initial value of flood risk

FF<sub>2030</sub>: Probability of large-scale flooding in 2030

S: Hypothetical sales amount suspended by flooding

C: Value of facility of the target factory

As a result, the potential impact of flooding in 2030 under the 4° C scenario was estimated to be about ¥830 million per year of which ¥120 million is attributable to climate change under the RCP 8.5. Especially in Japan, where factories are concentrated, the impact of flooding is expected to increase toward the end of this century; therefore, the importance of taking such measures as developing a business continuity plan and predicting flooding from a long-term perspective was pointed out.

Such extreme weather events have a significant impact not only on shipping from our factories but also on logistics. Therefore, we started to investigate the flood risk of important distribution centers. First, we carried out an analysis based on the same methodology for our distribution centers in Japan and confirmed that the flood risk was low according to the

hazard maps published by the local governments. In some countries and regions other than Japan, as detailed hazard maps are not provided by local governments, a detailed method of analysis based on topographical and other information is under consideration for overseas factories and distribution centers.

#### 4. Drought and water shortage

Shiseido has 13 factories in Japan, France, the United States, China, Taiwan, and Vietnam that use approximately 1.04 million m<sup>3</sup> of water resources annually. According to the Aqueduct<sup>13)</sup> provided by WRI, two of these factories in China are rated as being located in high water stress areas. On the other hand, even if water resources are abundant at present, rainfall in some areas is expected to decrease in the future due to climate change. In this section, the result of the analysis of how access to freshwater resources may change because of reduced rainfall associated with climate change and demographics and how the operations of production factories may be affected by these changes will be described.

Table 3: Water usage at factories in 2022

Water stress	Country and region	Withdrawal (m <sup>3</sup> )
Low – Medium	Japan France US Vietnam Taiwan	937,000
High	China	102,000

According to the report *Current Status of Water Resources in Japan*<sup>14)</sup> published by the Ministry of Land, Infrastructure, Transport and Tourism, a survey of approximately 170 sites throughout Japan showed that water supply restrictions were implemented 590 times during the 30 years from 1991 to 2020 due to drought. Long-term water supply restrictions were imposed 40 times for 2,865 days.

This means that per year, water supply restrictions are in place for 96 days. Short-term water supply restrictions are in place for 128 days per year based on the assumption of 7 days for each short-term restriction. When assuming that the percentage of factory production capacity lost due to short-term and long-term water supply restrictions is 10% and 100%, respectively, the potential drought risk for factories in Japan today can be set at 0.041% of production capacity lost. For the factories located in countries and regions other than Japan, the initial value of the drought risk in Japan was used as the standard value, and the value weighted by the Water Unavailability Factor ( $f_{wua}$ )<sup>15)</sup> for surface water was adopted as the initial risk. The  $f_{wua}$  is a characterization factor that weights the scarcity of water resources by the size of the land area required to collect 1 m<sup>3</sup> of rainwater, surface water, and groundwater, respectively.

Rainfall projections were based on the relative precipitation change from 2011 to 2040 under the RCP 8.5 scenario, reported by Hanasaki *et al.*<sup>16)</sup> The reported data are evaluated at a spatial resolution of 0.25 degrees in latitude and longitude. Therefore, the results might differ significantly due to slight differences in location information. For this reason, we calculated the average score for each river basin and used them in this analysis. The amount of damage was calculated based on the assumption that factory operations would be suspended depending on the severity of the water shortage. In addition, the demographic change of the country or region where the factory was located was adopted as one of the explanatory variables based on the medium scenario of the United Nations demographic projections<sup>17)</sup> because access to water resources is also affected by the population. The effect of demographic change is weighted 1/9 compared to the effect of precipitation change.

The financial impact due to suspended factory operation was calculated for all domestic and overseas factories by the risk function with a sinusoidal curve in response to the risk factors of rainfall reduction or

population increase between the thresholds where the impact becomes apparent and where the impact is maximized because the effect of the fluctuation and the buffer effect of water storage infrastructure should be taken into consideration.

The reciprocal of the standard deviation  $\sigma_N$  of the rainfall variability from the average rainfall in the years without long-term water supply restrictions over the past 30 years was used as the threshold at which the impact begins to become apparent. The standard deviation  $\sigma_L$  of the rainfall variability from the average rainfall in the year when long-term water supply restrictions were implemented is taken, and the threshold at which the impact is maximized is the amount of rainfall that decreases by an amount equivalent to  $3\sigma_L$ . The following formula was used to model the relative change in drought risk to initial risk, and the amount of damage caused by the suspension of manufacturing operations for each domestic and overseas factory was evaluated as the financial impact. And the sum of these was calculated as the impact of water shortages for the entire Shiseido Group.

$$f(P) = (\sin((T_{Pmin} - P)/(T_{Pmin} - T_{Pmax}) * \pi - \pi/2) + 1)/2$$

$$f(D) = (\sin((T_{Dmin} - D)/(T_{Dmin} - T_{Dmax}) * \pi - \pi/2) + 1)/2$$

$$\text{Drought impact} = \sum \{R_0 * (0.9 * f(P) + 0.1 * f(D))\} * S$$

P: Relative change in rainfall from 2011 to 2040

D: Population growth rate from 2011 to 2040

$R_0$ : Initial risk magnitude

$T_{Pmin}$ : Threshold for the rate of rainfall decrease at which impacts begin to become apparent

$T_{Pmax}$ : Threshold of the rate of rainfall decrease at which the impact is maximized

$T_{Dmin}$ : Threshold for the rate of population growth at which the impact begins to become apparent

$T_{Dmax}$ : Threshold of population growth rate at which the impact is maximized

S: Sales of products shipped from the target factory

As a result, the potential financial impact of water shortages as of 2030 was projected to be about ¥3.5

billion of which the risk was assessed to be about ¥10 million less due to climate change. This is because the competition for water resources in Japan, the center of production, is expected to ease as rainfall tends to increase toward the end of the century and the population is expected to decline. On the other hand, the potential risks in China, which is currently experiencing high water stress, and in Europe, where rainfall is expected to continue to decline toward the end of the century, were rated as high, and attention should be paid to water risk management, especially in these regions. In order to manage water risk from a long-term perspective, we selected “water consumption at our business sites per net sales” as the metric and set the target as a reduction by 40% per unit of sales by 2026. We will work to mitigate the risk and reduce the impact on the watershed environment by reducing water consumption through the introduction of water-saving and reclaimed water facilities, especially at factories that use a lot of water.

In addition, as a pioneering initiative for water resource management through the Ohta River basin, the Nasu factory has begun surveying the water environment of the Nasu area. By comparing the input and output of water resources by the natural water cycle in the influencing area of the basin with the status of water intake and drainage throughout the entire basin society, including the Nasu factory, we aim to share the criterion for sustainable water resource management among the stakeholders in the basin.

## 5. Impacts on procurement

Many of the cosmetic raw materials purchased by Shiseido are made from plants. The precipitation change due to climate change also affects raw material production derived from agricultural harvests. Based on our actual raw material procurement results in 2021, we analyzed how much and in which regions water resources were used to grow raw material crops on the basis of water footprint methodology<sup>18)</sup>. The sustainability of water consumption was analyzed by

the precipitation change until 2100 and the demographic projections for each country and region used in the previous chapter.

As a result, we identified the material crops and locations whose cultivation would be significantly affected by climate change. These crops may make procurement impossible along with significant increases in costs. We will implement measures to avoid or mitigate the risk by changing the materials and diversifying the production areas for the material crops that might be severely affected.

Second, we analyzed the increase in procurement costs for palm oil and palm kernel oil, which are the most commonly used oilseed crops for cosmetic raw materials, because of the instability of agricultural production. First, we identified the raw materials containing ingredients derived from palm oil and palm kernel oil, such as glycerin and fatty acids, based on the actual procurement of raw materials in 2019, and calculated the total usage of palm oil and palm kernel oil. Then, we estimated the usage of palm oil and palm kernel oil for raw material production in 2030 based on our business growth scenario. Next, a regression analysis was conducted based on the monthly market transaction prices of palm oil and palm kernel oil over the past 25 years (1997–2021) to determine the average price increase, the standard deviation of the ratio of price fluctuations to the average price, and the frequency of prices exceeding the average. Based on the price trends, we forecasted the average price of palm oil and palm kernel oil in 2030 and calculated the potential price increase due to production instability caused by climate change by assuming a contribution of 0.5 from extreme weather events to the frequency of price upswings. The rate of increase in the frequency of once-every-10-year hot temperatures over land, heavy precipitation, and droughts as reported in the IPCC *6th Assessment Report* was applied to project the increase in the frequency of production destabilization. The IPCC report shows the frequency of extreme weather events in 2100. Therefore, the frequency of extreme weather

events in 2030 was set for the 1.5/2° C (RCP 1.9, RCP 2.6) and 4° C temperature increases (RCP 8.5) based on the assumption of a linear increase in frequency from 2020 to 2100. We calculated the potential price increase of palm oil and palm kernel oil due to climate change by multiplying the average price, estimated procurement volume in 2030, standard deviation of the price fluctuation rate, and the frequency of extreme weather events.

$$\text{Procurement impact} = A_{2030} * P_{2030\text{AVE}} * \sigma * R_{\text{AW}}$$

$A_{2030}$ : Expected procurement amount in 2030

$P_{2030\text{AVE}}$ : Expected average price in 2030

$\sigma$ : Standard deviation of the percentage change in price relative to the moving average

$R_{\text{AW}}$ : Percentage of price upswing by extreme weather events

As a result, we estimated that the potential cost increase as of 2030 would be about ¥140 million per year due to climate impacts under the 1.5/2° C scenario and about ¥290 million under the 4° C scenario. In addition to promoting the procurement of sustainable palm oil, with regard to material crops other than oil palm, we should also be aware of the possibility that material demand might lead to higher procurement costs in the future, as well as the possibility that procurement itself might become impossible because of climate change. We will continue to analyze the financial impact and implement measures to avoid or mitigate risks, such as changing materials and diversifying production areas.

## 6. Geopolitical risks

In 2021, while Asian countries and regions were accelerating the phase out of coal, coupled with the economic stagnation caused by the Covid-19 pandemic, fuel shortages became apparent in Europe. The global shortage of the natural gas supply rapidly increased fuel dependence on some natural gas

producing countries and regions, and this became one of the factors that triggered the military invasion. At first glance, international military conflicts and decarbonization may seem unrelated, but decarbonization is closely linked to energy security. The global expansion of renewable energy will promote local energy production for local consumption and be able to stabilize the energy supply for the long term. But in the short term, it may destabilize the balance between international energy supply and demand and result in serious financial impacts. In addition, the civil war that broke out in the Middle East region in 2011 made the acceptance of refugees a major social issue in Europe. A severe drought that lasted for several years devastated agricultural production in rural areas, and the influx of many people into urban areas is said to have been one of the causes of this civil war. A climate model analysis suggests that this drought was caused by climate change<sup>19</sup>. The breakdown of risks related to such conflicts and civil wars can include the following items:

- (1) Opportunity losses resulting from the suspension of production and sales activities in the countries involved in the conflict
- (2) Increased procurement costs due to shortages in the supply of raw materials and energy produced in the countries involved in the conflict
- (3) Decrease in sales in other countries due to stagnation of the global economy

The potential financial impact of international conflict is expected to be significant compared to other transition and physical risks. We should consider geopolitical instability and destabilization of the energy supply-demand balance as new climate-related risks, and we should also recognize that analyzing the magnitude of the potential impact and developing countermeasures are also important issues to be addressed in the future.

## **7. Increased sales opportunities related to climate change**

In a 4° C scenario with a significant increase in temperatures, sales opportunities for products used in the summer will expand. Shiseido has elucidated the mechanism by which cool-touch ingredients, such as menthol, influence more effectively and continuously through research in the structure of the cell surface<sup>20</sup>. Cool-touch products based on these findings and technologies are expected to expand the opportunities not only in Japan and Asia but also in Europe where heat waves have caused significant damage in recent years.

Furthermore, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) announced that the amount of UV radiation reaching the ground surface in the mid-latitudes of the Northern Hemisphere is expected to increase toward the end of this century due to the various environmental factors, including climate change<sup>21</sup>. The mid-latitudes of the Northern Hemisphere have many large cities with concentrated populations, such as Tokyo and Beijing. The increase in UV radiation is expected to lead to opportunities for the sale of sunscreen products or skincare products that treat skin damaged by UV rays.

In addition to these expectations, we are attempting to identify temperature-dependent consumption and consumer behaviors by a regression analysis of the relationship between temperatures and cosmetics sales performance in Japan over the past five years (2017–2021). Analyzing the relationship between weather, climate, and business is one of the key objectives of climate risk and opportunity analysis because it can lead to the acquisition of new business opportunities.

## **8. Risks and opportunities related to nature and biodiversity**

Biodiversity and ecosystem issues are the aggregation of a myriad of problems at the local level that form a global problem, which are much different from the GHG emissions considered to have a uniform effect on change in radiative forcing. While there are many reports on the effects of economic

activities and climate change on biodiversity, there are very few examples of quantitative and macroeconomic correlations between the effects of biodiversity loss on society and the economic activities of the cosmetic or personal care business sector because the conditions of biodiversity loss and the magnitude of the effects may vary depending on the region where the problem occurs. Therefore, a screening analysis was conducted to identify the dependencies and impacts related to ecosystem services of the personal care industry in accordance with ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure)<sup>22)</sup> provided by the Natural Capital Finance Alliance.

Table 4: Dependencies suggested by ENCORE and Shiseido's activities

Factor	Shiseido's activity
Dilution by atmosphere and ecosystems	Unintentional release of pollutants Release ingredients from products
Fibers and other materials	Raw material procurement
Surface water	Cultivation of raw material crops Raw materials production Manufacturing and facility cleaning Use of products
Ground water	Raw materials production Manufacturing and facility cleaning Use of products

Table 5: Impacts suggested by ENCORE and Shiseido's activities

Factor	Shiseido's activity
Water use	Cultivation of raw material crops Raw materials production Manufacturing Use of products
GHG emissions	Energy consumption Activities on the value chain
Non-GHG air pollutants	NOx, SOx, and PMs from fuel combustion
Water pollutants	Eutrophication, acidification, heavy metal
Soil pollutants	
Solid waste	Waste from our business Waste from sold products

The results indicate that the impacts of raw material procurement and production activities should be considered from the perspective of both the dependencies and impacts on ecosystem services. Since the impact of water resources used in production activities overlaps with the risk of drought and water shortages as climate change-related risks, the results of the assessment of land occupation and water resource consumption at the raw material procurement stage and the biodiversity impacts at our production sites will be described in the following sections.

## 9. Biodiversity impacts due to raw material procurement

In general, cosmetic raw materials, such as surfactants and moisturizers, are classified as chemicals, but many of them actually are made from bio-based resources for all or part of their ingredients. Since many materials, such as paper and bio-based plastics, are also made from bio-based resources for packaging, it is important to analyze the characteristics of individual ingredients and their regional characteristics in order to procure raw materials that have a large biodiversity impact. For this reason, TNFD recommends the LEAP approach as a way for investigating nature-related risks/opportunities.

Table 6: LEAP approach

<b>L</b> Locate	Understand the relationship between business activities and nature, including local characteristics
<b>E</b> Evaluate	Analyze the magnitude of the impacts on nature from business and the dependencies on nature
<b>A</b> Assess	Identify the risks/opportunities with double materiality method from a perspective of dependencies and impacts
<b>P</b> Prepare	Set metrics and targets to manage risks/opportunities for nature conservation and restoration, and disclose the efforts

As part of the “L” and “A” investigations in the LEAP approach, based on the molecular structure of ingredients used in cosmetic ingredients, we identified raw materials derived from the bio-based resources of fats, oils, fatty acids, sugars, and alcohols that are used in the production of ingredients and estimated the amount of crop inputs for the agricultural crops that serve as raw materials. Since it is important to identify the regions where these crops are grown in order to assess the biodiversity impact, we mapped the producing countries and regions for each major agricultural crop related to our procured raw materials based on the results of interviews with suppliers, FAOSTAT<sup>23)</sup>, and the market price of crops. Based on that, we calculated the area of land transformation, land occupation, and water consumption.

We are focusing on these items as candidates for the metrics to measure the biodiversity impact of our business activities, and we are currently developing a plan to conduct a more detailed analysis and mitigate the impact.

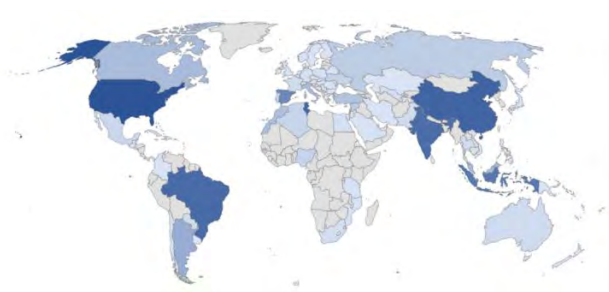


Figure 2: Area of land occupation for material crop production

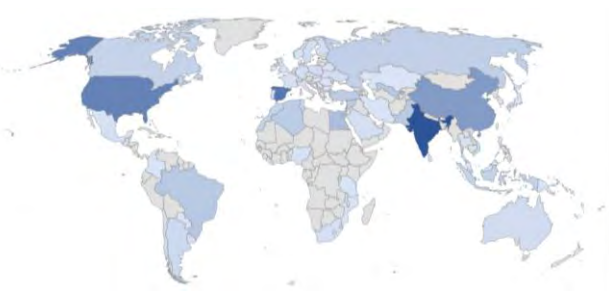


Figure 3: Consumption of irrigation water for material crop production

## 10. Impacts on biodiversity of land occupation of our business sites

Although the relative degree of impact is small, approximately 1% of the entire value chain, we recognize the importance of understanding and minimizing the impact of land occupancy on our own sites on biodiversity from the perspective of land manager responsibility. We, therefore, conducted a study of the relationship between the location of production sites with large areas of exclusive use among our own sites and the habitats of endangered species using the WWF Biodiversity Risk Filter<sup>24)</sup> and the J-BMP (Japan Biodiversity Mapping Project)<sup>25)</sup> provided by ThinkNature, Inc.

As a result, it was confirmed that in Japan, the areas surrounding the Kakegawa and Osaka-Ibaraki factories have high populations of endangered species of vascular plants and freshwater fishes, respectively. In addition to these plants and vertebrates, in France, where the Gien and VDL factories operate, there has been concern in recent years about the decline in the number of honeybees. In order to solve this region-specific problem, the factory stopped the use of pesticides on its premises and installed beehives in the factory to protect the bees. In the future, we will promote the consideration of initiatives to preserve the ecosystem, including endangered species, at other sites by utilizing green areas and water ponds at the sites in accordance with region-specific conditions.



Table 7: Condition of biodiversity and endangered species habitat around production sites

	Country/ Region	Condition of Biodiversity	Physical Biodiversity Risks	Endangered species around site
Kakegawa	Japan	7	6	Vascular plants
Osaka		5	6	Freshwater fishes
Ibaraki		5	6	—
Nasu		6	5	—
Kurume		6	8	—
Kuki		8	7	—
Gien	France	5	9	Under investigation
VDL		5	9	
SAI	USA	6	7	
SLC	China	9	10	
SZC		9	9	
TS	Taiwan	7	7	
SVI	Vietnam	9	9	

## 11. Organizing the relationship between factors

The risk and opportunity factors related to climate and nature are not independent variables but are intricately interrelated. For example, climate change can be a direct business risk factor in that it increases the probability of weather disasters, such as large-scale typhoons, while rising temperatures can also increase supply chain vulnerability indirectly by destabilizing agricultural production through ecosystem impacts, such as the loss or displacement of habitat for temperature-sensitive organisms like honeybees. Conversely, the relationship of cause and effect can be reversed because deforestation with biodiversity loss leads to releasing the carbon stored in the soil, which accelerates climate change.

Therefore, focusing on the factors identified in the previous section, we organized the nexus among the physical and transitional factors related to climate change, biodiversity and ecosystems, water, and resources. Then, we classified the risks and opportunities in the short term (3–5 years), medium term (5–10 years), and long term (more than 10 years) based on the time scale in which each related event becomes apparent in the future. Understanding the relationships among these factors is essential for

appropriate action, and we will continue to analyze these factors for a comprehensive understanding of risk and opportunity.

Table 8: List of climate- and nature-related risks and opportunities

Risk/ Opportunity	Cause	Classification	Time scale		
			Short term	Mid term	Long term
Employee health damage	Temperature rising				+
Relocation of business site	Sea level rising				+
Declining real estate value	Sea level rising				+
Supply chain disruption	Floods				+
Increased procurement cost	Floods, droughts, agricultural production, resource depletion	Climate change (Physical)			+
Increased operating cost	Droughts, resource depletion				+
Suspension of production	Floods, droughts				++
Flood damage to facilities	Floods				++
Increased insurance costs	Floods, sea level rising				+
Disruption of logistics	Floods				+
Suspension of sales activities	Floods, geopolitics		++	++	++
Increased/decreased product sales	Temperature rising, market change			+	++
SCC burden	Carbon tax, adaptation costs		+	+	+
Renewal of energy equipment	Regulation, technology, market change			+	+
Sustainable packaging	Regulation, technology, pollution			+	+
Regulation for ingredient	Pollution		+	+	++
Sustainable brand/product development	Market change			+	++
Additional disclosure items	Land-based GHG emissions		+	+	+
Loss of innovation opportunities	Loss of genetic resources				+

## 12. Specifying the magnitude of impacts and the hotspots on the value chain

In the previous chapter, the relationship between risk and opportunity factors related to climate and nature was organized into four levels: impact drivers by Shiseido's activities, natural phenomena, social transition, and impacts on Shiseido. However, the magnitude of the impact and the dependency between factors are not uniform. In particular, the factors of biodiversity are related to land use and pollution in a complex manner, and their relationships are influenced by region-specific circumstances, such as weather condition or habitat, making it extremely difficult to determine the degree of impact from each factor.

In general, indirect GHG emissions upstream and downstream of the value chain account for most of the total emissions, and the importance of reducing these emissions has been recognized. On the other hand, the demand to assume responsibility for reducing emissions from fuel and electricity consumption within a company is strong regardless of the amount of emissions. Similarly, in the case of biodiversity, management responsibility for one's business sites and the surrounding environment is recognized as important regardless of the magnitude of the impact, while it is expected that indirect impacts in the value chain will be prioritized based on the severity of the impact and that efforts will be required for maintenance, management, conservation, and

restoration. Therefore, it is important to logically estimate the magnitude of indirect impacts on biodiversity loss by factor in order to identify targets for protection and to set metrics and targets.

For the purpose of a comprehensive and quantitative understanding of the magnitude of environmental impacts related to climate and nature associated with business activities, an organizational life cycle assessment (LCA) by LIME 3<sup>26-34</sup> was carried out based on the activity data of the Shiseido Group for 2021. LIME 3, which uses vascular plants with a population parameter of 300,000 species as a model creature, provides the expected increase in the number of extinct species per 1000 species per 1000 years as an endpoint impact of biodiversity loss.

The LCA results indicated that the hotspot for biodiversity impacts is at the procurement stage, and that most of the impacts are caused by land transformation associated with the cultivation of material crops, such as oilseeds and grains used for raw material production. It suggests the importance of collecting and analyzing more detailed information on the agricultural impacts in raw material

procurement in order to understand the impacts of biodiversity loss. An integrated analysis using the G20 population-weighted average willingness-to-pay showed that the externalized costs due to environmental impacts generated from annual business activities were valued at \*US\$227 million of which \*US\$58 million was related to GHG emissions, \*US\$109 million was for water resources, and \*US\$3.0 million was for biodiversity. The TNFD requires companies to address both perspectives of the *dependencies* and the *impacts* on natural capital. In addition, environmental taxes, including the carbon tax described below, are schemes that aim to internalize the externalized social costs caused by environmental impacts to the parties that generated the impacts. The integrated score presented by LIME 3 can be interpreted as reference values to verify the relevancy of the nature-related financial impact and of the expected burden from environmental taxes since it can be considered a proxy of the socially implicitly agreed-upon cost to avoid damage from the environmental impacts.

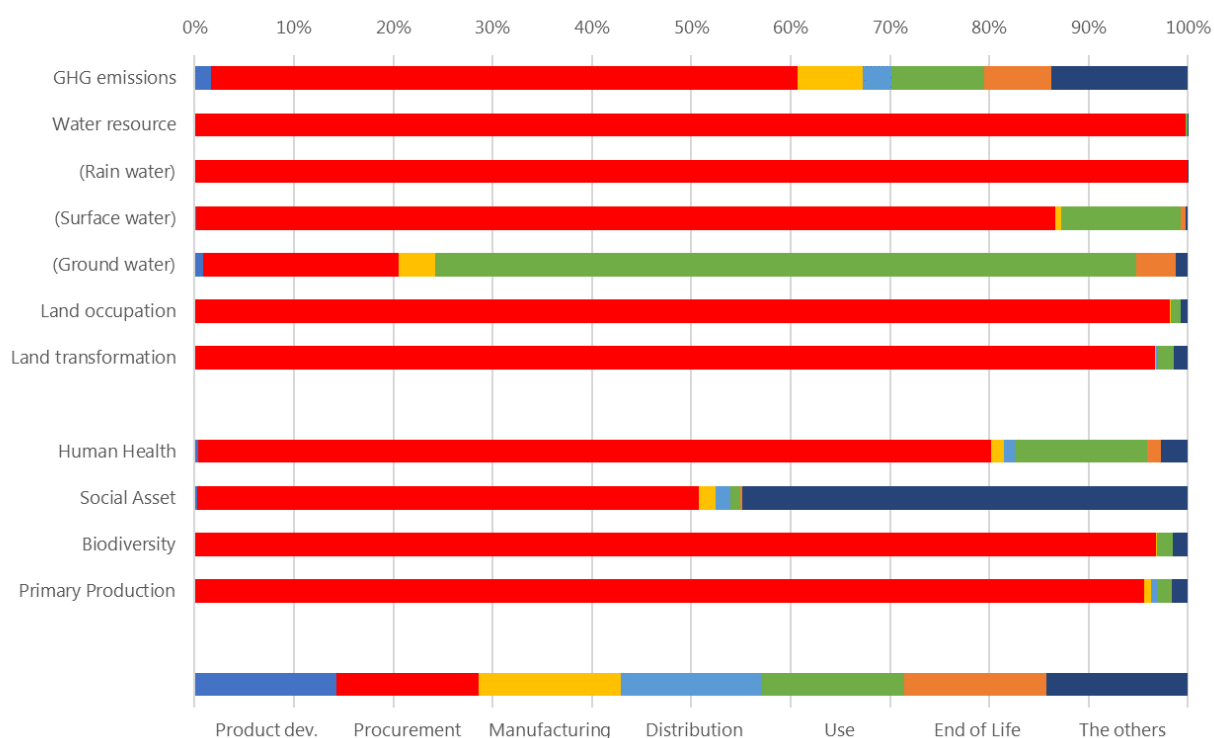


Figure 4: Environmental impacts through Shiseido's value chain

The role of pollinators, such as honeybees, and weevils in the production of agricultural products is well known as one of the most important dependencies on nature. The Food and Agriculture Organization of the United Nations (FAO) has proposed some methods for calculating the value of pollinators<sup>35</sup>): one is an evaluation method based on the additional cost when pollinators are replaced by other pollinators or labor, and the other is based on the amount of loss resulting from changes in supply and demand when the work of pollinators is lost. This can be interpreted as the impacts of the business risk by biodiversity loss and inadequate functioning of ecosystem services by pollinators. Therefore, for the purpose of quantifying biodiversity-related risks, we estimated the number of crops required to produce raw materials based on the actual procurement volume in 2021, and the dependence on pollinators was calculated using the FAO methodology. As a result, the dependence on pollinators was estimated to be about ¥5 billion per year.

On the other hand, these services provided by pollinators are only part of the dependence on biodiversity. If plant seeds attempt to germinate under sterile conditions with a significant lack of biodiversity, they can easily be killed by fungi if they are inadvertently introduced. The fact that plants can germinate and grow in soil inhabited by many different varieties of bacteria and fungi is a benefit of biodiversity that has created a well-balanced state of competition among different organisms. Most of our products contain plant-derived ingredients, and in a broad sense, all of our sales depend on biodiversity. It is important to develop a more comprehensive understanding of both *dependence* and the *impact* on biodiversity, as well as to promote quantitative assessments.

\*Because LIME3 adopts the US\$ as the unit of endpoint assessment, the results are shown in US\$.

## **Risk management**

We assessed and identified the impactful risks holistically from a mid-to-long-term perspective. “Environment and Climate Change” and “Natural and Human-made Disasters” are listed as the categories related to sustainability.

Climate-related risks are analyzed based on scientific and socioeconomic evidence and integrated into the enterprise risk management system as one of the elements related to climate change or natural disasters. Based on the significance of the evidence, the Shiseido Group’s risk assessment and countermeasures are reviewed by the Global Risk Management & Compliance Committee, the Global Strategy Committee, and the Board of Directors.

## **Metrics and Targets**

In 2021, the IPCC declared in its *6th Assessment Report* that it was unequivocal that human influence had warmed the atmosphere, oceans, and land and announced its prediction that the temperature increase would exceed 1.5° C around 2030. In response, the Glasgow Climate Pact, which agreed to limit the increase in global average temperature to 1.5° C or less compared to pre-industrial levels, was adopted at COP26. The Pact can be interpreted as countries all over the world recognize “the toward net-zero emissions” as a common goal. As society moves toward decarbonization, there is no doubt that our business environment will also be greatly affected. Shiseido has continuously promoted initiatives to reduce GHG emissions as a pillar of our environmental activities since the publication of our first *Environmental Report '97* in 1998.

In this chapter, our transition plan for decarbonization and biodiversity conservation is described along with the metrics and the targets for risk and opportunity management and confirmation of the effectiveness of the activities. The plan will be added or modified when longer or more concrete action will be planned, and we will ensure transparent disclosure. For other climate- and nature-related

factors not shown below, we will consider setting appropriate metrics and targets depending on the magnitude of the impact from a long-term risk management perspective.

### 1. GHG emissions and renewable energy

About 60% of the energy-derived GHG emissions come from production at our factories. We use the latest IT technologies, such as energy management systems, to reduce unnecessary energy consumption and visualize GHG emissions from our production processes. This allows us to educate and motivate employees to save energy at our sites. At the same time, we aim to switch 100% to renewable energy-derived electricity by 2030. Regarding GHG emissions, we set the science-based target of 46.2% reduction for Scope 1 and Scope 2 GHG emissions,

and 55% reduction by 2030 in terms of economic intensity along the 1.5° C trajectory.

Shiseido aims to reduce GHG emissions throughout the value chain by working with our suppliers and other stakeholders on introducing renewable energy into our supply chain, preventing deforestation related to raw material production, and developing and implementing new social models for the efficient collection and recycling of a wider range of materials, as well as our own efforts for selecting raw materials based on green chemistry principles, replacing with plant-derived materials, reducing packaging weight by expanding refilling and design optimization, making packaging recyclable, reducing energy consumption, and expanding renewable energy at our sites.

Table 9: GHG emissions of Shiseido

		(t-CO <sub>2</sub> e)	
		2019 (Base year)	2022
Scope 1		27,036	23,912
Scope 2	Market-based	51,714	22,527
Scope 3	1 Purchased products and services	644,000	473,000
	Land use change related to raw material procurement* <sup>1</sup>	(563,000) * <sup>2</sup>	458,000
	2 Capital goods	231,000	150,000
	3 Fuel- and energy-related activities	15,600	9,500
	4 Upstream transportation	110,000	67,500
	5 Waste treatment generated from business	20,700	15,500
	6 Business travel	14,600	2,440
	7 Employee commuting	5,390	7,520
	8 Upstream leased assets	0	0
	9 Downstream transportation	(252,000) * <sup>2</sup>	87,000
	10 Processing of sold products	0	0
	11 Use of sold products	1,580,000	143,000
	12 Waste treatment of sold products	148,000	94,600
	13 Downstream leased assets	0	0
	14 Franchises	0	0
15 Investments	(4,250) * <sup>2</sup>	2,770	

\*1 Indirect emissions related to land transformation were added after 2021 assessment.

\*2 Retroactive calculation results for 2019 are shown in brackets.

## 2. Raw material procurement

Raw material procurement is the largest contributor to our carbon footprint. We recognize the importance of reducing GHG emissions related to raw material procurement through collaboration with our suppliers. Some raw materials generate significant indirect emissions upstream of the supply chain. Palm oil and palm kernel oil, which are one of the most important oilseed crops for food and daily necessities, as well as cosmetics, are derived from oil palms grown in Southeast Asia. Oil palm plantations are often developed and cause deforestation and significant loss of biodiversity. According to a report by Germer *et al.*<sup>36)</sup>, when 1 hectare of tropical rainforest is developed to create a plantation, 777 to 1,443 t-CO<sub>2</sub>e of GHG will be released from the ground over the next 25 years. Analyses based on the inventory databases for LCA and the agricultural statistics suggested that about 80% of the land use change from forests for the production of our raw materials is likely due to palm plantation development. Therefore, in order to prevent GHG emissions associated with such land use changes and to conserve the precious rainforest ecosystem, Shiseido aims to switch all cosmetic ingredients directly purchased to RSPO-certified ingredients by 2026\*. The GHG emissions that can be reduced by this initiative are estimated as approximately 70,000 t-CO<sub>2</sub>e per year for oil palm-derived cosmetic raw materials. In 2022, we switched 36%(w/w) of oil palm-related raw materials to the mass balance-based RSPO-certified raw materials.

In the future, as with oil palms, we will continue to investigate the environmental impact of raw materials due to land use changes for other bio-based ones. Also, we will make efforts to minimize our impact on the climate and ecosystems by switching to sustainable procurement.

## 3. Saving water

Water is an essential resource in all aspects of cosmetics, including the cultivation of crops used as raw material ingredients, heat transfer medium

during production, cleaning, and product use, as well as an important raw material for cosmetics. Climate change is expected to affect atmospheric circulation on a global scale, resulting in significant changes in rainfall conditions. In addition, glaciers in the Himalayas and the European Alps, which are water sources for Asia and the European region, are expected to recede due to rising temperatures. Because of the effects of climate change, there are regions that currently have abundant water resources but will face the threat of droughts in the future. Therefore, in order to make effective use of water resources and mitigate water risks caused by climate change, we are promoting water saving activities, especially at production plants with high water consumption, with the goal of reducing the amount of water consumption at our sites by 40% per sales by 2026 compared to 2014 levels. In addition to saving water by optimizing equipment cleaning and reviewing manufacturing processes, our factories in France, which are particularly interested in water issues, have set their own targets and are working on initiatives to reuse water once used and switch from water to alcohol cleaning for fragrance product manufacturing equipment. As a result, the factories achieved water savings of more than 60% per unit of bulk production compared to 2009.

## 4. Product development

As the transition to a decarbonized society, consumer awareness of climate and environmental issues is expected to increase more than ever. Responding flexibly to these changes in consumer awareness is critical to the sustainability of our business. We aim to replace all plastic cosmetics packaging with reusable, recyclable, or biodegradable materials by 2025. Shiseido developed and provided a variety of solutions for packaging since the launch of the first refillable face powder in 1926. Shiseido declares that it will optimize packaging design, select appropriate materials, and implement the concept of global reuse by refillable and replaceable products for

\* Fragrances are not included.

consumers. In addition to these efforts, we will also work to reduce GHG emissions through innovation for a sustainable future by developing new materials using algae and new chemical recycling methods that can regenerate various types of plastic.

## 5. Disclosure

Shiseido supported the TCFD and disclosed the result of climate-related risk analysis based on the TCFD framework. In preparation for a decarbonized society, we compiled our climate-related goals, scope, and initiatives into a transition plan. We are disclosing climate-related information through our responses to the CDP, as well as our website, *Integrated Report*, and *Sustainability Report*. Our disclosure on Scope 1, Scope 2, and Scope 3 GHG emissions are verified by the independent third party verification organization, SGS Japan, to ensure transparent disclosure. In addition, our target on mitigating climate change is certified as the science-based target along the 1.5° C trajectory by SBTi. Regarding renewable electricity, we have joined RE100 to promote the introduction proactively.

## References

- 1) Recommendations of the Task Force on Climate-related Financial Disclosures (2017) TCFD  
<https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf>  
(accessed on Nov 16, 2022)
- 2) Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures (2020) TCFD  
<https://assets.bbhub.io/company/sites/60/2020/10/FINAL-TCFD-Annex-Amended-121517.pdf>  
(accessed on Nov 16, 2022)
- 3) Guidance on Metrics, Targets, and Transition Plans (2020) TCFD  
[https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics\\_Targets\\_Guidance-1.pdf](https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf)  
(accessed on Nov 16, 2022)
- 4) The TNFD Nature-related Risk and Opportunity Management and Disclosure Framework Beta v0.4 (2023) TNFD  
[https://framework.tnfd.global/wp-content/uploads/2022/11/TNFD\\_Management\\_and\\_Disclosure\\_Framework\\_v0-3\\_B.pdf](https://framework.tnfd.global/wp-content/uploads/2022/11/TNFD_Management_and_Disclosure_Framework_v0-3_B.pdf)  
(accessed on Nov 16, 2022)
- 5) Global Risks Report (2023) World Economic Forum  
[https://www3.weforum.org/docs/WEF\\_Global\\_Risks\\_Report\\_2023.pdf](https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf)  
(accessed on Jan 25, 2023)
- 6) The 6th Assessment Report, The Physical Science Basis (2021) IPCC
- 7) Carbon taxes worldwide as of April 2021, by select country, STATISTA,  
<https://www.statista.com/statistics/483590/prices-of-implemented-carbon-pricing-instruments-worldwide-by-select-country/>  
(accessed on Dec 20, 2022)
- 8) Cameron, H. *et al.* (2019) *Nature* (575) 87–97
- 9) Katharine R. *et al.* (2018) *Nature Climate Change* (8) 895–900
- 10) Sharm el-Sheikh Implementation Plan (2022) United Nations  
<https://unfccc.int/documents/624444>  
(accessed on Jan 5, 2023)
- 11) Hirabayashi, Y. *et al.* (2013) *Nature Climate Change* (3) 816-821
- 12) The Emergency Events Database - Universite Catholique de Louvain (UCL) - CRED, D. Guha-Sapir-<https://public.emdat.be/>, Brussels, Belgium  
(accessed on Nov 16, 2022)



- 13) Aqueduct 3.0 (2019) World Resources Institute, <https://www.wri.org/aqueduct> (accessed on Mar 6, 2023)
- 14) 令和3年版 日本の水資源の現況 (2021) 国土交通省 [https://www.mlit.go.jp/mizukokudo/mizsei/mizukokudo\\_mizsei\\_tk2\\_000028.html](https://www.mlit.go.jp/mizukokudo/mizsei/mizukokudo_mizsei_tk2_000028.html) (accessed on Nov 16, 2022)
- 15) Yano, S. *et al.* (2015) Sustainability 7(8):9753-9772
- 16) Hanasaki, N. *et al.* (2013) Hydrol. Earth Syst. Sci. (17) 2393-2413
- 17) World Population Prospects (2015) United Nations
- 18) ISO 14046, Water Footprint (2014) International Organization for Standardization
- 19) Colin, P., K. *et al.* (2015) PNAS, 112 (11) 3241-3246
- 20) Uyama, M. *et al.* (2018) Journal of Oleo Science, 67 (1), 67-75
- 21) Watanabe, S. *et al.* (2011) Journal of Geographical Research, 116, D16118
- 22) Exploring Natural Capital Opportunities, Risks and Exposure (2022) Natural Capital Finance Alliance <https://encore.naturalcapital.finance/en/tools> (accessed on Nov 16, 2022)
- 23) FAOSTAT, Food and Agriculture Organization of the United Nations <https://www.fao.org/faostat/en/#home> (accessed on Nov 16, 2022)
- 24) Biodiversity Risk Filter (2023) WWF <https://riskfilter.org/> (accessed on March 20, 2023)
- 25) Japan Biodiversity Mapping Project (2020) ThinkNature Inc. <https://biodiversity-map.thinknature-japan.com/> (accessed on Jan 10, 2023)
- 26) Itsubo, N. and Inaba, A. (2018) LIME3, ISBN-10: 4621303228
- 27) Inaba, A. and Itsubo, N. (2018) The International Journal of Life Cycle Assessment, 23, 2271-2275
- 28) Motoshita, M. *et al.* (2018) The International Journal of Life Cycle Assessment, 23, 2276-2287
- 29) Tang, L. *et al.* (2018) The International Journal of Life Cycle Assessment Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 4 March 2019 doi:10.20944/preprints201903.0027.v1, 23, 2288-2299
- 30) Tang, L. *et al.* (2018) The International Journal of Life Cycle Assessment, 23, 2300-2310
- 31) Itsubo, N. *et al.* (2018) The International Journal of Life Cycle Assessment, 23, 2311-2326
- 32) Yamaguchi, K. *et al.* (2018) The International Journal of Life Cycle Assessment, 23, 2327-2338
- 33) Tang, L. *et al.* (2018) The International Journal of Life Cycle Assessment, 23, 2339-2348
- 34) Murakami, K. *et al.* (2018) The International Journal of Life Cycle Assessment 2018, 23, 2349-2364
- 35) Economic valuation of pollination services (2006) Food and Agriculture Organization of the United Nations, <https://www.fao.org/fileadmin/templates/agp/home/documents/Biodiversity-pollination/econvaluepoll1.pdf> (accessed on May 10, 2023)

36) Germer, J. *et al.* (2008) *Environment, Development and Sustainability*, 10, 697–716

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Sustainability Strategy Acceleration Department  
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# Developing Sustainable Products

Shiseido's original research and development (R&D) philosophy is based on high safety and quality standards, and this has been passed down for over 100 years. Today, we have redefined this philosophy as DYNAMIC HARMONY: "fusion of different values" for the new value creation, rooted Western science and Eastern wisdom, as the origin of Shiseido to identify the core of our R&D strategy.

Premium/Sustainability, one of the research approaches, states that "we will step up to the challenge of creating sustainable value unique to Shiseido, which balances the satisfaction stemming from the results, high-quality design, and feel of our products with respect for and coexistence between people, society, and the global environment".

To ensure we can make effective use of limited resources, mitigate climate change, and minimize our impact on ecosystems, we focus on developing sustainable formulas and ingredients, circular packaging and recycling models. In addition, we have implemented a Life Cycle Assessment (LCA) evaluation system to promote the reduction of environmental impact based on life cycle thinking.

## Sustainable Packaging

Climate change and marine plastic waste are pressing environmental issues that need to be addressed on a global scale. It is expected that the Global Plastics Treaty (a resolution of the United Nations Environment Assembly approved by over 175 countries in Nairobi in 2022 which calls for urgent action to end plastic pollution globally by 2040) will be signed by the end of 2024. Shiseido aims to realize a circular economy where all materials are responsibly managed during production through efforts such as recycling to minimize the impact on our ecosystem. It is expected that the interest of consumers and other stakeholders in climate change and other environmental issues will continue to rise. Adapting to changes in societal awareness through product development and other means, is extremely important for the sustainability of our business. Based on the Shiseido 5Rs packaging development policy\*1, Shiseido is working to reduce its environmental footprint and contribute to realize a circular economy. To achieve our goal of 100% sustainable packaging\*2 by 2025, we are adopting recyclable and reusable designs, using bio-based and post-consumer recycled (PCR) materials, reducing packaging weight and encouraging refills to promote reused packaging. We have also started initiatives designed to reduce the amount of virgin petroleum-based plastic used by adopting non-plastic alternative materials, and we are introducing mono-material packaging to improve recyclability.\*3 In addition, we aim to build a Shiseido circular business model that recycles used packaging as new resources in collaboration with consumers and external partners.

\*1 : Packaging development policy: respect, reduce, reuse, recycle and replace.

\*2 : For sale of products with plastic packaging.

\*3 : Amount of plastic packaging used in Japan in 2023 (Including estimates): 9,700t. Sustainable packaging accounted for 63% of all plastic containers sourced in 2023 (weight basis, Japan only)



## Products with Packaging

### Reduce and Reuse

We understand that the Earth's resources are limited. In line with Shiseido's 5Rs packaging development policy, we are reducing the amount of plastic we use and reducing our impact on the environment by such as optimizing the size of packaging to suit the product, reducing packaging weight and offering refillable packaging. Compared to 2019, the average weight of a plastic packaging was reduced by 18% in 2023.

Refillable packaging significantly reduces resource use. By encouraging the reuse of main packaging, it is possible to reduce the total amount of plastic used for packaging. Our Life Cycle Assessment confirms that refillable packaging lowers resource use and waste and significantly reduces CO<sub>2</sub> emissions compared to the continuous disposal of regular (primary) packaging. To significantly contribute to the reduction of the environmental impact, we aim to promote the development of these products widely, not only in Japan but also on a global scale.

Since we launched our first refillable product in 1926, we have provided refillable packaging in a wide range of product categories, including skincare and makeup. In 2023, we offered refillable packaging for about 740 stock keeping units (SKUs) within 31 brands globally in an effort to reduce the amount of plastic and ultimately, to reduce the environmental footprint.

This included increasing the amount of refillable packaging in our prestige skincare brand *Clé de Peau Beauté* and launching refillable packaging for the cream LA CRÈME, which uses 95%\*1 less plastic than its regular (primary) packaging. In 2023, the brand launched new refillable packaging for five new products, including SÉRUM RAFFERMISSANT SUPRÊME n. In 2023, sales of refillable packaging from *Clé de Peau Beauté* increased approximately 23% year on year.

Before launching a refill option for the *IPSA* loose powder that became available in 2023, we redesigned the main container to improve durability and to make it more suitable for repeated use.

We are also incorporating innovative technologies to reduce environmental impact. In 2023, the brand *SHISEIDO*, which operates in 88 countries and regions around the globe, became the first company to sell cosmetics in packaging made with LiquiForm® technology.\*2 It is a one-step technology for manufacturing bottles and filling them with liquid content. Refillable cosmetics packaging made using LiquiForm® can reduce plastic usage per packaging approximately 70%.\*3 Moreover, compared to our conventional refillable packaging (with the same volume), this technology can reduce CO<sub>2</sub> emissions throughout the supply chain—from raw materials procurement and production to use and disposal—around 70%.\*3 We will raise awareness of refillable products by launching them not only in Japan but also in other Asian countries and regions, including China. We will also strengthen our activities to achieve toward a circular economy that seek the cooperation of consumers.

In 2024, *Ulé*, a skincare brand that promotes beauty both inside and outside the body, launched a refillable option made from 100% recyclable materials for cleansing gel Dream of Pure. The refill helps reduce plastic and aluminum usage by 23% and 100% respectively, as opposed to purchasing new packaging. In 2023, the luxury brand *Serge Lutens* launched a fragrance that strikes a delicate balance between sustainability and luxury. The refill packaging is made from 100% recyclable aluminum in consideration of environmental impact.

\*1 : Weight ratio of regular (primary) packaging

\*2 : The new packaging technology was developed chiefly by Amcor. Shiseido worked with Yoshino Kogyosho, a company that has put the technology to use, to jointly develop cosmetic packaging.

\*3 : Comparison with a refillable packaging of the same volume, not including contents



SHISEIDO, Clé de Peau Beauté and Ulé. Left: main container, Right: refill/ refill container.

## Recycle

To realize a circular economy, it is important to select materials and design products with the reuse of resources in mind.

To reduce our consumption of single-use plastic, we are developing packaging made from a material that can be more easily sorted and reused/recycled after use without compromising the quality of the packaging's design.

In 2023, a number of our brands launched products with packaging that is easier to recycle, including SHISEIDO and Clé de Peau Beauté. In addition, the tube packaging for SIDEKICK — a cosmetics brand launched for young male consumers in 2022 — is made of easily recyclable aluminum.



SIDEKICK

## Replace

To mitigate climate change and marine plastic pollution, we are focusing on the research of post-consumer recycled (PCR) materials, plastic alternatives, and bio-based materials with low environmental impact — and promoting their use. For example, packaging of some Clé de Peau Beauté and ELIXIR products is made from recycled plastic.

Over 72% of the PET in the bottles of ELIXIR facial lotion and emulsion is recycled. The facial lotion and emulsion refills help reduce plastic usage by over 85%\*1 and CO<sub>2</sub> emissions by 85%.\*2



ELIXIR facial lotion and emulsion

We also use some plant-derived bio-based plastic in the outer packaging of our ANESSA sun care brand. BAUM, which celebrates and honors our connection with nature, offers environmentally friendly products. Packaging, for example, use sustainable raw materials such as upcycled wood left over from furniture industry, plant-derived or recycled plastic, and recycled glass. Additionally, many containers are refillable.



BAUM facial lotion

In 2023, the Shiseido Group used approximately 200 tons of recycled plastic and bio-based plastic in total.

Products' secondary packaging that is made from plastic is being replaced with paper alternative. In addition, Point of Sale Materials (POSM) used at retail stores, such as drug stores, and counters that are

made from plastic will also be replaced with paper alternatives in due course to further reduce the amount of plastic we use. In 2022, we switched approximately 70%\*3 of our plastic POSM in Japan to paper.

\*1 : Comparison between the existing main container and refill

\*2 : Comparison of the existing main container and refill in terms of CO2 emissions per packaging. The evaluation was carried out by Shiseido using Japan EPD Program by SuMPO (which complies with ISO/TS14067: 2013)

Calculated using the container of the facial lotion sold in September 2022 and onward

\*3 : For promotional materials of premium Japanese brands, such as set cases and hooks.

## Initiatives to Build a Circular Model

Shiseido started a new scheme to collect used plastic cosmetics packaging in stores, utilizing a wide range of business partners and consumer touchpoints. As well as increasing consumer awareness about the value of used containers as a recyclable resource, we hope the scheme will help drive wider behavioral change in society and encourage competitors and companies in other industries to implement circular models.

## In-store Collection and Recycling

To support and promote recycling, we collect used cosmetics packaging in-store and recycle it as new materials. We work with multiple parties to ensure containers are recycled fully and correctly, including customers, waste collection companies, and other companies.

Our skincare brand *IPSA*, for example, operates a recycling program to reduce its environmental impact and promote environmental awareness among consumers. In 2022, the brand collected approximately 63,000 (1,400 kg) cosmetics containers in China through 94 stores, and approximately 22,000 containers in Taiwan\*1.

In Japan, we collected around 30,000 \*1 used containers through 88 AEON stores in collaboration with Aeon Retail Co., Ltd., TerraCycle Japan\*2, and other companies.

\*1 : Collection period: January 2022 - December 2022.

\*2 : TerraCycle is a US-based social enterprise whose mission is "Eliminating the Idea of Waste".

## Collaborating to Build a Circular Model for Plastic Cosmetics Containers

When developing cosmetic containers, protecting the contents, ensuring ease of use, and giving the premium look and feel are considered and designed. As a result, they have to be made from a wide variety of plastics, which can make it challenging to recycle them back into reusable plastic resources. To solve this issue, Shiseido launched an initiative in 2022 in collaboration with SEKISUI CHEMICAL CO., LTD. and Sumitomo Chemical Co., Ltd. The initiative involves creating a circular economy in which plastic cosmetics containers are collected and recycled without separating the materials. We are planning to manufacture recycled plastics in the future by collecting used cosmetic packaging, which we then turn into new cosmetic packaging. The three companies will be advancing this cross-sectoral alliance, while also calling on related industries and companies to join the effort to create a circular economy.



[Click here for Press Release: Collaborating in Building a Circular Economy for Plastic Cosmetics Containers](#)



## “BeauRing” Circular Model Project for Plastic Cosmetics Containers

In 2023, we launched the "BeauRing" project – a circular model project to collect and recycle plastic containers into new ones for reuse. As well as driving in-house initiatives, we are encouraging other companies to join the project to expand the circle of resource circulation and, ultimately, create a sustainable society in which consumers use cosmetics with a more positive mindset. In April 2023, we began collecting used containers from several Shiseido product retailers in Yokohama. The POLA brand of POLA ORBIS HOLDINGS INC. joined in the project.



[Click here for press release: Circular Model Project "BeauRing"](#)

## R Plus Japan Ltd.

To play a part in solving the global plastics recycling challenge, Shiseido invested in R Plus Japan in 2022 and engaged in recycling used plastics. By bringing together companies across the plastic packaging industry—from monomer and polymer manufacturers to packaging producers, trading, food and beverage companies—R Plus Japan aims to commercialize an efficient, low-environmental impact recycling technology by 2030.



[Click here for press Release: R Plus Japan](#)

## Formulas/Ingredients

Shiseido develops and provides safe and high-quality products and services based on more than a century's experience in dermatology and material science.

From an environmental perspective, the sustainable and responsible procurement and use of these products is of the utmost importance. Our Global Innovation Center in Yokohama, Japan, which manages all regional centers, is working to select raw materials and develop formulations that are not only safe and functional but also respect the environment. In line with green chemistry principles, we carefully evaluate our raw materials, ingredients and formulas to ensure they are safe for the human body, have minimal environmental impact, and use natural and upcycled materials sourced through ethical procurement.

## Environmental Initiatives

### UV Care

We are accelerating innovation in the field of skincare to protect against UV and pursue coexistence between people, their ecosystems, and the environment. The effect caused by the climate change, UV exposure for people around the world is expected to increase\*1. Exposure to UV rays over extended periods of time causes spots and wrinkles on the skin — symptoms of photoaging.

We have developed an innovative new technology to convert UV light into visible light (skin-beautifying light) that has beneficial effects for the skin. This is a first in cosmetics. We will continue our research in order to provide products and services with added benefits, including innovations like this that help people coexist more harmoniously with the environment.



Artificial marine ecosystem reproduced in an aquarium using environmental transfer technology developed by Innoqua Inc.

We are assessing the impact that UV filters used in sunscreen products have on the ocean. This includes working with the University of the Ryukyus to assess the impact of each UV filter used in our products on coral\*2, and performing simulations\*3 of how sunscreen products spread into the ocean when used by people at the seashore. We are utilizing the results of these assessments for ingredient selection and the development of coral-respecting formulas, while applying them to sunscreen product development for both *SHISEIDO* and *ANESSA*.

In 2023, in order to evaluate the impact of cosmetic ingredients on marine ecosystems, we began a partnership agreement with Innoqua Inc., a start-up company with proprietary technology to reproduce ecosystems in an aquarium. The aquarium can reproduce possible future environmental change scenarios, including 'rising seawater temperatures', which are predicted to have a tremendous impact on marine life. This allows us to evaluate the impact of various cosmetic ingredients, such as those used in sunscreen, on the entire marine environment, including coral and other organisms.

\*1 : According to an announcement by the Japan Agency for Marine-Earth Science and Technology.

\*2 : Egg-laying size groups of coral, excluding those in the planktonic larval and juvenile stages.

\*3 : Utilizing the Tokyo Bay risk assessment model developed by the National Institute of Advanced Industrial Science and Technology

[Click here for corporate WEB site :Research on Sustainability](#)

[Click here for brand Web Site: ANESSA](#)

## Transparent Information Disclosure

At Shiseido, we want to help tackle issues concerning people's health and the environment. Therefore, we disclosed our company policies regarding the use of ingredients and raw materials that could be concerning for consumers, such as oxybenzone and parabens.

We comply with all relevant regulations in each country where we operate. In addition, we have our own in-house standards for ingredients – and only select ingredients that meet our strict safety, environmental, and ethical standards.

[Click here for Product Development Policy | About Ingredients/Formulas](#)

[Click here for Our Approach for Chemical Substances](#)

## Procuring Sustainable Raw Materials

Shiseido strives to procure environmentally friendly, sustainable raw materials.

Palm oil is used in cosmetics and household goods for a range of purposes, including as a humectant and as an oil. However, palm oil production can have a significant impact on the environment. We have disclosed our medium- to long-term targets for the procurement of sustainable palm oil, as well as our goal to switch from palm oil to more sustainable raw materials. Please see the "Sustainable Raw Material Procurement" section for more details.

## Brands That Caters to Consumer Needs

When selecting a product, consumers increasingly place importance on a company's approach to social responsibility, environmental protection, and ethical raw material sourcing. At Shiseido, in addition to disclosing our corporate policy on ingredient and raw material sourcing, we work to develop brands with a strong environmental, social and ethical profile.

*Drunk Elephant* originating in the U.S. that sold in 40 countries and regions, for example, is a leading brand in the clean beauty market, known for its sustainable and responsible raw material procurement as well as its promotion of sustainable action. Taking this stance, the brand has gained significant support from Millennial and Generation Z consumers.

*BAUM* was established around the theme of coexistence with trees and offers environmentally friendly products. Its containers, for example, use sustainable raw materials—such as upcycled wood from furniture scraps, plant-derived PET, and recycled glass—and many containers are refillable. The brand is also growing its own forest by planting oak trees in the *BAUM* Oak Forest in Iwate Prefecture, Japan—some of this wood is even used as a raw material for packaging. Prior to being planted in the forest, the saplings are nurtured in *BAUM* stores.

In 2022, we launched the *Ulé* skincare brand in France. Based on plant-derived ingredients, Ulé promotes beauty both inside and outside the body. The brand emphasizes responsible procurement, product efficacy and safety, lower environmental impact, and transparency. To ensure clearer raw material traceability and reduce environmental impact from transportation, the brand buys its three botanical treasures (Centella, Coleus and Tulsi) and produces all its products locally in France. The names and origins of the raw materials can be found on the brand website. *Ulé* was awarded the Young and Sustainable Brand Prize in the "Prix d'Excellence Marie-Claire" 2023, the most prestigious beauty awards in France.



「Ulé」



## No Animal Testing

We strive to provide safe and effective products to consumers while complying with cosmetics regulations and respecting the principles of animal protection. For all our cosmetics and quasi drugs, we have established a safety assurance system based on alternative methods using cell cultures or in silico\*1, etc., that do not involve animal testing\*2. We continue to develop effective alternatives to test product safety, and work with administrative agencies in various countries/regions to certify these methods as official, according to the laws and regulations of the given countries/regions.

\*1 : A method of prediction by computer-based calculation.

\*2 : Except when mandated by law.

[Click here for corporate WEB site: Initiatives in Response to Animal Testing and Alternative Methods](#)

## Initiatives with External Institutions

### Granting Technology License to Toyo University for Environmental Impact Reduction

In March 2020, Shiseido became the first WIPO GREEN\* partner company from the cosmetics industry. In 2022, we granted Toyo University a license to use our low-energy manufacturing technology, which is listed in the WIPO GREEN database. Through joint research, Toyo University developed a low-environmental impact, sustainable hand serum using extract from boysenberries harvested near the university.

\*The World Intellectual Property Organization (WIPO) is a specialized agency under the United Nations, responsible for developing international intellectual property systems. WIPO GREEN is an international framework for promoting innovation in environment-related technologies, and has more than 150 partner companies. As of April 2023, Shiseido had licensed out 11 patented technologies registered in the WIPO GREEN database.

### Developing Cosmetic Ingredient Using Protein Fiber and Formulate It into Products

In 2022, we jointly developed a cosmetics ingredient using Brewed Protein™\*1, a biodegradable\*2 fiber made of plant-derived biomass developed by Spiber. This environmentally friendly material is being used in Shiseido mascara products to create supple and beautiful eyelashes. We are now looking into further applications of the fiber in other Shiseido products.

\*1 : Brewed Protein™ is a trademark or registered trademark of Spiber Inc., applicable in Japan and other countries.

\*2 : Biodegradation of raw Brewed Protein™ fiber has been demonstrated in various natural environments including seawater, freshwater, and soil. (Tests for seawater and freshwater were conducted in accordance with ASTM D6691 and ISO 14851, respectively. The seawater test confirmed more than 70% biodegradation within 30 days.)

[Click here for press release: Shiseido and Spiber Jointly Develop Cosmetic Ingredient](#)

### Exploring the Possibilities of Algae in the MATSURI Project

Shiseido has joined the MATSURI project, the world's first corporate joint project to explore how algae can be used to drive a sustainable future. Powered by the sun, algae absorb CO<sub>2</sub> through photosynthesis, while also generating useful proteins, lipids, and carbohydrates. More extensive use of algae is expected to contribute to lower CO<sub>2</sub> emissions in future, where algae products can replace fossil-derived raw materials. MATSURI Project partner companies will work together to develop new business opportunities for the cosmetic industry using algae as a raw material.



[Click here for MATSURI](#)

# Our Environmental Policy and Environmental Management

## Shiseido Environmental Policy

Shiseido will promote sustainability throughout our business including the activities in our sites, to realize a rich global environment where people and nature can coexist in harmony. We will produce and market products and services based on a circulation model at every step of the value chain, from product development and procurement of raw materials to production, logistics, distribution, use and disposal. To realize this commitment, we will collaborate with our stakeholders such as employees, consumers, suppliers and other business partners, and society. In the event of mergers or acquisitions, we will conduct due diligence based on this policy.

- Reducing Our Environmental Footprint and Promoting Sustainable and Responsible Procurement

### CO<sub>2</sub>\*

We will strive to mitigate and adapt to climate change and respond to short- and medium-to-long-term risks and opportunities through our business. Regarding climate change mitigation, we aim to achieve our science-based net-zero emissions targets, and to achieve our scope 1 and 2 targets, we will promote the efficient use of energy, including the reduction of energy usage, the installation of solar power generation equipment and the expansion of the use of renewable energy. To achieve our scope 3 targets, we will work with stakeholders to reduce indirect CO<sub>2</sub> emissions from the value chain. To adapt to climate change, we will work on natural disaster countermeasures in our operations and supply chain and develop products and services that respond to climate change.

\*CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>6</sub> and other gasses are commonly considered greenhouse gases, but in this policy they are collectively referred to as CO<sub>2</sub>.

### Water

In view of the importance of water resource management, we will cooperate with stakeholders (Water Stewardship) to promote the sustainable use of water resources by working to understand the water cycle and the environment of watersheds, reduce water consumption, increase the effectiveness of its use, and ensure thorough control of water quality.

### Resources and Waste

Aim to optimize resources by incorporating a circular economy approach and promoting "Shiseido's 5Rs" (Respect, Reduce, Reuse, Recycle, Replace).

## Biodiversity and Forests

We will strive to conserve biodiversity (terrestrial, freshwater, and marine biodiversity) by assessing the environmental impact of our value chain and implementing mitigation measures such as measure to avoid or reduce activities that impact biodiversity. Regarding our direct impact on biodiversity, we will conduct biodiversity risk assessments at our sites such as factories and engage in conservation activities and other activities as appropriate in the region. Regarding our indirect impact, we will support zero deforestation and work with stakeholders to achieve sustainable and responsible procurement including traceability, since the procurement of key raw materials has the greatest impact on biodiversity.

- Developing Sustainable Products and Services

Based on the principles of Lifecycle Thinking and Green Chemistry, we will strive to create sustainable value unique to Shiseido, which balances the satisfaction stemming from the results, high-quality design, and feel of our products with respect for and coexistence between people, society, and the global environment. We will promote the development and implementation of circular formulas, ingredients, packaging, and business models using innovative technologies, process innovation and through collaboration with stakeholders.

- Compliance with Laws and Regulations

We comply with the relevant environmental laws and regulations of each country and region in which we operate, in line with international standards and our own standards.

- Governance and Environmental Management

We set environmental policies, targets, and objectives, establish management systems and work to continuously improve our environmental performance. These are promoted and supervised on a regular basis by the Sustainability Committee consisting of executive officers from sustainability-related fields of the Global Headquarters. Particularly important matters are proposed or reported to the Board of Directors. Under this framework, we strive to appropriately manage chemical substances and prevent air, water, and soil pollution.

- Communication and Engagement

We endeavor to increase the trust we have earned from society by sharing the contents of this policy with various internal and external stakeholders including consumers and investors, disclosing transparent and reliable information, and promoting proactive communication. We will also promote employee awareness and training to increase internal awareness.

## Our Thoughts Regarding "Biodiversity"

Our company name 'Shiseido' comes from a phrase in the classical Chinese text, I Ching: "Praise the virtues of the Earth, which nurtures new life and brings forth significant values." While Shiseido's business activities rely on nature's rich biodiversity, we also recognize that natural resources are limited. In recent years, many scientists and non-government organizations have warned of rapid biodiversity loss. As a result, from both a species conservation and sustainable business perspective, companies are being called upon to engage in biodiversity conservation activities. They are also encouraged to ensure transparent information disclosure regarding the impact of their activities on the natural environment.

At Shiseido, we use the Taskforce on Nature-related Financial Disclosures' (TNFD) framework to assess and analyze risks/opportunities around our dependency and impact on nature. The results of these analyses have shown that palm oil-derived raw materials and paper have a significant impact on biodiversity on land. Therefore, we support zero deforestation for palm oil and paper and strive to minimize the negative impact on biodiversity by complying with the laws and regulations of each country and international treaties and agreements\*1 and switching to certified and recycled raw materials. We have organized challenges in biodiversity according to the hierarchy approach\*2 and have set goals to switch to 100% sustainable paper by 2023 and 100% sustainable palm oil by 2026. To achieve these goals, we believe it is important not only to conduct our own operations but to also collaborate with our suppliers and other partners, etc. and promote sustainable procurement together with stakeholders.

We understand that recovering and regenerating biodiversity toward no net loss/net positive is essential, and we will continue to contribute to a future in which business and a diverse natural environment exist in harmony.

\*1 : Washington Convention, Convention on Biological Diversity, OECD Guidelines for Multinational Enterprises, ILO Fundamental Conventions, The Ten Principles of the UN Global Compact, United Nations Declaration on the Rights of Indigenous Peoples, etc.

\*2 : An approach to prioritize avoidance and reduction as steps to reduce environmental impact and to use offsets to offset the environmental impact that remains after these steps are taken.

## Our Thoughts Regarding "Freshwater Resources"

Water supports various aspect of our products, including the development of water-containing products such as lotions; the growth of plants as raw materials; temperature control; equipment cleaning; consumption; and waste disposal.

In light of the unique characteristics of water resources, such as its circularity and uneven distribution, we want to respect and promote a healthy water cycle, culture, and the human right to water and sanitation. We aim for a sustainable consumption for not only regulatory compliance but to also be in alignment with initiatives such as SDGs. We aim to reduce water consumption by 40%\*1 by 2026 (versus 2014). In addition to promoting technological innovations, we promote water saving and recycling activities — especially in areas with high water stress and areas where rainfall is expected to decrease due to climate change. Furthermore, in collaboration with local stakeholders, we promote "water stewardship"\*2 as a common property. To make effective use of water resources we focus on circular usage, where water used is purified and reused or recycled.

\*1 : intensity per sales

\*2 : Using water in a way that is socially equitable, environmentally sustainable, and economically beneficial

## Promoting Environmental Management

The Shiseido Group's production sites introduced the ISO 14001 environmental management system for the first time in 1997. Our twelve production sites worldwide have obtained ISO 14001 certification. We are reducing our environmental impact and improving our management system by placing an Environmental Management Representative in each production site responsible for environmental initiatives including, setting policies and targets, promoting activities, confirming compliance with regulations, properly managing chemical substances, educating employees, and conducting the PDCA cycle. The progress of these activities is validated through third-party audits.

## Status of ISO14001 Certification

Production sites		Date of certification
Shiseido Company, Limited	Shiseido Kuki Factory Certificate of Registration [PDF : 70.4KB]	October 27, 1997
	Shiseido Kakegawa Factory Certificate of Registration [PDF : 81.8KB]	October 5, 1998
	Shiseido Osaka Factory Certificate of Registration [PDF : 139KB]	March 24, 1999
	Shiseido Nasu Factory Certificate of Registration [PDF : 74.3KB]	June 13, 2022
	Osaka—Ibaraki Factory Certificate of Registration [PDF : 139KB]	March 24, 2023
	Fukuoka Kurume Factory	In progress
Taiwan Shiseido Co., Ltd. Hsinchu Factory	Certificate of Registration [PDF : 2.63MB]	August 31, 1999
Shiseido America, Inc.	East Windsor Factory Certificate of Registration [PDF : 274KB]	March 31, 2000
Shiseido International France S.A.S.	Unité de Gien Unité du Val de Loire Certificate of Registration [PDF : 387KB]	August 8, 2000 February 8, 2002
Shiseido Liyuan Cosmetics Co., Ltd.	Certificate of Registration [PDF : 0.98MB]	August 17, 2000
Shiseido Cosmetics Manufacturing Co., Ltd.	Certificate of Registration [PDF : 674KB]	November 9, 2004
Shiseido Vietnam Inc.	Certificate of Registration [PDF : 86KB]	December 15, 2011

\*Fukuoka Kurume factory started its operation in June 2022. With the exception of the newly operational Fukuoka Kurume factory, the acquisition rate of ISO 14001 certification for our domestic and overseas factories is 100%.

## Cooperating Companies

Production sites		Date of certification
Shiseido Honeycake Industries Co., Ltd.*	Certificate of Registration [PDF : 197KB]	September 29, 1999

\*Although Shiseido Honeycake Industries Co., Ltd. is not a consolidated subsidiary it obtained certification in 1999 in line with Shiseido policies.



# Collaboration with Stakeholders

## Agreements with external organizations

2017	In Japan, Shiseido updated the content of our declaration on environmental protection, the Promise of eco-first and certified as an "Eco-First Company" by the Minister of the Environment. (Re-certified in 2012 and 2017.)
2009	In Japan, Shiseido became the first company in the cosmetics industry to receive the "Eco-First Company" certification from the Ministry of the Environment thanks to our declaration on environmental protection, the "Promise of eco-first."
2008	We agreed with the United Nations Global Compact's Climate Change Initiative on Caring for the Climate.



## Environmental study with local residents

### Environmental study with children

The Shiseido Kakegawa Factory (Kakegawa City, Shizuoka Prefecture) holds environmental learning sessions for local elementary school students every year. In 2019, 20 children from Kakegawa participated in the sessions. We introduced eco-friendly packages and waste reduction initiatives and learned about the problem of ocean plastics. Everyone checked small pieces of plastic collected from the beach by employees and made kaleidoscopes. The Shiseido Kakegawa Factory continues to provide environmental education in cooperation with the community.



## Environmental study in the roof garden at the Ginza Office

The Ginza Office (Chuo-ku, Tokyo) has a rooftop "Shisei Garden" created with biodiversity conservation in mind. We hold environmental learning sessions for local residents in the garden. In October 2016, we invited 29 children to take part in a workshop in which they observed the plants in the roof garden and squeezed oil from Camellia, a cosmetics ingredient.



# Environmental Accounting

In Japan, we use the Environmental Accounting Guidelines 2005 edition issued by the Ministry of the Environment to quantify the environmental conservation costs and outcomes.

Target period: From January 1 to December 31, 2022

Scope: Domestic sites (production sites, research centers, departments in the Headquarters), overseas sites (production sites)

## 1. Environmental Conservation Costs (Unit: 1 million yen)

Category		Main Initiatives	Investment	Expenses
(1) Costs breakdown by operation			764	593
Breakdown	(1)-1 Pollution prevention costs	Water contamination, atmospheric pollution, etc.	60	228
	(1)-2 Global environmental conservation costs	Promotion of energy conservation, measures to protect the ozone layer, etc.	653	18
	(1)-3 Resources recycling costs	Waste processing, recycling, Wastewater re-use, reducing materials, etc.	51	332
	(1)-4 Chemical substance reduction cost		0	15
(2) Upstream/downstream costs		Costs associated with Recycling of Containers and Packaging Recycling Law, green procurement, product recycling, etc.	0	129
(3) Administrative costs		Personnel expenses (excluding R&D), environmental management costs	0	408
(4) Research and Development costs		R&D for environmentally friendly products, etc. (including personnel expenses)	0	0
(5) Social contribution costs		Support of environmental groups, disclosure of environmental information, environmental advertising, etc.	0	33
(6) Environmental remediation costs		Environmental remediation costs, etc.	0	0
(7) Other costs			0	0
Total			764	1,163

2. Economic Benefit Associated with Environmental Conservation Activities (Unit: 1 million yen)

Outcomes		Economic Benefit
Earnings	Revenue from the recycling of waste generated in main business activities and the recycling of used products, etc.	52
Cost savings	From energy conservation	76
	Waste-related	3
	From resource conservation	24
	Other	0
Total		155