





Environmental Management

Managing climate- and nature-related impacts, risks and opportunities

GRI : 2-24, 27, 3-3, 101-1, 4, 201-2

	TCFD (Climate)	TNFD (Nature)	Relevant webpages
Policy	<p>The Fuji Oil Group established the Basic Policy of Environmental Integrity in 2015, and accelerated our efforts in 2018 with the establishment of the Environmental Vision 2030, in which we commit to achieving reduction targets for CO₂ emissions, water use, and waste across the Group. Additionally, we formulated the Fuji Oil Group Policy on Biodiversity in March 2023 to announce our basic approach and code of conduct for conserving and restoring biodiversity.</p>		<ul style="list-style-type: none">  Fuji Oil Group Basic Policy of Safety, Quality and Environment (PDF, 331KB)  Fuji Oil Group Policy on Biodiversity (PDF, 195KB)
Governance	<p>The Group's Sustainability Committee^{*1} is an advisory body to the Board of Directors of Fuji Oil Holdings Inc. It deliberates on and monitors the Group's response to environmental and social issues, including climate- and nature-related issues, and recommends and reports the results to the Board. Chaired by the President and CEO, the committee is composed of chief officers with voting rights, other executive officers, heads of each business division, outside directors, and the ESG advisor, and meets at least twice a year. The ESG Division Officer and the Chief Strategy Officer (CSO) oversee initiatives across divisions for material ESG issues.^{*2} The ESG Division Officer is responsible for Climate Change, Water Resources, Circular Economy, and Biodiversity, while the CSO is responsible for Sustainable Procurement. Under this committee, the Subcommittee on Group Significant Risks discusses and manages Group-wide risks and opportunities related to climate change and nature. Their results are reported and approved in the Management Committee Meeting and the Board of Directors meeting at least once a year.</p> <p>Moreover, in order to realize a sustainable future for food, we follow the relevant policies in responding to Indigenous Peoples, social minorities, local communities, and other groups who may be affected by our business operations, and strive to build a foundation for ongoing dialogue and collaboration with our stakeholders.</p> <p>^{*1} Governance, Strategy, Metrics and Targets, Risk Management > Governance https://www.fujioilholdings.com/en/sustainability/sustainability_management/</p> <p>^{*2} Governance, Strategy, Metrics and Targets, Risk Management > Strategy, metrics and targets https://www.fujioilholdings.com/en/sustainability/sustainability_management/</p>		<ul style="list-style-type: none">  Fuji Oil Group Human Rights Policy (PDF, 388KB)  Fuji Oil Group Policy on Biodiversity (PDF, 195KB)  Fuji Oil Group Supplier Code of Conduct (PDF, 2.3MB)  Responsible Palm Oil Sourcing Policy (PDF, 1.66MB)  Responsible Cocoa Beans Sourcing Policy (PDF, 79KB)  Responsible Soybeans and Soy Products Sourcing Policy (PDF, 922KB)  Responsible Shea Kernel Sourcing Policy (PDF, 945KB)
Strategy GRI : 2-24	<p>In recent years, escalating climate change and biodiversity loss have led to a decline in the ecosystem services that society relies on and which underpin all economies. The global deterioration of the natural environment is seriously impacting corporate business operations and people's lives. Forest and soil degradation, biodiversity loss, higher water stress, and more frequent extreme weather events are interfering with the stable supply of the agricultural products we use as key raw materials to make our products, and are becoming a threat to our business operations.</p> <p>Our Group's businesses are benefitting from nature and ecosystem services while also affecting them through the global value chain, which includes raw material production, procurement, transportation, and product processing. We believe that changes in climate and nature are critical to our businesses in terms of both risks and opportunities. For these reasons, we strive to face these risks appropriately by working to reduce CO₂ emissions, conserve natural ecosystems, and use natural capital sustainably. At the same time, we have incorporated the concept of nature-positive future^{*1} in developing our technologies and products with a positive impact on the natural environment to open up better business opportunities in the future.</p> <p>With the goal of reducing our negative impacts and creating positive impacts, we will accelerate our sustainability initiatives at each Group company based on material ESG issues^{*2} and co-create the solutions with our stakeholders.</p>		

	TCFD (Climate)	TNFD (Nature)	Relevant webpages
	<p>*1 Halt and reverse biodiversity loss in order to put nature on a path to recovery</p> <p>*2 Climate change, water resources, circular economy, biodiversity, sustainable procurement, and creation of sustainable food resources</p>		
	<p>We performed the TCFD-recommended climate change scenario analysis to select climate change risks and opportunities, and qualitatively assessed their financial impact for a major Group company in Japan in FY2019, and for eight major Group companies outside Japan in FY2020. In FY2022, we conducted a quantitative assessment of the financial impacts of climate-related risks after conducting the scenario analysis based on 1.5°C/4°C climate scenarios instead of 2°C/4°C, with the goal of achieving more aggressive climate intervention.</p>	<p>In FY2022, we set out to understand how all of our activities are related to biodiversity throughout the value chain, and identified biodiversity issues*¹ relating to our Group's business as a whole. We then identified and compiled a list of potential nature-related risks and opportunities. In FY2023, based on the LEAP approach*² recommended by the Taskforce on Nature-related Financial Disclosures (TNFD), we used Geographic Information Systems (GIS) to analyze our dependencies and impacts on nature and ecosystem services using various indicators, and assessed our nature-related risks*³ and opportunities*⁴ in countries where our Group sources our key raw materials, palm oil and cocoa. Palm oil and cocoa were selected for analysis based on the following points:</p> <ul style="list-style-type: none"> • They are closely related to the biodiversity issues we identified in FY2022 • They are the main raw materials for the Group's main businesses, vegetable oils and fats and industrial chocolates, and have relatively high traceability • Oil palm and cocoa are included in the High Impact Commodity List of the Science Based Targets Network (SBTN) <p>*1 Habitat loss due to conversion of forest to agricultural land, impact on ecosystems in areas surrounding farmland, climate change, and water resources</p> <p>*2 An integrated approach developed by the TNFD for assessing nature-related issues including interfaces with nature, nature-related dependencies, impacts, risks and opportunities</p> <p>*3 Potential threats posed to an organization that arise from its and wider society's dependencies and impacts on nature</p> <p>*4 Activities that create positive outcomes for organizations and nature through positive impacts or mitigation of negative impacts on nature</p>	<p>→ Biodiversity Conservation and Restoration</p>
<p>Risk management GRI : 2-27</p>	<p>The Group has positioned the Management Committee Meeting as its Group-wide risk management body. The committee uses information sources that reflect the Group — including risks identified by executive teams, our material ESG issues, and operational risks — to comprehensively determine the level of impact on Group business, likelihood of occurrence, and time of onset, and to select the risks that are significant to the entire Group. We have developed a Group-wide risk management system aimed at managing these risks through a process of developing and implementing responsive measures, monitoring progress, evaluating results, and making improvements.</p> <p>Risks related to climate change, biodiversity and the natural environment are also identified as significant Group-wide risks. These risks are managed through the Group-wide risk management system by assessing their degree of significance, assigning priorities to</p>		<p>→ Risk Management System > Governance, Strategy</p> <p>→ Sustainable Procurement Management > Risk management</p>

	TCFD (Climate)	TNFD (Nature)	Relevant webpages
	initiatives, and planning and implementing responsive measures, which are reported to the Board of Directors at least once a year.		
	Assessment of risks and opportunities		
	See the section below "Assessment of climate change-related risks and opportunities and their financial impact on the Fuji Oil Group" for details.	Using the assessment of dependencies and impacts on nature and ecosystem services, we comprehensively identified the nature-related risks and opportunities that our Group needs to address. See the section below "Nature-related risks and opportunities across the Fuji Oil Group's value chain."	
	Environmental audits		
	<p>The Fuji Oil Group strives to promote, improve and enhance our environmental conservation efforts across the Group by referring and conforming to international standards such as ISO 14001: Environmental management systems. Every year ISO 14001-certified operating sites undergo verification by external audits and conduct their own internal audits on safety, quality, and the environment. Operating sites outside Japan undergo safety, quality, and environmental audits by Fuji Oil Holdings Inc. By verifying, evaluating, and encouraging improvements at these companies, we strive to raise environmental performance across the Group.</p> <p>Fuji Oil Co., Ltd. undergoes both external and internal audits of its environmental management. External audits are conducted annually in accordance with ISO 14001 (surveillance audit for years one and two, and a recertification audit for year three). Internal audits are conducted annually and include safety, quality, and environmental checks at ISO 14001-certified operating sites to improve production management at Group companies in Japan. No environmental nonconformities were found in the FY2023 external audits and internal audits.</p> <p>Our internal audits do not simply check for compliance or conformity with all relevant environmental laws, regulations and internal rules. They also serve as opportunities for auditors to explain important environmental matters for employees' further understanding. Through internal audits, we examine and evaluate each Group company's environmental efforts and give advice on areas needing improvement, thereby promoting and improving the Group's environmental conservation activities.</p> <p>Outside Japan, the Production Productivity Management Group of Fuji Oil Holdings Inc., a strategy development unit with specialized knowledge in the fields of quality and safety, and Sustainability Development Group conduct safety, quality, and environmental audits to examine and evaluate each Group company's environmental efforts and give advice on areas needing improvement. This helps to raise management standards for the entire Group. In FY2023, we conducted environmental audits in seven out of our Group's 20 production sites outside Japan.</p>		
	Acquisition of management certifications		
	<p>Group companies' certification for ISO 14001/ ISO 50001</p> <p>https://www.fujioilholdings.com/en/sustainability/authen/iso14001/</p>		
	Training		
	<p>The Sustainability Development Group and Production Productivity Management Group at Fuji Oil Holdings Inc. jointly provide regular training on safety, quality, and the environment among management and staff in relevant departments of Fuji Oil Group companies outside Japan. In FY2023, the team held awareness-raising activities at seven production sites of Group companies outside Japan. These activities are scheduled such that all sites are visited in a three to four-year cycle. In Japan, we publish a monthly environment and energy newsletter on our internal messaging board and display monitors in our cafeteria to raise employee awareness.</p>		
	Compliance with environmental laws and regulations		





	TCFD (Climate)	TNFD (Nature)	Relevant webpages
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In FY2023, there were no serious environmental legal violations in the Fuji Oil Group.

Metrics and targets





Environmental Vision 2030


	2030 targets*1	FY2023 results*1	Progress
CO ₂ emissions	Scopes 1*2 & 2*3: 40% reduction in total CO ₂ emissions (All Group companies)	29% reduction	73%
	Scope 3*4 (Category 1*5): 18% reduction in total CO ₂ emissions (All Group companies*6)	27% increase	Not achieved
Water use	20% reduction in water intensity*7 (All Group companies)	33% reduction	166%
Waste	10% reduction in waste intensity*8 (All Group companies*9)	15% reduction	153%
Resource recycling	Maintain a recycling rate of at least 99.8% (All Group companies in Japan)	99.85%	Achieved

-  CO₂ Emissions Reduction
-  Water Use Reduction
-  Waste Reduction
-  Sustainable Procurement of Cocoa
-  Sustainable Procurement of Shea Kernels

*1 Base year: FY2016
 *2 Scope 1: Direct emissions of greenhouse gases from our own operations
 *3 Scope 2: Indirect emissions of greenhouse gases from the use of electricity, heat and steam supplied by third parties
 *4 Scope 3: Emissions from the activities of non-Group companies in our value chain (Categories 1 to 15)
 Recalculated emissions for FY2016, FY2022, and FY2023 using emissions factors of IDEA ver. 3.3 and LULUC (land use, and land-use change) Regulations.
 *5 Category 1: Purchased goods and services
 *6 Excluding Industrial Food Services (Australia) and Fuji Brandenburg GmbH (Germany)
 *7 Water use per unit of production
 *8 Amount of waste per unit of production
 *9 Excluding waste volume generated at Industrial Food Services (Australia) and Fuji Brandenburg GmbH (Germany)

Nature-related targets in countries producing our major raw materials

	2030 targets	FY2023 results (relevant webpages)
No Deforestation, No Peatland Development and No Exploitation (NDPE)	Traceability to plantation (TTP): 100%	 Sustainable Procurement of Palm Oil
Reforestation	One million trees planted in cocoa growing regions	 Sustainable Procurement of Cocoa
No deforestation, no exploitation	Traceability achieved to the community level, or 100% procurement of RTRS*-certified products or products certified to equivalent standards	 Sustainable Procurement of Soybeans
Forest conservation	6,000 trees planted/year in shea kernel growing regions	 Sustainable Procurement of Shea Kernels

* Round Table on Responsible Soy Association
 TNFD core global disclosure metrics
 <https://tnfd.global/publication/tnfd-v0-4-annex-4-3/>

	TCFD (Climate)	TNFD (Nature)	Relevant webpages
	Analysis		
	CO ₂ emissions (Scope 1 & 2)		
	<p>Scope 1 and 2 emissions in FY2023 were 29% lower than the baseline, an improvement of three points from the previous fiscal year's 26% reduction. This represents a 73% achievement rate relative to our 40% reduction target by FY2030. In Japan, our operating sites have been switching to carbon-free electricity, with 50% of our electricity purchases now carbon-free. Group companies outside Japan are also continuing to reduce energy use through activities such as power saving and facilities maintenance.</p>		
	CO ₂ emissions (Scope 3 Category 1)		
	<p>At the result of recalculating emissions for FY2016, FY2022, and FY2023 using emissions factors of IDEA ver. 3.3 and LULUC (land use, and land-use change) Regulations, scope 3 emissions in FY2022 were changed from a 12% increase to a 30% increase, and scope 3 emissions in FY2023 were 27% higher than the baseline, an improvement of three points from the previous fiscal year. This represents a 0% achievement rate relative to our 18% reduction target by FY2030. We conducted engagement with suppliers in and outside Japan with the aim of reducing scope 3 emissions.</p>		
	Water use (intensity)		
	<p>Water use intensity in FY2023 was 33% lower than the baseline, an improvement of six points from the previous fiscal year's 27% reduction. This represents a 166% achievement rate relative to our 20% reduction target by FY2030. We reviewed our water use optimization at production lines in Japan. We also improved water recycling systems and revised the cleaning frequency of production facilities at Group companies outside Japan. All these actions contributed to the reduction in our water usage.</p>		
	Waste (intensity)		
	<p>Waste intensity in FY2023 was 15% lower than the baseline, an improvement of 10 points downward from the previous fiscal year's 5% reduction. This represents a 153% achievement rate relative to our 10% reduction target. At Fuji Oil Co., Ltd., improvement in dewatering rate of scum sludge using the dewatering equipment introduced in FY2020 has contributed to a reduction in waste. Spent bleaching earth (SBE) at Fuji Oil Europe (Belgium) and waste oil at Fuji Oil (Singapore) Pte. Ltd. have been converted into valuable raw materials for biofuel, thereby reducing our volume of waste.</p>		
	Resource recycling		
	<p>The resource recycling rate in FY2023 was 99.85%, an increase of 0.16 points from the previous fiscal year's 99.69%. This means that we achieved our target of 99.8% or higher. We will continue to promote recycling by sorting waste more thoroughly.</p>		
	Reforestation and forest protection & conservation		
	<p>Visit the following links for details on ensuring traceability of our raw materials and tree planting in countries producing these raw materials.</p>		<ul style="list-style-type: none"> → Sustainable Procurement of Palm Oil → Sustainable Procurement of Cocoa → Sustainable Procurement of Soybeans → Sustainable Procurement of Shea Kernels

	TCFD (Climate)	TNFD (Nature)	Relevant webpages
Metrics and targets	External recognition		
	<ul style="list-style-type: none"> • “A-” rating from CDP in 2023 for forests, climate change, and water security • Selected among the top 350 Asia-Pacific Climate Leaders 2024 in a joint survey by the Financial Times and Statista 		→ External Recognition

Assessment of climate change-related risks and opportunities and their financial impact on the Fuji Oil Group

GRI : 201-2

Level of impact

The level of impact categories — small, medium, and large — refer to the magnitude of financial impact that is projected to occur around the year 2050 based on estimates that assume a certain set of conditions, including but not limited to the Fuji Oil Group’s current business portfolio, financial condition, and business performance. This financial impact assessment is based on these impact categories and therefore is subject to change.

Large: Potential profit impact of 10 billion yen or more

Medium: Potential profit impact of 2 billion yen to less than 10 billion yen

Small: Potential profit impact of less than 2 billion yen

Risks

Item	Details	Financial impact	Assessment of financial impact around 2050					
			1.5°C scenario			4°C scenario		
			Details			Details		
Policy & regulations	Risk of increased cost of complying with environmental regulations	Increased cost due to adoption of carbon taxes	Environmental regulations around the world are tightened to address climate change, and costs increase due to the following factors.			Compared to the 1.5°C scenario, environmental regulations for addressing climate change are not tightened as much and carbon taxes are smaller. However, carbon taxes may be levied in countries where Group companies are located, resulting in increased costs.		
			<ul style="list-style-type: none"> Introduction of carbon taxes, carbon border adjustment mechanisms (CBAM), emissions trading systems (ETS) and other schemes in countries where Group companies are located. Capital investment and depreciation of existing assets for reducing greenhouse gas emissions, including replacing gasoline, diesel, and other fossil fuels used in logistics vehicles and fossil fuels used for electricity and for boiler operation in certain production processes with renewable energy sources. 	Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts
			Within 5 years	Longer than 10 years	5.8 billion yen ¹⁾	Within 10 years	Longer than 10 years	0.9 billion yen ²⁾
			Response approach ● Comply with CO₂ emissions reduction targets by promoting Environmental Vision 2030 • For CO ₂ emissions reduction, we have set a 40% reduction of Scopes 1 st and 2 nd emissions and an 18% reduction of Scope 3 rd (Category 1 st) emissions as FY2030 targets (base year: FY2016). • To achieve our Environmental Vision 2030, we will actively work on energy conservation initiatives, adopt new facilities that use less energy, and use renewable energy at production sites. We will also improve the accuracy of our Scope 3 emissions data, devise ways to reduce the large volume of Category 1 emissions, and conduct briefings and information campaigns within the Group to achieve our SBTi-approved targets, in order to promote further reduction of CO ₂ emissions throughout the Group. ● Introduce internal carbon pricing²⁾ to all Group companies • We carried out the pilot introduction in FY2022 at Fuji Oil Co., Ltd. Going forward, we plan to introduce internal carbon pricing to all Group companies for use in developing investment plans, as an incentive for energy-saving initiatives, and as guidelines for investment decision-making.					
Transition risks	Reputation	Increased cost associated with supplier engagement and lost sales due to suspended transactions from major customers	Costs will increase and sales will decline due to the following risks associated with deforestation and loss of parkland/peatland in the supply chain of the Group's major raw materials (e.g., palm oil, cocoa, soybeans, shea kernels).			Compared to the 1.5°C scenario, increased cost associated with strengthening supplier engagement is limited. While the Group makes advances as necessary in purchasing raw materials from suppliers that are implementing appropriate environmental conservation based on the Group's sustainable sourcing policies, society makes little progress in sustainability awareness and has a high tolerance of climate change, reducing the Group's need to strengthen supplier engagement on its own.		
			<ul style="list-style-type: none"> Increased cost associated with strengthening engagement with suppliers to ensure that deforestation and parkland loss, which increase atmospheric CO₂ concentrations and exacerbate climate change, do not occur. As more and more people place greater priority on environmental problems, stricter environmental regulations are introduced and public awareness of the need for action to conserve the environment grows. The Group faces criticism and damage to its reputation when deforestation and parkland loss occur in its supply chain. Moreover, if such actions by suppliers are prohibited in a contract between the Group and its customer, the Group may be liable for damages and its business dealings may be terminated due to a breach of contract with the customer. Under the EUDR, violations on products traded within the EU are subject to penalties such as fines and confiscation of income and products. Moreover, if a contract with a customer requires compliance with the EUDR, the Group may be liable for damages, including the penalties imposed on the customer, and its business dealings may be terminated due to a breach of contract. 	Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts
			Within 5 years	Longer than 10 years	Medium	At least 11 years from now	Longer than 10 years	Small
			Response approach ● Strengthen efforts to prevent or mitigate environmental risks in the supply chain based on the Group's sourcing policies • For palm oil, we will improve traceability with the aim of achieving 100% traceability to palm oil mills and 100% traceability to plantations, as well as promote efforts that improve the supply chain with the aim of solving environmental problems at palm oil production sites (plantations), based on our medium- to long-term goals for sustainable procurement of palm oil. Our aim is to achieve No Deforestation, No Peatland Development, and No Exploitation (NDPE) as stated in the Group's Responsible Palm Oil Sourcing Policy. • For cocoa, we will plant one million trees on cocoa-growing regions by 2030 to promote efforts that reduce the negative impact on forests, based on our medium- to long-term goals for sustainable procurement of cocoa. Our aim is to achieve sustainable cocoa procurement as stated in the Group's Responsible Cocoa Beans Sourcing Policy. • For soybeans, we are working to achieve traceability to the community level, No Deforestation and No Exploitation, and 100% procurement of RTRS (Round Table on Responsible Soy Association)-certified products or products certified to equivalent standards. • For shea kernels, we are working to plant 6,000 trees per year and achieve 75% traceability to the regional level, with the goals of conserving forests and supporting women's empowerment. ● Fully disseminate the Supplier Code of Conduct • We developed a Supplier Code of Conduct in 2021 to serve as a high-level policy to existing guidelines and policies for communicating the Group's overall approach to procurement to all suppliers. The code urges suppliers to comply with a list of basic principles (e.g., environmental conservation) and to devise preventive and remedial measures for identifying code violations and making improvements.					
Physical risks	Acute risks	Losses incurred by Group companies from storms and floods	More frequent and intense storms and floods cause damage and suspend operations at Group companies, such as Fuji Oil Co., Ltd. in Japan, which is prone to typhoon damage, and Fuji Vegetable Oil, with plants in Savannah, Georgia, U.S., which are prone to hurricane damage.			Storms and floods of even greater frequency and intensity than in the 1.5°C scenario cause greater devastation and suspend operations at Group companies, such as Fuji Oil Co., Ltd. in Japan, which is prone to typhoon damage, and Fuji Vegetable Oil, with plants in Savannah, Georgia, U.S., which are prone to hurricane damage.		
			Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts	Impact level
			At least 11 years from now	Longer than 10 years	Medium	Within 10 years	Longer than 10 years	Large
			Response approach ● Formulate a BCP incorporating a framework that leverages complementary strengths throughout the Group, prepare a response manual in the event of a crisis, and encourage risk transfer through the use of insurance					
Physical risks	Chronic risks	Sales decline due to decrease in procurable volume of major raw materials	The following factors cause a decline in yields and supply shortages of major raw materials procured by the Group (e.g., palm oil, cocoa, soybeans, shea kernels), making it impossible to procure some of the raw materials needed, disrupting the manufacture of Group products, and causing a decline in sales.			The following factors cause a major decline in yields and major supply shortages of major raw materials procured by the Group (e.g., palm oil, cocoa, soybeans, shea kernels), making it impossible to procure most of the raw materials needed, significantly disrupting the manufacture of Group products, and causing a dramatic decline in sales.		
			<ul style="list-style-type: none"> Impacts from extreme weather events (e.g., heat waves, droughts, increased annual precipitation, rainstorms) and natural disasters Increased demand caused by global population growth With more people in society placing greater priority on environmental problems, greater restrictions on forest development and new agricultural methods such as regenerative agriculture are introduced, limiting the amount of farmland to a level that cannot meet the needs of a larger global population. 	Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts
			Within 10 years	Longer than 10 years	Small	At least 11 years from now	Longer than 10 years	Medium
			Response approach ● Improve sustainability of raw material procurement and strengthen supply sources • Carry out our Group programs, including supplier engagement, agricultural support for farmers to improve farm yields and increase productivity, and farming guidance • Diversify our raw materials • Encourage boosting productivity through breeding research, in collaboration with academic institutions, governments, and industries					

*1 Based on carbon tax data for each country in 2030 taken from the Global Energy and Climate Model Documentation 2023 by the International Energy Agency (IEA) (developed countries: USD 140/tonne, emerging countries: USD 90/tonne)

*2 Based on carbon tax data for each country in 2030 taken from the IEA's World Energy Outlook 2020 (OECD member countries: USD 34/tonne, other countries: not adopted)

*3 Scope 1: Direct emissions of greenhouse gases from our own operations

*4 Scope 2: Indirect emissions of greenhouse gases from the use of electricity, heat and steam supplied by third parties

*5 Scope 3: Emissions from the activities of non-Group companies in our value chain (Categories 1 to 15)

*6 Category 1: Purchased goods and services

*7 An internal scheme for promoting low-carbon investment and initiatives by placing a price on carbon based on estimates conducted within the organization.

Opportunities

Item	Details	Financial impact	Assessment of financial impact around 2050					
			1.5°C scenario			4°C scenario		
			Details			Details		
Market	Opportunity of expanded PBF ^{*1} market	Increased sales of Group products in the plant-based protein (e.g., meat and dairy alternatives) market	<p>The Group seizes the following opportunities by leveraging its differentiated and integrated technologies and by co-creating solutions with customers to enhance product competitiveness through the addition of better flavor, richness of taste, and aroma to plant-based ingredients, resulting in dramatically increased sales for the Group.</p> <ul style="list-style-type: none"> As more and more people place greater priority on environmental problems, consumption of plant-based protein (e.g., meat and dairy alternatives) thrives and the global market for such alternatives grows dramatically, mainly among Millennials, Generation Z, and vegetarians. These groups hold the view that raising livestock requires large amounts of feed, water, and land, causing water shortages and deforestation, and exacerbating climate change. Therefore, they attach greater importance to sustainability and express their values through their consumption behavior. While the demand for meat and dairy increases mainly in low- and middle-income countries, there is a global supply shortage of meat and dairy. This is due to global population growth, economic development and dietary changes as well as adverse impacts on livestock production caused by extreme weather events, natural disasters, and the rise in the average global temperature due to climate change. Demand for plant-based protein (e.g., meat and dairy alternatives) increases to make up for this shortage. Demand for plant-based protein expands as Japan, the US, and Europe transition away from their dependency on animal protein toward plant-based protein, and due to a shortage of protein in regions such as Sub-Saharan Africa and South Asia. 					
			Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts	Impact level
			Within 5 years	Longer than 10 years	Medium	At least 11 years from now	Longer than 10 years	Small
Resilience	Opportunity relating to new health issues caused by climate change	Increased sales due to growing consumer needs for immunity-boosting, highly nutritious, high-protein, and low-sugar foods	<p>The Group seizes the following opportunities by leveraging new and existing technologies from the Group's R&D in the polysaccharide business, stabilized DHA/EPA business, and other functional high-value-added products businesses, as well as the chocolate and plant-based protein businesses, leading to increased sales for the Group.</p> <ul style="list-style-type: none"> Global climate change has shifted the temperature region of infectious diseases such as dengue fever and malaria, causing outbreaks in countries and regions where they have never occurred before. Also, there are new health issues such as higher cases of heat stroke. Health awareness grows over time as a result. Adding to the increase in these infectious disease outbreaks and cases of heat stroke is an anticipated sharp rise in lifestyle diseases such as obesity, diabetes and dementia in regions including South Asia, Europe, Africa, North America, and Central and South America. This leads to greater consumer needs for immunity-boosting, highly nutritious, high-protein, and low-sugar foods that help prevent such health issues, driving increased demand and market expansion for lactic acid bacteria, DHA/EPA, polyphenols, proteins, peptides, and low-sugar chocolates. With more people in society placing greater priority on environmental problems, the concept of One Health^{*2} gains traction across all generations, increasing demand for products focused on human and environmental health. As a result, the Group sees rising demand for its PBF products, which contribute to environmental conservation and improved health through their potential benefits in preventing infectious diseases, heat stroke, and lifestyle diseases such as obesity, diabetes and dementia. 					
			Time of onset	Duration of impacts	Impact level	Time of onset	Duration of impacts	Impact level
			Within 10 years	Longer than 10 years	Medium	At least 11 years from now	Longer than 10 years	Medium
<p>Response approach</p> <ul style="list-style-type: none"> ● Conserve the environment through sustainable procurement ● Offer plant-based ingredients, one of our Group's strengths, to address social issues and foster the next-generation of businesses in a decarbonizing society ● Build a global research network and promote open innovation ● Recognizing changing market dynamics and needs — such as rising health consciousness and ethical awareness due to climate change impacts — as an opportunity, conserve the environment through sustainable procurement and offer plant-based ingredients, one of our Group's strengths, to address social issues and foster the next-generation of businesses in a decarbonizing society <p>• By establishing the systems needed to develop products and promote business strategies that accurately respond to market trends, we will focus on new challenges such as revising our business portfolio for high value-added products and optimizing our production across the Group in anticipation of these future changes in the business environment.</p> <p>• By building and actively participating in an industry-academia consortium with research institutions worldwide and promoting open innovation using Fuji Oil Global Innovation Center Europe (GICE) as a hub, we will acquire new technologies and develop global human resources that will accelerate the creation of social value in a decarbonized society.</p>								

*1 PBF: Plant-based food

*2 One Health: A concept recognizing the fact that safeguarding the health of ecosystems and animals serves the health of humans as well, inviting everyone to think of and work to protect the health of people, animals and ecosystems as one living system.

Nature-related risks and opportunities across the Fuji Oil Group's value chain

GRI : 304-2

Type	No.	Risk/ Opportunity	Potential impacts	Risk reduction	Opportunity creation	Strategies (○: Risk reduction, ⊙: Opportunity creation)	
Transition risks	Policy & Regulations	1	Tougher enforcement of regulations, new regulations	<ul style="list-style-type: none"> Increased cost of complying with regulations¹¹ for the Group Fines, suspension of operations and sales, loss of credibility, reparations and others due to legal violations 	●		<ul style="list-style-type: none"> ○ Keep informed of the various regulations and share with everyone concerned ○ Cooperate with external stakeholders on laws and regulations (e.g., EUDR)
	Market	2	Soaring raw material prices, unstable raw material supply	<ul style="list-style-type: none"> Increased cost of complying with regulations¹² at major raw material suppliers Increased demand for certified raw materials (e.g., RSPO, RTRS) due to tougher regulations 	●	●	<ul style="list-style-type: none"> ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³ ⊙ Increase suppliers' understanding of certification systems and strengthen supply system^{4,9}
		3	Exclusion from business dealings	<ul style="list-style-type: none"> Decline in public credibility if evidence of deforestation, peatland development or human rights violations emerges from major raw material suppliers, resulting in the loss of markets and customers 	●		<ul style="list-style-type: none"> ○ Implement actions to achieve sustainability KPIs on NDPE and eliminating child labor^{5,7} ○ Promote initiatives to prevent deforestation and restore forests^{5,7,8} ○ Reduce impact on ecosystems in farmlands and surrounding areas, reduce chemical use^{5,7,10} ○ Raise awareness and conduct capacity building of stakeholders^{5,7,8}
		4	Lower competitiveness due to inadequate response to change in consumer behavior and environmental concerns	<ul style="list-style-type: none"> Decline in competitiveness due to delay in response to the biodiversity demands of markets and customers 	●	●	<ul style="list-style-type: none"> ○ Implement actions to achieve sustainability KPIs on NDPE and eliminating child labor^{5,7} ○ Implement measures to manage reputational risks in partnership with NGOs⁶ ⊙ Promote business strategies that take advantage of changes in social trends as opportunities ⊙ Enhance initiatives to address global issues
		5	Technology	Development and spread of alternative biological resources	<ul style="list-style-type: none"> Increased development and production costs due to growing demand for products that use alternative raw materials in consideration of biodiversity 	●	●
	Reputation	6	Damage to reputation among consumers and society	<ul style="list-style-type: none"> Consumer boycotts and criticism from consumers, NGOs and local residents Decline in public credibility, resulting in the loss of markets and customers 	●	●	<ul style="list-style-type: none"> ○ Implement actions to achieve sustainability KPIs on NDPE and eliminating child labor^{5,7} ○ Implement measures to manage reputational risks in partnership with NGOs⁶ ○ Promote initiatives to prevent deforestation and restore forests^{5,7,8} ○ Reduce impact on ecosystems in farmlands and surrounding areas, reduce chemical use^{5,7,10} ○ Raise awareness and conduct capacity building of stakeholders^{5,7,8} ⊙ Disclosure of high-quality information on nature-related risks and opportunities
		7	Damage to reputation among investors	<ul style="list-style-type: none"> Company stocks excluded from ESG funds if our response strategies to nature-related risks and opportunities are evaluated as inadequate, resulting in a slump in stock prices 	●	●	<ul style="list-style-type: none"> ○ Implement actions to achieve sustainability KPIs on NDPE and eliminating child labor^{5,7} ○ Implement measures to manage reputational risks in partnership with NGOs⁶ ○ Promote initiatives to prevent deforestation and restore forests^{5,7,8} ○ Reduce impact on ecosystems in farmlands and surrounding areas, reduce chemical use^{5,7,10} ○ Raise awareness and conduct capacity building of stakeholders^{5,7,8} ⊙ Disclosure of high-quality information on nature-related risks and opportunities
Physical risks	Acute risks	8	Unintentional introduction of invasive species and GMO crops	<ul style="list-style-type: none"> Consumer boycotts and criticism from consumers, NGOs and local residents Decline in public credibility, resulting in the loss of markets and customers 	●	●	<ul style="list-style-type: none"> ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³ ⊙ Explore new alternative raw materials¹² ⊙ Reduce number and distance of transportation
		9	Increase in flooding and storm surges	<ul style="list-style-type: none"> Damaged factories and suspension of operations Disruption in supply chains 	●		<ul style="list-style-type: none"> ○ Enhance the resilience of our business sites ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³
	Chronic risks	10	Biological resource depletion	<ul style="list-style-type: none"> Reduced production volume due to changes in the growing environment of major raw materials, resulting in higher raw material prices 	●	●	<ul style="list-style-type: none"> ⊙ Promote initiatives to conserve and restore biological resources^{7,8} ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³
		11	Water resource depletion, pollution from wastewater	<ul style="list-style-type: none"> Reduced supply volume due to crop failure of major raw materials or suspension of operations at suppliers, resulting in higher raw material prices 	●	●	<ul style="list-style-type: none"> ⊙ Promote initiatives to conserve and restore water resources^{7,8} ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³
		12	Lower farmland productivity	<ul style="list-style-type: none"> Decline in farmland productivity in regions producing our raw materials, resulting in higher raw material prices Environmental destruction of farmlands at suppliers, making procurement difficult 	●	●	<ul style="list-style-type: none"> ⊙ Promote initiatives to conserve and restore farmland productivity^{7,8} ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³
		13	Dairy cattle grazing and excrement	<ul style="list-style-type: none"> Consumer boycotts and criticism from consumers, NGOs and local residents Decline in public credibility, resulting in the loss of markets and customers 	●		<ul style="list-style-type: none"> ○ Strengthen efforts to prevent or mitigate environmental risks across the supply chain based on the Group's sourcing policies³
		14	Decline in raw material harvest due to decrease in pollinators	<ul style="list-style-type: none"> Decline in volume of raw material harvests due to decline in percent fruit set, resulting in procurement shortages 	●		
Systemic risks	15	Ecosystem destabilization	<ul style="list-style-type: none"> Decline in volume of raw material harvests due to ecosystem collapse in countries and regions growing our raw materials, resulting in procurement shortages 	●			

*1 Potential regulations on land use, water use, pesticides, chemical substances, plastics, waste, greenhouse gas emissions, water/soil/air pollution, mandatory due diligence on raw materials, new regulations, among others

*2 Potential regulations on land use, water use, pesticides, chemical substances, plastics, waste, greenhouse gas emissions, water/soil/air pollution, among others

*3 Sustainable Procurement Management

<https://www.fujioilholdings.com/en/sustainability/procurement/>

*4 https://www.fujioilholdings.com/en/pdf/news/2024/240125_en.pdf 

(Notice of Establishment of Joint Venture Company by Consolidated Subsidiary)

*5 Sustainable Procurement of Palm Oil

https://www.fujioilholdings.com/en/sustainability/palm_oil/

*6 FUJI OIL GROUP Grievance Mechanism

https://www.fujioilholdings.com/en/sustainability/grievance_mechanism/

*7 Sustainable Procurement of Cocoa

<https://www.fujioilholdings.com/en/sustainability/cocoa/>

*8 Sustainable Procurement of Shea Kernels

https://www.fujioilholdings.com/en/sustainability/she_a_kernel/

*9 Sustainable Procurement of Soybeans

<https://www.fujioilholdings.com/en/sustainability/soy/>

*10 https://www.fujioil.co.jp/news/2021/_icsFiles/afieldfile/2021/10/04/211012.pdf 

(Launched "SoyBio MA," upcycled soy whey for bioremediation of soil, in Japanese)

*11 Creation of Diverse Plant-based Ingredients

https://www.fujioilholdings.com/en/sustainability/food_resources/

*12 <https://www.fujioilholdings.com/pdf/news/2022/20221004Newsrelease.pdf> 

(Palm oil substitute derived from oleaginous yeast achieved world-leading production volume (98 g/l), in Japanese)

Related documents

ESG Data Book (PDF 2.85MB) 