NORINCHUKIN

Climate & Nature Report 2024

Dedicated to sustaining all life

TCFD/TNFD Report

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Message from the CEO

The Norinchukin Bank is a member of cooperative organizations that support the agriculture, fishery and forestry industries. In December 2023, we celebrated our 100th anniversary. Founded in the year of the Great Kanto Earthquake, we have worked with clients in the primary industry over the past 100 years, overcoming earthquake disasters, the post-war insolvency crisis, Global Financial Crisis, and numerous other crises. Now, we face the two biggest crises of this century: intensifying climate change and the deterioration of nature. These crises are unlike any we have seen, and solutions remain unclear.

In my conversations with farmers and fishermen across the country, I often hear them comment on changes in harvest seasons or the types of fish they catch. These changes represent just how inseparable and interdependent climate and nature are. The agriculture, fishery and forestry industries are the culmination of climate, adaptation, and the work of humankind. As a bank founded in these industries, we are responsible for protecting and nurturing our regions to pass down healthy environments to the next generation.

The New York Stock Exchange held an event in September 2023 to celebrate the launch of the TNFD recommendations. Former co-chair of the TNFD, Elizabeth Mrema, gave a speech in which she stated, “Business as usual is no longer an option and business and finance can no longer consider nature and biodiversity as just a Corporate Social Responsibility (CSR) issue. It is now squarely a central and strategic risk management issue.” Every officer and employee must consider how to face, overcome, and take action against challenges surrounding climate and nature.

Human life, food (living things), and the earth (our planet) are all interconnected. We require food to live. The agriculture, fishery and forestry industries provide us with the very plants and animals that we eat, nourished by the natural air and water that bless the earth. These blessings of nature are only available because of a sustainable global environment. The phrase below represents our Purpose to enrich the chain of life for future generations to enjoy. This phrase condenses our aspirations, goals, and our promise to society.

Dedicated to sustaining all life.

- Work together with our stakeholders to foster the agriculture, fishery, and forestry industries and to create a prosperous future for food and lifestyles, and thereby contribute to a sustainable global environment. -

Our challenge over the next 100 years is for executives and employees to work together to resolve climate change, loss of biodiversity, deterioration of nature, and other issues that impact life directly. I am committed to ensuring the Bank is indispensable to our members who protect the community. We will establish the Bank as a global leader in food and agriculture sustainability, inspiring our members to take a hands-on approach to bring forth the next generation.

Protecting climate and nature is essential to the chain of life, and passing down better environments will not be an easy task. At the same time, changing our business may involve some pain. But I view this transition toward a better future as a business opportunity. Providing capital and solutions for more eco-friendly businesses will lead to more opportunities for us as well.

The Norinchukin Bank supports sustainable food and agriculture made possible through climate and nature. This Climate and Nature Report represents our first effort to integrate climate and nature disclosures into one. The Climate and Nature Report references the recommendation of the Task Force on Climate-related Financial Disclosures (TCFD) and the Task Force on Nature-related Financial Disclosure. This report is by no means exhaustive. We must consider a wide range of issues that require further analysis and measures. Nevertheless, we took on the challenge from the standpoint of *getting started*. I am pleased to present this Norinchukin Bank integrated Climate and Nature Report to you, our stakeholders, with whom we partner in solving these important issues.

President and Chief Executive Officer,
The Norinchukin Bank
OKU Kazuto

Executive Summary

<table>
<tr><th></th><th>Climate</th><th>Nature</th></tr>
<tr><td>Governance</td><td colspan="2">・Organized the Sustainability Committee under the Board of Directors; together with other management committees discusses and, if necessary, submits proposals and reports to the Board of Directors and the Supervisory Committee
・Selected Co-CSUOs (chief sustainability officers)
・Established the Sustainability Advisory Board as an advisory body to the Board of Directors
・Established a framework to respect the rights of local communities and indigenous peoples based on our Human Rights Policy, etc.</td></tr>
<tr><td rowspan="2">Strategy</td><td colspan="2">・Define the Bank's Environmental Policy, as well as materialities and medium-term vision (Nochu Vision 2030) toward achieving our purpose, as our response to climate change and biodiversity
・Recognize business opportunities in the transition and technology development toward decarbonization, demand for capital to sustain and restore biodiversity, and transition support to investment and finance clients
・Collaborate and partner with industry, government, and academia; participate in national and international initiatives
・Set a target for ¥10 trillion in new sustainable finance by fiscal 2030</td></tr>
<tr><td>We joined the Net-Zero Banking Alliance (NZBA), committing to Net Zero by 2050 and GHG emissions reduction targets for our investment and loan portfolio in fiscal 2030
In addition to setting targets for the power sector in fiscal 2023, we will establish targets for our investment and loan portfolio in the oil and gas, coal, and steel sectors
・Collate and systematize initiatives in our net zero transition plan
・ Expand and upgrade engagement with investees and borrowers
・Strive to achieve net-zero greenhouse gas emissions at Bank group itself by fiscal 2030
・Collaborate with JForest members in establishing a forest carbon sink target of 9 million tCO_2 per year in fiscal 2030
・Conduct scenario analysis of the impact of climate change-related risks on credit portfolios, etc., based on sector-specific risk assessments
◇Transition risk: Impact analysis of the electricity, oil and gas, food and agriculture, beverage, and chemical sectors on credit costs
◇Physical risk: Scenario analysis of the impact of flood damage on key locations of domestic and overseas borrowers, collateral properties pledged, and Norinchukin Bank Group locations (acute risk); impact analysis of climate change on the agriculture and fisheries industry (chronic risk)</td><td>Nature-related risks extend to the Bank in the form of physical risk and transition risk, since natural and ecological degradation are interrelated with climate change
・Conduct dependency and impact analysis, and perform provisional scenario analysis across our overall investment and loan portfolio to identify nature-related risks and opportunities
・Conduct analyses of dependencies and impacts on nature (land, climate, water, biodiversity) across our portfolio
◇Assessment of physical and transition risk across our portfolio based on dependence and impact
◇Conduct ESG risk analysis based on the value chain of investees and borrowers(target food-related sectors with high dependence and impact on nature)
◇Visualize links with nature across the value chain using trade statistics
◇Conduct location analysis across our portfolio</td></tr>
<tr><td>Risk Management (Risk and Impact Management)</td><td colspan="2">・The Board of Directors formulated the Risk Management Policy to ensure appropriate Bank-wide risk management. Under this framework, we manage and control environmental and social risks, including climate and nature-related risks.
・The Bank identified addressing climate change, biodiversity, and other sustainability-related issues as our top risk based on the Risk Appetite Framework.
・We are upgrading environmental and social risk management systems
◇Response based on Policy on Environmental and Social Considerations in Financing and Investment Activities
◇ESG integration incorporated into credit assessments
◇Ensure conformity with the Equator Principles when financing large-scale development projects</td></tr>
</table>

	Classification	Indicators		Latest Results	Target
Metrics and Targets	Reduce GHG Emissions by Investees and Borrowers	Financed Emissions			Interim Target for FY2030 toward Net Zero by 2050
		Lending	【Power】 Base year: FY2019 213gCO_2e/kWh	FY2021 209gCO_2e/kWh	138gCO_2e/kWh -165gCO_2e/kWh
		Lending	【Oil and Gas】 Scope1/2 Base year: FY 2019 8.9gCO_2e/MJ	FY2021 14.5gCO_2e/MJ	3.1gCO_2e/MJ
		Lending	【Oil and Gas】 Scope3 Base year: FY2019 0.51MtCO_2e	FY2021 0.20MtCO_2e	0.37MtCO_2e
		Lending	【Coal】	Response and engagement based on Policy on Environmental and Social Considerations in Financing and Investment Activities	
		Lending	【Steel】 Base year: FY2019 1.99tCO_2e/t	FY2021 2.06tCO_2e/t	1.54 - 1.73tCO_2e/t
		Investments	【Stocks and Bonds】 Emissions on a per unit of investment basis Base year: FY2019 0.66tCO_2e/million yen	FY2021 0.54tCO_2e/million yen Vs. FY2019 -18%	Vs. FY2019 -49%
		Secure the amount of forest carbon sink, together with JForest members		FY2021 6.12 million CO_2	9 million tCO_2/year as of FY2030
		Scope 1 emission reduction		FY2022 17.052tCO_2	Net Zero by FY2030
	Pursue sustainable business	Sustainable finance		FY2021 - 1H FY2023 (cumulative) ¥6.2 trillion	¥10 trillion by FY2030
	Strengthen risk management system	Reduce outstanding investments and loans for coal-fired power generation		Investments and loans outstanding as of FY2022 ¥36.6 billion	Zero by FY2040
	Nature-related metrics listed under the metrics section				

We placed icons for content related to Climate (TCFD recommendations) and Nature (TNFD recommendations) at the beginning of major sections or individual topics in the body of this report.

We recognize that responses to climate and nature issues are integral and inseparable, and that these issues have many commonalities. We provide this information as a reference from the perspective of communicating clearly to stakeholders the status of our disclosures based on TCFD and TNFD recommendations.

1 Introduction

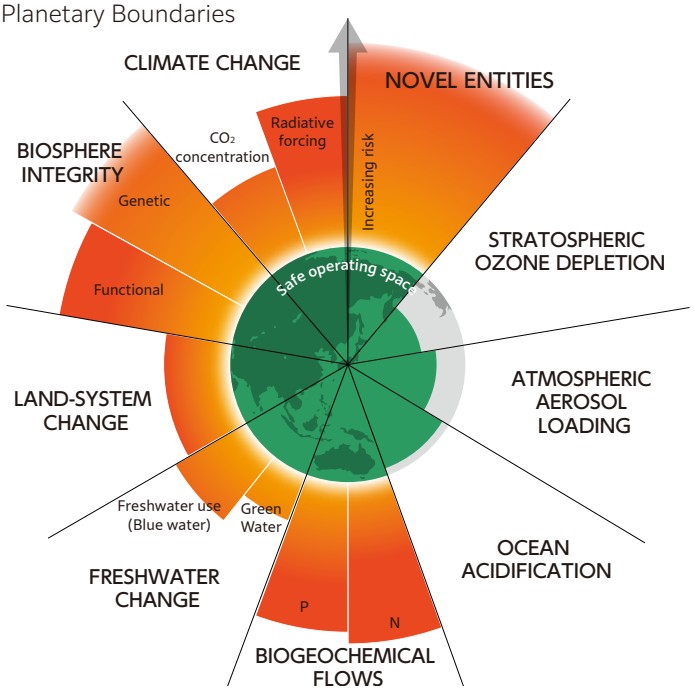
Climate Nature

This report describes how The Norinchukin Bank (“the Bank”), as a cooperative financial institution based on the agriculture, fishery and forestry industries, assesses and manages climate and nature-related risks, as well as how we identify new business opportunities for sustainable business management and operations.

We have written this report with a sense of urgency related to dramatic changes in the foundational and critical agriculture, fishery and forestry industries. This report also reflects our awareness of the pressing need to respond to changes in climate and nature, which represent the sources of life. The latest assessment of planetary boundaries* in 2023 indicated that of the nine boundaries, six have crossed well beyond the safe operating space into a danger zone: Novel entities (including plastics), climate change, biosphere integrity, land-system change, freshwater change, and biochemical flows (phosphorus and nitrogen). In other words, the environmental impact of human activities has already exceeded the limits of the Earth. Scientists are ringing the alarm bells not only in the context of climate change, but also in the context of novel entities of industrial origin and the rapid loss of biosphere integrity.

*Also called Earth’s boundaries. The idea that irreversible changes will be triggered if human activities exceed the safe range of nine boundaries related to global change.

Planetary Boundaries



Global Top Risks Over the Next 10 Years

1	Extreme weather events
2	Critical change to Earth systems (climate tipping points)
3	Biodiversity loss and ecosystem collapse
4	Natural resource shortages
5	Misinformation and disinformation
6	Adverse outcomes of AI technologies
7	Involuntary migration
8	Cyber insecurity
9	Social polarization
10	Pollution (air, soil, water)

Source: Left, Stockholm Resilience Center; right, World Economic Forum

The impact of the Earth’s distress on lives, health, and corporate business activities is reflected in the strong sense of urgency demonstrated by global business leaders regarding the degradation of nature. According to Global Risks Report 2024 (World Economic Forum)*, climate change and biodiversity loss represent top risks, giving rise to even greater concerns of the impact on business. Of the top global risks in the next 10 years, the top four in rank are climate and nature-related.

In response to climate change, many companies and financial institutions recently declared commitments to achieve net zero by 2050, dealing with decarbonization as a business issue. As with climate change, companies and financial institutions must face the impact of their business activities on the critical situation in natural capital and biodiversity, treating their activities as an urgent management issue. Most importantly now, we must

recognize business-related climate and nature risks as business risks. We must respond to these risks with transparency and an attitude that such risks are not outside our core business activities, but part of business strategy and management issues falling under risk management activities.

Global discussions and responses to climate change have progressed since the adoption of the Paris Agreement at the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015. The response to nature has been discussed in stages. Representatives adopted the Kunming-Montreal Global Biodiversity Framework (GBF) at the 15th Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity in 2022. At the same time, the business world is demonstrating a greater recognition of the issues at hand. The 2030 mission of GBF is *to take urgent action to halt and reverse biodiversity loss to put nature on a path to recovery*, or to be nature positive, in other words. GBF also includes 23 targets for 2030. Target 15, in particular, refers directly to operators and businesses. The target encourages business to disclose risks, dependencies, and impacts on biodiversity, as well as to create policies to ensure disclosure. This is particularly important for large companies and financial institutions, which are asked to disclose not only their own data, but data related to supply chains and portfolios.

The Norinchukin Bank is a financial institution that continues to take on the challenge of achieving stable profits in global financial markets and serving those who protect local communities and the agriculture, fishery and forestry industries. Therefore, we recognize our responsibility to manage an investment and loan portfolio that contributes to net zero and nature positive, to establish a risk management framework, to disclose information, and to support transitions in the food and agricultural value chain originating with the agriculture, fishery and forestry industries. We also recognize our responsibility to help achieve the purpose of the Paris Agreement and GBF across the breadth of our business activities.

**Global Risks Report 2024*, World Economic Forum

Together With the Agriculture, Fishery and Forestry Industries, Cooperative Organizations, and Nature

Article 1 of the Norinchukin Bank Act provides that as a financial institution based on agriculture, fishery and forestry cooperatives, as well as other members of the agriculture, fishery and forestry cooperative system, the Bank contributes to the development of the nation's economy by supporting the advancement of the agriculture, fishery and forestry industries by providing financial services for the member organizations of the cooperative system. As a member of a cooperative organization built on agriculture, fishery and forestry cooperatives, we are responsible for ensuring the future sustainability and resilience of natural capital, biodiversity, and the communities that offer support.

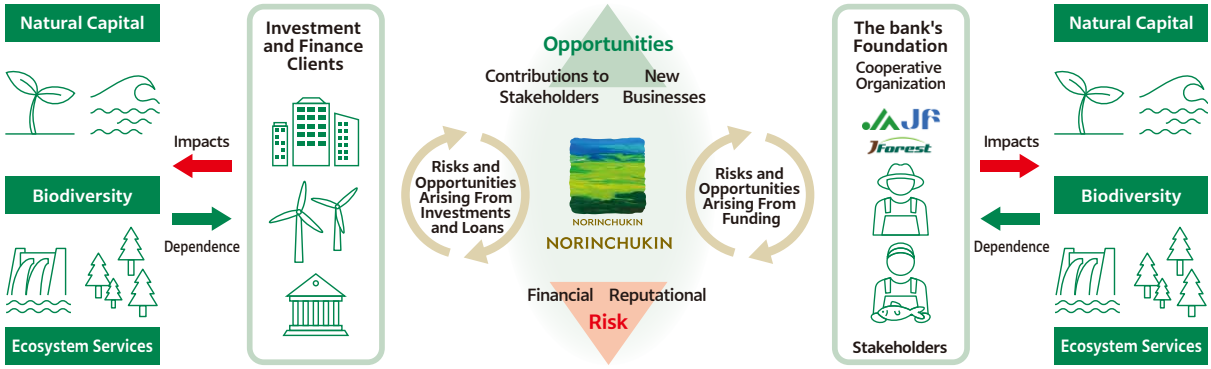
Japan's agriculture, fishery and forestry industries face many challenges. These challenges include stagnant prices for agriculture, fishery and forestry products and a declining population of people engaged in primary industries. We are a financial institution that serves as a bridge between the local and global aspects of food and agriculture. In this capacity, we take steps to address these challenges, but the new challenges of climate change and natural degradation pose a major risk.

Over the recent past, natural disasters and extreme weather conditions have disrupted the production cycle of crops. Environmental changes, including declining fish catches and changes in fish species caught, have made it difficult for the agriculture, fishery and forestry companies to maintain stable operations. In government policy, Europe began the implementation of farm-to-fork. This is a European Green Deal policy to improve food safety, health, fairness, and environmental friendliness at all stages of production, from the farm to the table. In Japan, the Ministry of Agriculture, Forestry and Fisheries (MAFF) launched the Strategy for Sustainable Food Systems, *MIDORI*. In the context of these environmental changes and shifting policy trends, it is important that The Norinchukin Bank supports the transition to carbon neutrality and nature positive, as well as the transformation to achieve that goal, mitigating the negative impacts of the agriculture, fishery and forestry industries on climate and nature and vice-versa.

The Norinchukin Bank is a unique financial institution in a world in which nature plays a significant role both downstream (investment and finance clients) and upstream (capital and other funding sources) in the value chain. With a stable funding base provided by capital from JA, JF, and JForest, as well as JA Bank and JF Marine Bank

deposits from individual members and customers, we lend funds to members, agricultural, fishery and forestry workers, and companies related to the agricultural, fisheries and forestry industries. We also conduct various lending and investment activities in Japan and abroad. Due to the unique structure of our business, we understand the close relationships of nature upstream and downstream in the value chain. We recognize that nature-related risk management and capturing opportunities are important issues that affect the sustainability of our business operations and organizational foundation.

The Norinchukin Bank is committed to achieving Net Zero by 2050 across our investment and loan portfolio. In addition to decarbonizing our investment and loan portfolio, we established a medium- to long-term goal to improve the incomes of farmers, fishermen and foresters by 2030 to support sustainable agriculture, fishery and forestry industries and local communities. The agriculture, fishery and forestry industries are inseparable from climate and nature-related issues that surround the industries and communities. We offer consulting services to address the management issues faced by entities on the front line of these industries, and we support value chains by investing in and financing food and agriculture-related enterprises.



The Nexus of Climate Change and Nature

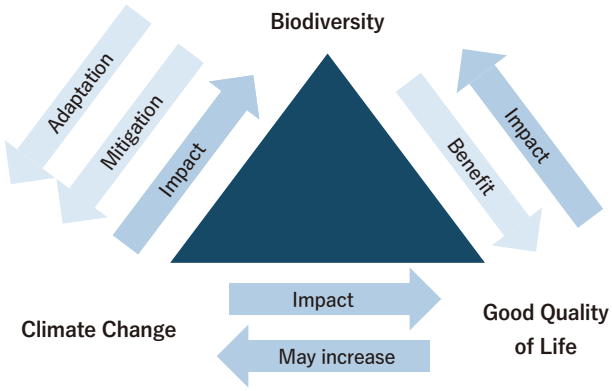
Addressing climate change today has become an international commitment, not to mention a business imperative. To mitigate rising temperatures effectively, as well as to achieve more sustainable societies and economies, we must begin by addressing natural capital and biodiversity.

Climate change risks are part and parcel of nature-related risks. Pollution, changes in the use of land and other resources, and the use of water resources and other resources accelerate climate change. Climate change, in turn, furthers change in the use of land and other resources in an interrelationship.

The agriculture, fishery and forestry industries, in particular, experience significant synergies between climate change measures and responses to natural capital and biodiversity. The 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28) held in Dubai addressed these synergies as a major topic, where representatives issued the Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action. In view of international trends and the Bank's organizational foundation, we recognize that initiatives and disclosures cognizant of the Climate & Nature Nexus are essential if we are to achieve our purpose.

The Norinchukin Bank understands the importance of creating synergies and minimizing trade-offs to prevent climate change, natural change, and the degradation of nature. Therefore, in this report, we will proceed with an analysis that considers climate and nature as an integral part of the process to the greatest extent possible. This report also reflects our efforts to identify critical sectors and analyze scenarios from the perspectives of climate and nature.

Relationships between climate change, biodiversity and good quality of life



Source: IPBES 2021,

Comments From an Expert

The University of Tokyo
Graduate School of Agricultural and Life Sciences
Department of Forest Science
Professor, Laboratory of Forest Landscape Planning and Design
IPBES Report Coordinating Lead Author (as of March 2024)
Ryo Kohsaka

The Kunming-Montreal Global Biodiversity Framework (GBF) of the Convention on Biological Diversity was accepted at the end of December 2022. The GBF seeks to have all large companies, multinational companies, and financial institutions involved in business activities, supply chains, value chains, and portfolios regularly monitor, assess, and disclose with transparency the risks, dependencies, and impacts related to biodiversity (Target 15). Initially, the proposal was to make information disclosures, etc., mandatory, rather than voluntary. However, the mandatory nature of the proposal was abandoned in consideration of legislative challenges and the small, medium, and micro businesses that deal in the realities of the agriculture and forestry industries.

I am personally involved with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) as coordinating lead author for the Methodological Assessment of the Impact and Dependence of Business on Biodiversity and Nature's Contributions to People (Business and Biodiversity Assessment). The key question related to this methodology is how to make the best estimations at this point in time. At the same time, we see the mutual impacts of climate change and biodiversity through ecosystem resilience, water cycles, etc., gaining significant attention. The Norinchukin Bank selected the nexus of climate and nature as the axis of this report. As a private financial institution, the Bank also contributes to Target 15 in terms of the framework of this report and methodology. Solid data and other information from the field of biodiversity will be important in the face of the expected tough negotiations with developing economies and other countries when addressing common but differentiated responsibilities* in the global arena.

In addition to international activities, The Norinchukin Bank provides investment, financing, and non-financial support throughout the food and agriculture value chain. I also have high expectations for the Bank in bottom-up initiatives originating from local communities.

*The idea that all countries share responsibility for global warming, but in differing degrees for developing countries due to greater responsibility among developed countries when taking historical emissions and other factors into account.

2 Disclosure Approach

Climate Nature

The agriculture, fishery and forestry industries are the foundation of the Norinchukin Bank. These industries are not only prone to negative impacts of climate change but also harbor the potential to amplify climate change. Our response to climate change is based on the sustainability of the agriculture, fishery and forestry industries. We pursue efforts to mitigate and adapt to climate change through our business activities, focusing on opportunities and risks related to climate change. As part of our efforts, we began supporting the TCFD recommendations in 2019, working to expand our efforts and disclosures based on the recommendations.

TNFD launched the formal version of the TNFD recommendations in September 2023. These recommendations respond to the global challenge of shifting to more nature-positive financing through disclosures on nature-related risks and opportunities. Problems related to nature are the very challenges faced by agriculture, forestry and fisheries industries In response, we have contributed to the development of TNFD disclosure recommendations since jsince becoming a member the Task Force in November 2022. We announced our early adoption of TNFD in November 2023, basing this report on disclosures in line with the TNFD recommendations.

Given that the TCFD and TNFD focus on the same four pillars of disclosure, this report combines climate and nature disclosures for Governance, Strategy, Risk (and Impact) Management, and Metrics and Targets to the

TNFD Disclosure Recommendations			
Governance	Strategy	Risk and Impact Management	Metrics and Targets
Disclose the organization's governance of nature-related dependencies, impacts, risks and opportunities.	Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organization's business model, strategy and financial planning where such information is material.	Describe the processes used by the organization to identify, assess, prioritize and monitor nature-related dependencies, impacts, risks and opportunities.	Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks and opportunities.
A. Describe the board's oversight of nature-related dependencies, impacts, risks and opportunities.	A. Describe the nature-related dependencies, impacts, risks and opportunities the organization has identified over the short, medium and long term .	A(i) Describe the organization's processes for identifying, assessing and prioritizing nature-related dependencies, impacts, risks and opportunities in its direct operations.	A. Disclose the metrics used by the organization to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process
B. Describe management's role in assessing and managing nature-related dependencies, impacts, risks and opportunities.	B. Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organization's business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place.	**A(ii) Describe the organization's processes for identifying, assessing and prioritizing nature-related dependencies, impacts, risks and opportunities in its upstream and downstream value chain(s).**	B. Disclose the metrics used by the organization to assess and manage dependencies and impacts on nature.
C. Describe the organization's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organization's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.	C. Describe the resilience of the organization's strategy to nature-related risks and opportunities, taking into consideration different scenarios.	B. Describe the organization's processes for managing nature-related dependencies, impacts, risks and opportunities.	C. Describe the targets and goals used by the organization to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.
	D. Disclose the locations of assets and/or activities in the organization's direct operations and, where possible, upstream and downstream value chain(s) that meet the criteria for priority locations.	C. Describe how processes for identifying, assessing, prioritizing and monitoring nature-related risks are integrated into and inform the organization's overall risk management processes.	

Bolded text is from TNFD recommendations. All other items are common to TCFD recommendations on climate change.
Source: TNFDv1.0

greatest extent possible.

The Bank participated in discussions on comprehensive responses to TCFD and TNFD through the United Nations Environment Programme Finance Initiative (UNEP FI) TCFD-TNFD alignment working group. We consider life, (depicted in our Purpose), and the climate and nature that give us life, to be inseparable. This integrated approach will enable appropriate disclosure to various stakeholders on Bank risks and opportunities agriculture, fishery and forestry industries.

Dependencies and Impacts on Nature

We recognize that disclosure in accordance with the TNFD recommendations is possible through the identification of dependencies and impacts, as well as risks and opportunities arising from these factors. Ecosystems and biomes have changed through close and mutual interactions with human societies. Recognizing this relationship is critical to fully understand the above factors and identify our dependencies and impacts (e.g., pollutant emissions and environmental impacts through corporate activities) on land, oceans, atmosphere, and freshwater.

As a financial institution, we need to identify portfolios (i.e., our dependencies and impacts through investments and loans to our clients and other entities) and recognize the risks and opportunities that arise from investments and loans. We decided on certain approaches to identify corporate risks in climate change. One approach measures GHG emissions or physical risks to business from flooding. However, assessing natural capital and biodiversity is complex and must begin with an understanding of how business depends on and impacts nature.

Dependencies refer to the necessary factors in business processes that are derived from nature. For example, food-related industries that produce drinking water are strongly dependent on water resources, the source of drinking water. Water resources are supported by groundwater and the ability of forests to conserve water. Understanding these relationships is essential to understand dependencies. As deterioration of the natural resources on which the company is dependent on progresses, companies face operational risks that may impede or disrupt conventional business activities. Lack of additional measures may lead to lower earnings and financial risks.

On the other hand, impacts refer to how a business affects natural capital and biodiversity. TNFD highlights the importance in impact identification and understanding how impacts affect stakeholders through changes in natural capital and biodiversity. For example, poor planning of natural rubber plantations leads to air and soil pollution, leading to the destruction of rainforests and habitats of rare species. Automobile manufacturers and trading companies that procure raw materials are also considered to have impacts on the climate and nature through their supply chains. These impacts may lead to conflict with local communities, resulting in reputational risks and other factors that lower public trust in the company.

We understand that the risks and opportunities arising from our dependencies and impacts of such investment and loan clients will spill over to us through our financing activities. We also recognize the importance of identifying these pathways and assessing our risks.

Understanding Human Rights

We recognize the importance of a Just Transition in addressing climate change and protecting and restoring natural capital and biodiversity. Indigenous and local peoples around the world, whose cultures intertwine naturally with nature, have played a major role in protecting and ensuring the proper use of nature. The TNFD recommendations regard engagement with indigenous people, local communities, and affected stakeholders to be an important matter. We must ensure communication with these individuals and respect human rights from a governance perspective to create equitable and sustainable societies for the future.

Engagement with Indigenous Peoples, Local Communities, and Affected Stakeholders is one of six general requirements of the four TNFD recommendation pillars, as these individuals play a key role in identifying nature-related dependencies, impacts, risks, and opportunities. Indigenous peoples take great care of biodiversity-rich areas through interactions (i.e., with traditional knowledge) that do not inflict damage on the ecosystems. This information and knowledge are crucial to achieving nature positivity. In Japan, local stakeholders play important

roles in local communities. Farmers conserving terraced rice paddies and fishermen restoring seaweed beds represent just a few examples. We recognize the importance of participation and input from local communities and other stakeholders in discussions on matters related to corporate risks and opportunities.

The Norinchukin Bank Approach to the TNFD Recommendations General Requirements

Nature

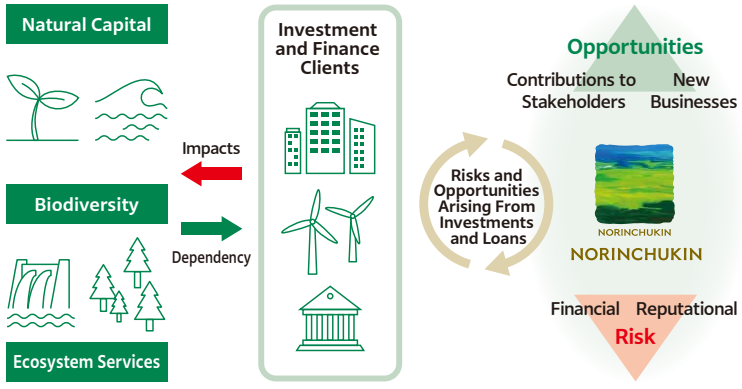
The TNFD Recommendations include an additional six general requirements on top of the IFRS S1 *General Requirements for Disclosure of Sustainability-Related Financial Information* (sustainability disclosure standard issued by the International Financial Reporting Standards (IFRS) Foundation) and other provisions. The purpose of these general requirements is to ensure integration and consistency with other disclosure standards. The TNFD also recommends disclosing entities define said requirements. We defined and organized our approach to these general requirements as follows.

Application of Materiality

The Norinchukin Bank is a national-level financial institution founded in a cooperative organization of agriculture, fishery and forestry organizations. We offer smooth financing to members of Japan Agricultural Cooperatives (JA), Japan Fisheries Cooperatives (JF), National Federation of Forest Owners' Co-operative Associations (JForest), and other organizations. In this way, we play an important social role in developing the agriculture, fishery and forestry industries and the national economy. We are devoted to this role under our basic mission to provide stable profit return to our members. We will make diverse investments and loans worldwide and manage funds efficiently, backed by member investments and the stable financing of JA Bank and JF Marine Bank. This report analyzes and discloses the effects from financial risks and opportunities within our investment and loan portfolio. We base this information on the financial activities of investee companies and their dependencies and impacts on nature (and climate).

Agriculture, fishery, forestry, and local communities form the foundation of us, creating life that connects to many future lives and forms the societies in which we live. We make investments and loans to wide ranges of domestic and overseas companies and other entities. These financing activities may lead to certain companies imposing negative environmental and social impacts and externalities, resulting in financial risks to our entire portfolio in the medium to long term. Negative environmental and social impacts may also inflict harm to the sustainability of agriculture, fishery, forestry, and local communities that form the foundation of us. Moreover, said impacts may break the chain of life generated from these industries. This report focuses on the analyses of environmental and social impacts of our investment and loan activities based on the above factors.

We additionally recognize that interest in financial materialities and impact materiality varies amongst stakeholders. In response, this report uses the double materiality approach to consider the importance of disclosing informing to a wide range of stakeholders.



Scope of Disclosure

We analyze and disclose our relationships with nature in our business activities. The scope of disclosure includes the direct impact of greenhouse gas emissions from our business activities, downstream activities in our value chain (investment and financing partners), and upstream activities in our value chain (base members ofJA Bank and JF Marin Bank and agriculture, fishery and forestry industry members).

We commit to understand nature-related dependencies and impacts as a financial institution in our downstream investments and loans. Moreover, we launched discussions to disclose future risks and opportunities. We analyze the direct business of the investee in addition to investee value chains (e.g., procurement of raw materials or indirect impact of the business).

Location of nature-related issues

This report references available data to the greatest extent possible to analyze and takes into account the investee business locations. Specifically, we locate the headquarters, sales offices, factories, and other facilities of our investee companies to analyze their relationship with nature and the risks and opportunities they present.

However, data obtained for analysis is not exhaustive in terms of accuracy and comprehensiveness. We will strive to update and understand locations within the overall portfolio as appropriate based on progress in data development and analysis methods.

Integration With Other Sustainability-Related Disclosures

Our disclosure is based on an integrated understanding of climate and nature (Climate & Nature Nexus) and responds to both TCFD and TNFD recommendations. We recognize the co-benefits, synergies, and trade-offs between climate change mitigation, adaptation measures, and solutions to nature-related issues. Given these relationships, this report provides information on strategies, risk (and impact) management, and metrics and targets based on assessments of climate (GHG emissions) and nature (dependencies and impacts).

The time horizon considered

Analyses and disclosures in this report are estimated using the following time frames.
Short-term: in a few years Medium-term: in approx. 10 years Long-term: around 2050-

Engagement With Indigenous Peoples, Local Communities, and Affected Stakeholders

We respect and support international human rights standards. We endorse and participate in the Equator Principles and other initiatives that take into consideration indigenous peoples, local communities, and other stakeholders when making investment and financing decisions. The Bank ensures that our investments and loans conform with these policies (for more information, see Governance). Our Policy on Environmental and Social Considerations in Financing and Investment Activities prohibits or restricts investments and loans for locations adjacent to World Heritage sites and other protected areas. The policy also requires certain sectors to obtain certification to prove a decent level of environmental and social responsiveness in their production activities.

Going forward, the Bank recognizes the need to develop our current engagement efforts with respect to indigenous peoples, local communities, and other stakeholders.

3 Governance

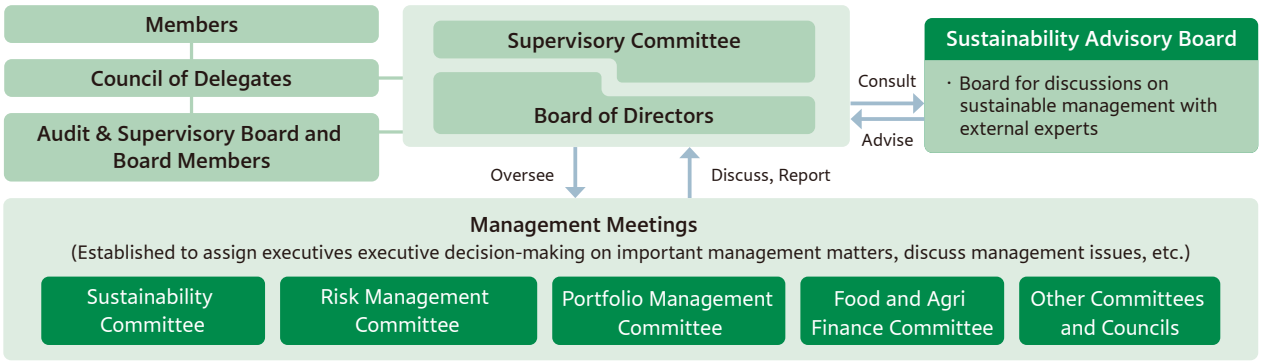
Climate Nature

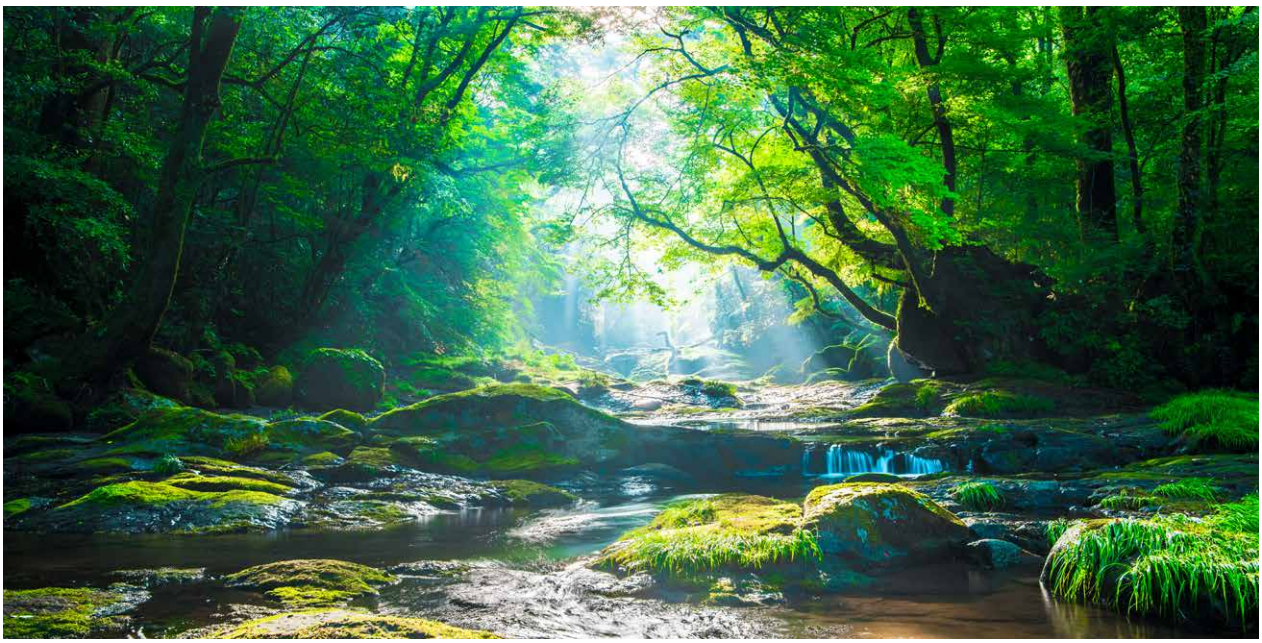
The Norinchukin Bank is a national level cooperative financial institution for agriculture, fishery and forestry industries. As an institutional investor, we participate in financial and capital markets through large-scale fund management in Japan and overseas. Accordingly, our decision-making processes are based on sharing and collaboration while adhering to Council of Delegates decisions. We base decisions on the Supervisory Committee and Board of Director accounts of internal and external situations of the cooperatives, as stipulated by The Norinchukin Bank Act.

We established management meetings under the board of directors which aim to assign executive decision-making on important management matters and discuss management and other issues. The Sustainability Committee holds regular discussions on environmental and social issues, including climate and nature. Additionally, the Risk Management Committee decides on matters regarding our overall risk management system and risk management, including environmental and social risks. Under the risk management framework, we hold discussions at the management level on responses to environmental risks and opportunities. For example, the Portfolio Management Committee visualizes investment portfolio GHG emissions while discussing allocation policies.

Agendas are discussed and reported to the board of directors and the Supervisory Committee as necessary, establishing a system for committees to oversee responses to climate and nature-related issues.

Governance in Addressing Climate Change and Nature-Related Issues





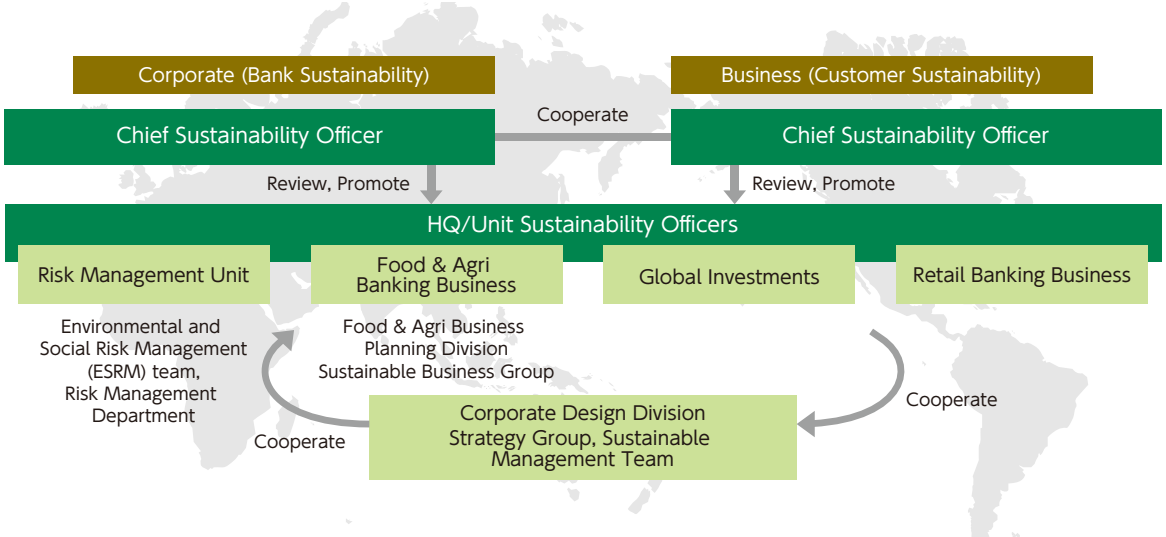
Major Agendas

Congressional Body	Chairperson	Major FY2023 Agenda Items, Discussions, and Reports (Related to Climate and Nature)
Supervisory Committee	Chairperson of the Supervisory Committee	● Materiality review and formulation of 2030 medium-term vision to achieve purpose ● Management plans and business performance (including sustainable management matters)
Board of Directors	President and chief executive officer	● Materiality review and formulation of 2030 medium-term vision to achieve purpose ● Establishment of GHG reduction targets for portfolio (oil and gas, steel, coal sectors) ● Management plans and business performance (including sustainable management matters) ● Selection of top risks ● Sustainability Advisory Board meeting results and responses
Sustainability Committee Meetings	Chief Sustainability Officer	Seven total meetings in FY2023 (including those co-hosted with other councils) ● Establishment of GHG reduction targets for portfolio (oil and gas, steel, coal sectors) ● Natural capital and biodiversity initiatives ● Initiatives to increase income in agriculture, fishery and forestry industries ● Measures based on human rights impact assessments ● Initiatives to encourage diversity ● Management plans and business performance (sustainability initiatives) ● Sustainability Advisory Board meeting results and responses ● External evaluation of sustainable management
Risk Management Committee	Chief Risk Officer	● Selection of top risks ● Revisions to risk management policy ● Partial revisions to investment and loan sector policies
Portfolio Management Committee, Food and Agri Finance Committee	Chief Financial Officer	● Partial revisions to investment and loan sector policies ● Allocation policy development (GHG emission visualization in investment portfolios)

Climate and Nature-Related Issue Promotion Structure

The Bank appoints two Chief Sustainability Officers (Co-CSuO) responsible for overseeing and implementing sustainable management. The officers collaborate with our branches to gather information on external trends from overseas offices in Europe, Asia, the Americas, Australia, and other regions. This collaboration enables us to incorporate global trends in our sustainable management, strive for business opportunities, and manage risks.

Furthermore, we work to strengthen organization-wide sustainable management by assigning HQ/Unit Sustainability Officers (SuO) to HQ and unit (i.e., Food & Agri Banking Business, Retail Banking Business, Global



Investments, and Risk Management Unit). The SuO advances initiatives of each division and unit based on our policies. In this way, the SuO is responsible for strengthening cooperation among divisions and units.

Director Compensation

The Norinchukin Bank Act provides that we are a financial institution based on agriculture, fishery and forestry cooperatives. As such, the Bank aims to develop the agriculture, fishery and forestry industries, as well as the national economy, by offering financing and other services to said cooperatives. Implementing sustainable management and addressing climate and nature issues, throughout our business will lead to the sustainability of the agriculture, fishery and forestry industries, and ultimately to a sustainable and prosperous society. The Bank designed our director compensation system to achieve this goal.

In principle, remuneration for Bank directors and executive officers consists of compensation and retirement benefits. Director compensation consists of fixed and variable systems. Compensation for Supervisory Committee Members and Audit & Supervisory Board Members consists of fixed remuneration only to ensure effective leveraging of their responsibilities. The retirement benefits are common to all directors, Supervisory Committee Members, and Audit & Supervisory Board Members.

Overview of Compensation Structure (Directors)

Compensation Type		Compensation Details	
Director Compensation	Fixed Compensation	・Established according to position considering 1) the Bank as a central, specialized financial institution for cooperatives and 2) characteristics and trends cooperative organizations and other business sectors.	70%
	Variable Compensation	・Established as a sound incentive for sustainable growth. Based on the individual's ability to set and reach targets under a management plan for advancing sustainable management, contributing to the agriculture, fishery and forestry industries and local communities, strengthening the foundation for member management, and contributing to staff engagement. ・A portion of variable compensation is awarded based on quantitative and qualitative evaluations that reflect the degree to which each director achieves the management plan related to their assignments.	30%
Retirement Benefits		・Benefits are calculated by multiplying years of service and the amount of compensation during said service by a fixed multiplier in accordance with the rules on retirement benefit payments.	

Capacity building and arising awareness

Climate change, natural capital and biodiversity, human rights, human capital, and other sustainability topics are diverse and rapidly changing. In response, the Bank held the Sustainability Roundtable (held 10 times in FY2023) as a forum to learn and exchange opinions on sustainability-related business opportunities and risk measures. Participants included guest lecturers, the chief sustainability officer, and other relevant officers and employees.

The Bank also offers sustainability training to employees of all ranks and takes action to spread awareness of climate change, biodiversity, and other sustainability issues within the company via an internal portal.

【FY2023 Sustainability Roundtable Topics】
ISSB, biodiversity (TNFD), human rights, human capital, circular economy, water resources, agriculture, fishery and forestry industries, ESG washing, carbon credits, impact, other

Column

Participation in JA Farming Support Team

The Bank celebrated our 100th anniversary in 2023. To commemorate our anniversary, we launched the My Purpose Project through which we conduct various activities to position our Purpose as a personal concept for every executive and employee. As part of our efforts, we participated in the JA Farming Support Team organized by the JA Group Nokyo Tourist Corporation. This team is a program designed to support agricultural volunteers. The Bank dispatches numerous volunteer directors and employees to areas and farms suffering serious labor shortages (a total of 602 volunteers participated as of March 2024).

We strive to provide opportunities for directors and employees to connect with nature as well as the agriculture, fishery and forestry industries and local communities on which the Bank is founded. We hope that these employees empathize strongly with our Purpose and take initiative to consider the individual roles they should play within the realms of agriculture and food, people and the environment, and communities and society. In this way, we aim for our efforts to lead to actions for our next century.

Sustainability Advisory Board

The Sustainability Advisory Board serves as an advisory body to the board of directors to reflect the opinions of outside experts and advance sustainable management in the Bank. The board convened in June and January of fiscal 2023, where participants exchanged opinions on overall matters of sustainable management. Participants also reviewed materialities and discussed initiatives related to climate change, natural capital, and biodiversity. In October 2023, directors and employees of the Bank visited the Kirin Group Mercian Corporation Chateau Mercian Mariko Vineyard to experience natural capital and biodiversity first-hand and deepen our understanding. This vineyard is the first agricultural production site in Japan to receive 30by30 certification.

Advisory board discussions contribute to the advancement of our sustainable management including updating our medium- and long-term goals on climate change, strengthening efforts in nature, and participating in rule-making.

Sustainability Advisory Board Members

Name	Affiliation and Position
Eiichiro Adachi	Managing Director, The Japan Research Institute
Takafumi Sato	Supervisory Committee Member, The Norinchukin Bank (Former Vice-Chairman of the IFRS Foundation)
Yukari Takamura	Professor, Institute for Future Initiatives, The University of Tokyo
Ryosuke Mizouchi	Professional Advisor, Kirin Holdings Company, Limited

(As of March 31, 2024)

Engagement With Affected Stakeholders

We strove to achieve sustainable environments and societies and establish agriculture, fishery and forestry industries for future generations. To do so, we must first emphasize engagement with stakeholders and work together to converse based on deep mutual understanding. We ensure transparency and accountability to our stakeholders in our efforts as we maintain and build relationships of trust.

Engagement With Investment and Finance Clients

We engage in environmental and social issues with investment and finance clients, focusing on risks and opportunities that arise through our business. In response to climate change, the Bank set interim GHG emission reduction targets for portfolio companies for fiscal 2030. We work to reach these targets discussing with portfolio companies to provide solutions.

Dialogue and Collaborations With Cooperative Members

The Bank works together with the JA Group, JA Zenchu, JA Zen-Noh, and JA Zenkyoren at the national level to establish the SDGs Liaison Conference. Participants of this conference discuss and collaborate on global sustainability and initiatives for sustainable agriculture, fishery and forestry industries and local communities. Similarly, we discuss and collaborate with the National Federation of Forestry Owners' Cooperatives Association and the National Federation of Fisheries Cooperative Associations on forests and the forestry industry and the fisheries industry, respectively.

Outside pressure for efforts from regional financial institutions grows as impacts of climate change intensify. The Bank shares information and holds dialogues with JA Shinnoren regarding the situation surrounding climate change and disclosures based on TCFD recommendations.

Bank Efforts to Engage With Indigenous Peoples and Local Communities

Nature

The TNFD recommendations address the importance of taking into consideration rights of local communities and indigenous peoples. Organizations must take action in governance of the management and the entire organization.

The Bank is committed to further enriching agriculture, fishery and forestry industries. We respect the rights and dignity of people rooted in equality and aim to create fair societies in line with the philosophies and spirits of cooperatives and their mutual aid. To address international human rights issues, we support and respect the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights (ICESCR), the International Covenant on Civil and Political Rights, the ILO Declaration on Fundamental Principles and Rights at Work, the UN Guiding Principles on Business and Human Rights, the Global Compact, the OECD Guidelines for Multinational Enterprises, and other international standards. Furthermore, the Bank began disclosing statements on human rights issues throughout our supply chain in 2016 in line with the requirements of the UK Modern Slavery Act 2015.

Based on this awareness, the Bank formulated our Human Rights Policy to respect human rights in all business activities and operations. This policy also reflects our efforts to enhance dignity and self-respect in all human beings as these traits should be held by each person in equal measure. We position the Human Rights Policy as our basic guideline for actions on human rights under our Code of Ethics, the highest level of regulation stipulating a code of conduct for all officers and employees. In the Human Rights Policy, we specify that *the Bank will strive to conduct due diligence to prevent or mitigate negative human rights impacts to the financial services we provide*. We identify human rights issues and evaluate impacts by partnering with external experts and conducting interviews with staff concerning our business activities and value chain (including group companies).

Furthermore, we based our Basic Policy for Investments and Loans and Policy on Consideration of Environmental and Social Issues in Investments and Loans on our Human Rights Policy. Under these policies, the Bank strives to take appropriate action on priority issues, focusing on topics and sectors recognized to significant potential to inflict negative impacts on human rights. We establish cross-sectoral issues that require special attention when making investments and loans. Such issues include projects that inflict negative impacts on indigenous communities or lead to involuntary resettlement due to land exploration. We also prioritize sectors with notable impacts on indigenous people and local communities. These sectors include coal-fired power generation, coal mining, palm oil, forestry, inhumane weapons, oil and gas, large-scale plantations, and large-scale hydroelectric

power generation.

The Bank adopts the Equator Principles to consider local communities and indigenous peoples affected by investments and loans. Based on our Basic Policy for Investments and Loans, we also formulated the Equator Principles Basic Policy and the Administration Guidelines for the Equator Principles. Designated staff members verify our conformity with the Equator Principles and we require our investment and loan clients to comply with these principles on the rights of local communities and indigenous peoples in large-scale development projects.

The Bank recognizes our current limitations and the need to strengthen stakeholder engagement based on TNFD guidance on stakeholder engagement* for financial institutions. We strive to enhance stakeholder engagement going forward, identifying nature-related dependencies, impacts, risks, and opportunities in our investments and loans.

*The Bank references the *TNFD Guidance on Engagement With Indigenous Peoples, Local Communities and Affected Stakeholders* to improve stakeholder engagement going forward.

4 Strategy

Overall Strategy and Core Principles for Solving Environmental Issues

Climate Nature

Dedicated to sustaining all life. Together with all our stakeholders, we nurture the agriculture, fishery, and forestry industries, creating a future abundant in food and life, while contributing to a sustainable global environment. This is the purpose of The Norinchukin Bank. Mitigating and adapting to climate change, as well as conserving and restoring natural capital and biodiversity, are essential in bringing about abundant food supplies and rich environments. These are issues that affect all life directly.

The Norinchukin Bank established an Environmental Policy and Human Rights Policy that represent our core principles related to the environment and society. Our Environmental Policy stipulates that we contribute to solving climate change, biodiversity, and other environmental challenges through our business activities. The policy stipulated further that we will reduce the environmental impact of our business activities while pursuing initiatives based on the recommendations of the TCFD and TNFD.

Environmental Policy: Key Points

1) Reflecting on our basic mission, we declare that we will contribute to the creation of a sustainable society through partnership and collaboration with fellow members

2) We declare our support and participation in international standards and initiatives to address environmental issues

3) We implement concrete initiatives based on the Environmental Policy through our core financing and lending business

4) We declare that, as a financial institution founded on the agriculture, fishery, and forestry industries, climate change and biodiversity* are particularly important environmental issues, and that we will respond to these issues through our business activities

5) We declare that we shall strive to respond to environmental issues as an element tied closely to our ability to foster a sound corporate culture, the backbone of our operations

* Refers to supporting and adopting the TCFD and TNFD recommendations, pursuing initiatives based on the purpose of said recommendations

Human Rights Policy: Key Points

1) Reflecting on our basic mission, we declare that we will contribute to the creation of a sustainable society through partnership and collaboration with fellow members

2) We declare our support and respect for international standards and initiatives* to address human rights issues

3) We declare our respect for human rights across the entire value chain (directors, employees, customers, and suppliers) in accordance with the concepts of the UN Guiding Principles on Business and Human Rights (Ruggie Principles)

4) We declare that we shall strive to respond to human rights issues as an element tied closely to our ability to foster a sound corporate culture, the backbone of our operations

* Universal Declaration of Human Rights, International Covenant on Economic, Social and Cultural Rights, International Covenant on Civil and Political Rights, ILO Declaration on Fundamental Principles and Rights at Work, UN Guiding Principles on Business and Human Rights, UN Global Compact, OECD Guidelines for Multinational Enterprises

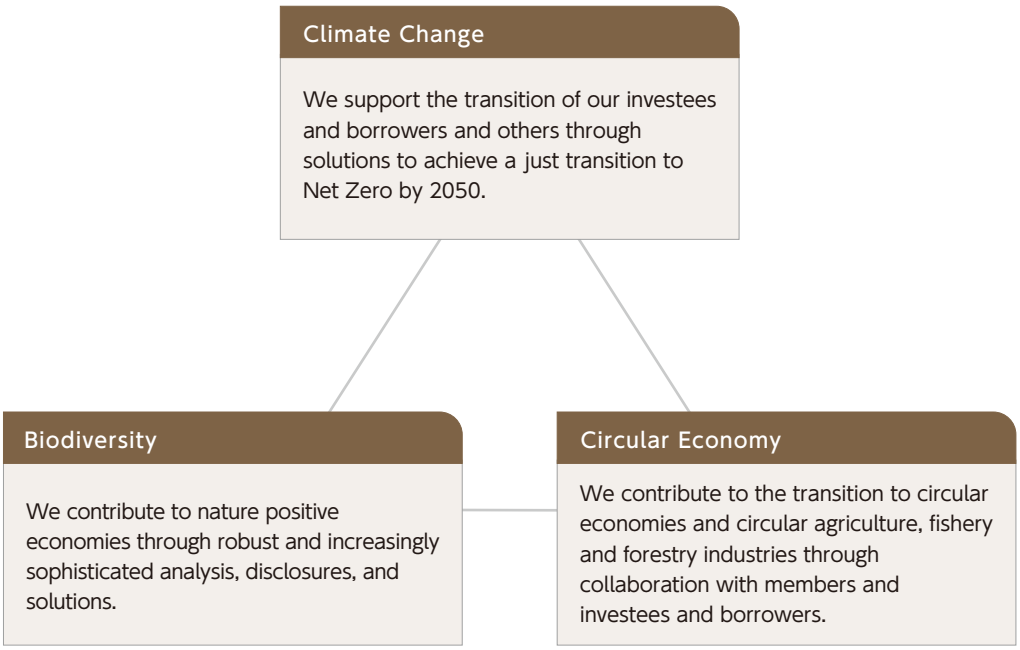
Materiality: Key Issues for Achieving Our Purpose

The Norinchukin Bank identified the following materialities related to achieving our purpose: Realizing a carbon-neutral society, Realizing a society living in harmony with nature, Strengthening the earnings power of the agricultural, Forestry and fisheries industries, realizing a resilient food system, and Achieving well-being at both the local and international level.

These materialities represent the Bank's commitment to creating positive impact and reducing negative impact toward the sustainability of agriculture, forestry, fisheries, and food. The materialities also demonstrate our belief that environmental and social sustainability related closely to these industries.

Medium-Term Vision: Our Vision for the Year 2030

In March 2024, the Bank announced a medium-term vision (*Nochu Vision 2030*). This vision servers as a management compass for business operations toward fulfilling our purpose. As one of the concepts under this vision, we intend to create positive impact through the power of cooperative organizations and finance to achieve sustainable environmental, social, and economic development. Climate change, biodiversity, and circular economies represent three priority areas of focus. As a financial institution, we pursue efforts that contribute to parallel solutions to these environmental issues for the development of the agriculture, forestry, and fishery industries and to make lives more sustainable.



The Norinchukin Bank recognizes the importance of a just transition in sectors that must undergo structural change to achieve decarbonized societies, nature positive economies, and circular economies. Just transitions ensure that employment equity and inclusion are not undermined and that industries and social economies themselves do not collapse.

Recognition of Opportunities Related to Climate and Nature

Climate change is a future risk. At the same time, we can find business opportunities in mitigating and adapting to this risk. For example, the shift from conventional thermal power to offshore wind and solar power generation will lead to corporate capital investment, increased demand for lending, and investment opportunities in support of transition.

The Japanese government's Green Transformation (GX) Basic Policy (approved by the Cabinet in February 2023) calls for addressing climate change, shifting to energy conservation, decarbonized power sources, and GX investment utilizing GX Transition Bonds. These measures are essential for achieving a stable energy supply and economic growth. The policy includes ¥150 trillion in public and private investment over the next 10 years.

In terms of global trends, the 28th meeting of the Conference of the Parties (COP28) to the UNFCCC, held in Dubai in 2023, declared a goal to triple renewable energy generation capacity and double energy efficiency. Expectations are high for private sector financing to help solve global challenges.

Business opportunities will also emerge in financing, etc., from the perspective of biodiversity. Target 19 of the GBF proclaims the need to mobilize at least US$200 billion per year as of 2030* to fund Nature Positive.

We expect a short-, medium-, and long-term demand for funds to transition to decarbonization, to develop technology, and to maintain/restore biodiversity, and we are working to capture the business opportunities arising from this demand.

*Ministry of the Environment　Kunming-Montreal Global Biodiversity Framework（provisional translation）
https://www.env.go.jp/content/000107439.pdf

Participation in Initiatives

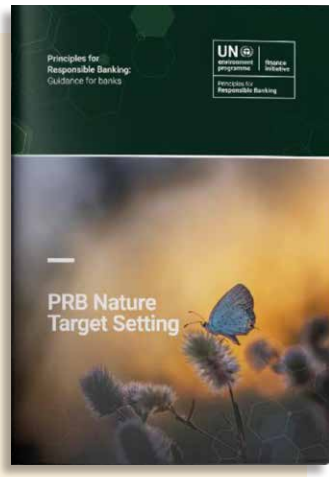
We recognize that addressing climate and nature-related risks and opportunities requires engagement in discussions and shaping practices in partnership with a wide range of stakeholders. The Bank participates in initiatives and frameworks ranging from high-level commitments to measurement and visualization, goal setting, engagement, and disclosure.

Column

UNEP FI Participation in Nature-Related Working Groups

The Principles for Responsible Banking (PRB), administered by the United Nations Environment Programme Finance Initiative (UNEP FI), issued guidance* on setting nature sector targets for banks in November 2023. The Bank participates in three working groups established by the PRB for nature-related goal setting, scenario analysis, and disclosures consistent with TCFD/TNFD. Our participation contributes to the formation of practices in this area in the banking industry.

* UNEP FI https://www.unepfi.org/industries/banking/nature-target-setting-guidance/



Industry, Government, and Academia Collaborations and Partnerships

Sustainable Food Systems

Participation in the Public-Private Roundtable for Sustainable Food Production and Consumption (Ministry of Agriculture, Forestry and Fisheries)

In response to international developments related to sustainable food systems, we participate in this roundtable established by the Ministry of Agriculture, Forestry and Fisheries. The roundtable serves as a forum for public and private sector stakeholders to engage in dialogue, share information, and gain awareness of specific changes suited to our circumstances in Japan.

Launch of the Collaboration Project for the Conversion to Sustainable Food Systems (University of Tokyo)

With the support of Ministry of Agriculture, Forestry and Fisheries, The Norinchukin Bank and the Global Commons Center of the University of Tokyo launched a project to identify ways to make Japan's food system more sustainable.

Joint Research: Gastronomic Geopolitics (Tohoku University)

We entered into a joint research agreement on gastronomic geopolitics (selected by the JST Program on Open Innovation Platforms for Industry-academia Co-creation (COI-NEXT)) to green food-related supply chains and consumer activities in consideration of climate and nature.

Mitigating and Adapting to Climate Change

Participation in the Advisory Council on Scenario Data for Climate Change Risk and Opportunity Assessment (Ministry of the Environment) with scenario- and data-related organizations

We participate in council meetings for TCFD-based climate-related scenario data providers and users to discuss mutual needs and issues, looking for the direction of future action.

Participation in the Roundtable on Physical Risk Assessments in Climate-Related Disclosures (Ministry of Land, Infrastructure, Transport and Tourism)

We participate in roundtables to discuss ways to assess physical risks in private corporate climate-related disclosures, particularly with respect to flooding.

Participation in the GX League (Ministry of Economy, Trade and Industry)

We participated in the GX League, which was established to discuss and engage together with government-academia-finance players who taking on the challenges of GX. Companies taking on the challenge of carbon neutrality as quickly as possible participate in the GX League, driving transformations of entire economic and social systems that impact companies and stakeholders.

Natural Capital - Biodiversity

Participation in the Nature Positive Economy Study Group (Ministry of the Environment)

We participate in this ministry study group that includes public and private-sector entities, conducting discussions on natural capital, biodiversity, and corporate management. The study group also examines issues related to achieving nature positive (i.e., stopping the loss of biodiversity and guiding biodiversity to recovery).

Activities as a TNFD Taskforce member (TNFD)

The Norinchukin Bank Executive Advisor HIDESHIMA Hirotaka contributes to the development and communication of this global disclosure framework as a member of the TNFD Task Force. As a co-convenor of the TNFD Consultation Group - Japan ("TNFD Japan Council"), the Bank spreads an awareness and understanding of TNFD in Japan.

We participate actively in the policy advocacy activities of the Japanese Bankers Association, Institute of International Finance (IIF), and other financial industry associations to which we belong. We also provide input for international standards-setting and rulemaking processes.

Column

Gastronomic Geopolitics: Collaborative Research (Tohoku University)

We collaborate actively with academia in our commitment to strengthening resilience in the food and agriculture value chain. In November 2023, we signed a joint research agreement related to the formal adoption by the JST Program on Open Innovation Platforms for Industry-academia Co-creation (COI-NEXT) of a project to foster the green job market based on gastronomic geopolitics. The project leader is Professor MATSUBAE Kazuyo of the Graduate School of Environmental Studies, Tohoku University.

This industry-academia collaboration aims to green the food-related industrial supply chain and shift consumer behaviors toward environmentally conscious action. Achieving the objectives of the project will require the participation of a variety of players in making the shift toward a more upstream environmental consciousness, conducting incentive design, and appealing to consumers with greater accurately. The Bank leverages our network as a cooperative financial institution founded in the agriculture, fishery and forestry industries, working with companies and organizations in joint research while contributing to research verification and social implementation.

This joint research is also a way to gather feedback and verification from an academic perspective on the Bank's efforts to strengthen the resilience of food and agricultural value chains. By systematizing and organizing approaches from academic perspectives obtained through joint research, we make advancements in the Bank's food and agriculture value chain initiatives and apply these approaches and perspectives to other situations.

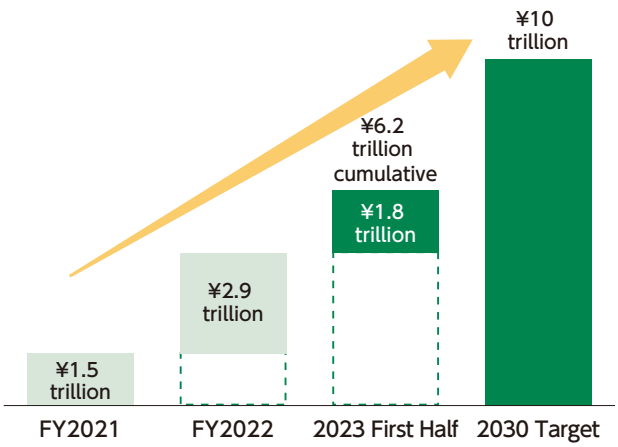
Sustainable Finance

We set a target for ¥10 trillion in new sustainable finance by fiscal 2030 as a medium- to long-term goal for sustainable environment and societies. Our goals through sustainable finance are as described below, and include loan originations conducted by Group company Norinchukin Trust & Banking Co., Ltd., external ESG fund management conducted by Norinchukin Zenkyoren Asset Management ("NZAM"), and investments and financing conducted by Norinchukin Australia Pty Limited and Norinchukin Bank Europe N.V.

Sustainable Finance at The Norinchukin Bank

- ■ Investments and loans with ESG-related third-party certification
- ■ Investments and loans integrating ESG/SDGs factors into investment strategy and decision-making
- ■ Investments and loans for environmental and social projects
- ■ Financing related to sustainability

Sustainable Finance Target (FY2021 - FY2030)



Detail of Cumulative Sustainable Finance (¥6.2 trillion)		
Investments and Loans	Market assets, etc. Domestic and overseas ESG equity funds, international institutional bonds, IG funds, etc.	¥3.8 trillion
	Project financing Financing for renewable energy, water treatment, schools, hospitals, other social projects, etc.	¥1.4 trillion
	ESG loans Green loans, sustainability-linked loans, transition loans, etc.	¥0.8 trillion
Financing	Green bonds and green deposits	¥0.3 trillion

Representative Examples of Sustainable Finance

Syndicated transition loans through JA Bank members	Formed a syndicate of JA Bank members to provide transition loans to electric power companies that are working to reduce GHG emissions based long-term strategies to achieve decarbonized societies.
Green loans for logistics companies	Provided a green loan to a cold food logistics company to finance the construction of a new environmentally friendly logistics warehouse with energy-saving features, solar panels, etc.
Investment in sustainability awareness bonds for natural disaster risk management	Invested a total of A$300 million in sustainability awareness bonds issued by the European Investment Bank. The investment in bonds contributes to safe and sustainable urban development by providing funds for infrastructure development, etc., contributing to natural disaster risk management.
Investment in sustainable development bonds for biodiversity conservation	Invested a total of A$300 million in sustainable development bonds issued by the World Bank to raise awareness of biodiversity conservation. The investment contributes to biodiversity conservation and the importance of public conservation awareness in developing countries.

The Norinchukin Bank adopted a system to assess the impact of loan project sustainability factors (factors contributing to improved sustainability) on creditworthiness, reflecting the results in loan pricing, etc. We intend to conduct feasibility assessments of sustainable finance and support our clients in decarbonization and other sustainable business practices based on a comprehensive approach to risk-return balance.

Creating Impact

The impact investing approach creates positive environmental and social impact while generating appropriate economic returns. This approach to investment has attracted increasing interest in recent years as a way to contribute direct solutions to environmental and social issues. The Bank works steadily to achieve our stated target for new sustainable finance loans. We use impact measurement and management (IMM) to visualize and quantitatively manage the impact of investment and loan activities on environmental and social issues.

Impact Investment

In collaboration with NZAM, the Bank launched an investment program in fiscal 2022 allowing for up to ¥15 billion in impact private equity fund* investments. As of March 2023, four funds have invested a total of ¥10 billion, aiming to create a positive impact on climate change, educational opportunities, healthcare and welfare, and other issues. In addition, The Norinchukin Bank and NZAM participate in the ESG Data Convergence Project, which aims to standardize ESG reporting in the private equity sector.

*A generic term for private equity funds that seek to generate economic returns while having a positive impact on the environment and society.

Column

Creating Impact Through Renewable Energy Project Financing

The Norinchukin Bank began issuing green bonds in 2021. Funds raised through green bonds are used to invest in and finance projects that contribute to environmental improvement, including renewable energy projects. Funds are also used to measure and disclose the impact created through said investments and loans*. As of March 2023, renewable energy projects using green bond funds have contributed to an annual reduction of approximately 640,000 tons of CO_2 (The Norinchukin Bank share of emissions).

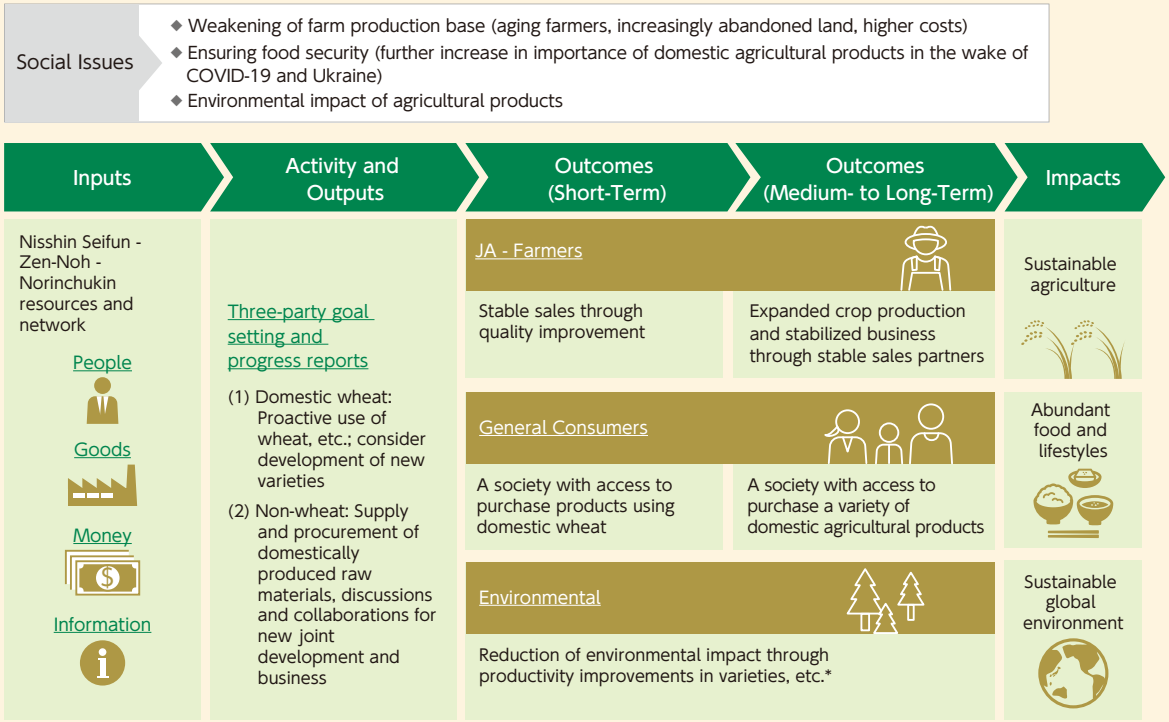
* Green Bond Information (English only)
https://www.nochubank.or.jp/en/ir/fixed_income_information/green_bond_information/

Column

Creating Impact Through Investments in Food and Agriculture Companies

National Federation of Agricultural Cooperative Associations ("Zen-Noh") and The Norinchukin Bank entered into a capital alliance with Nisshin Seifun Group Inc. holding company ("Nisshin Seifun"), acquiring common stock equivalent to approximately 1% of the Nisshin Seifun outstanding total (published November 17, 2020). Japan's agriculture sector is dealing with environmental and social issues that include such a shortage of farmers. Japan has a particularly low self-sufficiency rate for wheat, and the government is pushing a shift in cultivation to wheat from rice, increasing the cultivated area and production volume. A further issue is how to grow demand in line with this increase in production. Recognizing these issues, Zen-Noh and the Bank invested in Nisshin Seifun, which is the industry leader at 40% of the domestic flour market. The objective of this investment is to encourage production and expand demand for domestically produced wheat. The three parties discussed and established common goals related to this investment. We receive regular progress reports and have confirmed that efforts are having a gradual effect on encouraging domestic wheat product and increasing demand. According to Nisshin Seifun, the company has entered into joint development to secure a stable supply of domestic wheat and other domestic agricultural and livestock products, while extending its product lineup. Zen-Noh indicated that the organization is developing production and variety development based on demand with input from Nisshin Seifun. The Bank will continue to provide support for funds and smooth communications, encouraging the three-way efforts to resolve issues throughout the value chain.

Logic Model for Creating Environmental and Social Impact



*Increased domestic wheat productivity also means a decrease in the amount of pesticides and fertilizers used per unit of production. Therefore, higher wheat productivity leads to expected reductions in environmental impact.

Responding to Climate Change
- Commitment and Transition Plan to Net Zero by 2050

Climate

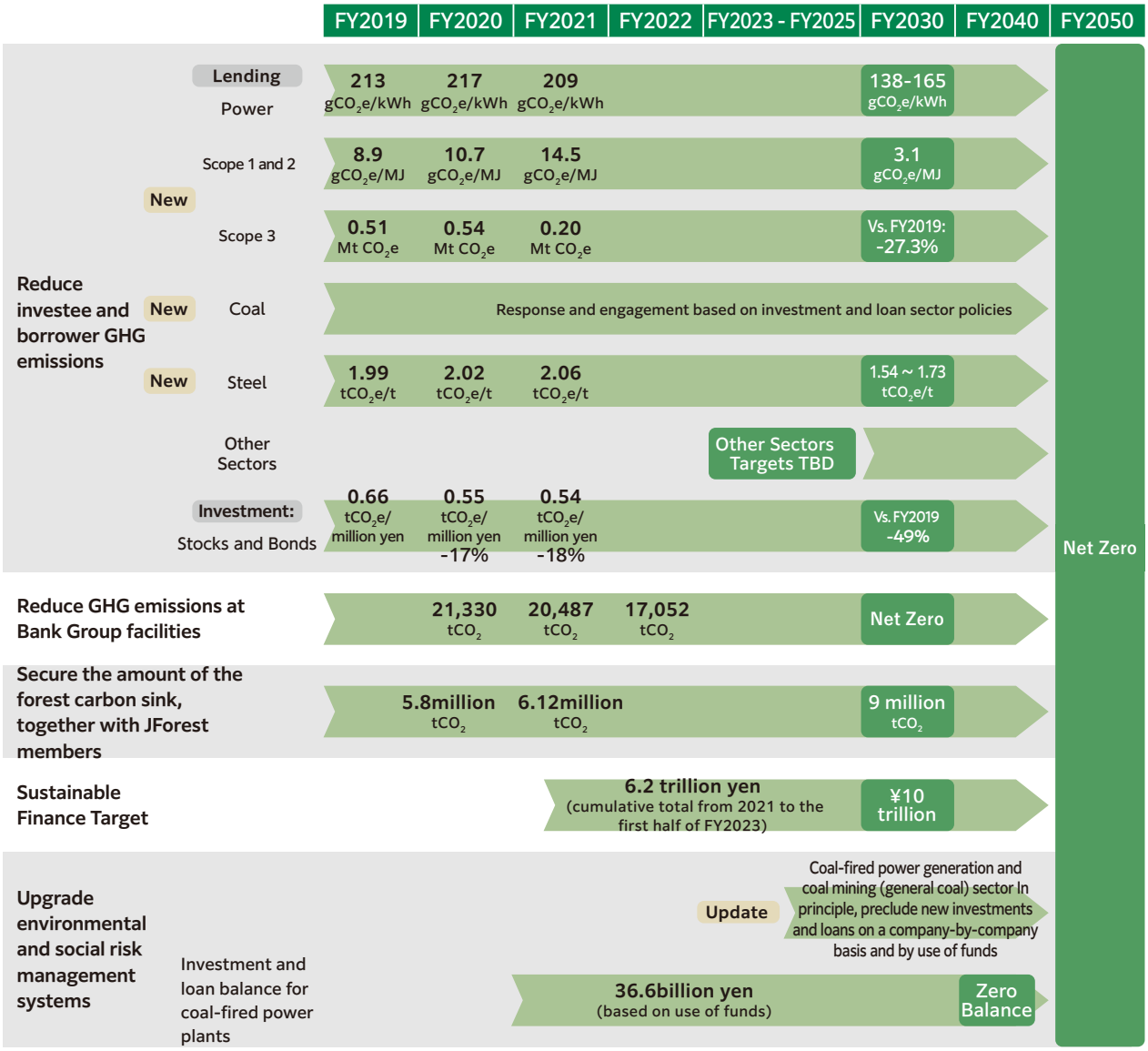
In March 2023, The Norinchukin Bank announced our Commitment to Achieving Net Zero by 2050, stating our response to increasingly severe climate change. As part of this effort, The Norinchukin Bank became a member of the Net-Zero Banking Alliance (NZBA), an international banking initiative under the umbrella of the Glasgow Financial Alliance for Net Zero (GFANZ). This initiative aims to achieve net zero greenhouse gas emissions related to investment and loan portfolios by the year 2050.

The Bank organized and systematized a series of initiatives to achieve net zero emissions by 2050 under our net zero transition plan, below. In fiscal 2023, we revised this transition plan with reference to GFANZ and other frameworks, while also incorporating expanded GHG reduction targets, etc.

Transition Plan Toward Net Zero by 2050

Foundation	**Purpose**	
	Environmental Policy	**Important Issues in Achieving Our Purpose** / **Commitment to Achieving Net Zero by 2050**
	Vision for 2030: **Harnessing the power of cooperatives and finance,** **we aspire to continue to create positive impact towards sustainable environment, society, and economy.**	
Implementation Strategy	**Promoting Sustainable Business**	**Strengthen Risk Management**
	■ Provide decarbonization solutions to investees and borrowers ■ Work with members to support and create environmental value in the agriculture, fishery and forestry industries through initiatives to reduce the environmental impact of production activities and create carbon credits	■ Address environmental and social risks based on an integrated risk management framework ■ Expanded scenario analysis
Engagement Strategy	**Engage With Investees and Borrowers**	**Collaborate With Diverse Stakeholders**
	■ Pursue initiatives based on transition plans, responses among borrowers ■ Conduct engagement according to asset class characteristics ■ Improve effectiveness and gain insight through collaborative engagement	■ Collaborate with members to solve local sustainability issues ■ Collaborate with industry, government, and academia ■ Participate in initiatives
Metrics and Targets	**Metrics and Targets for Strategy Execution**	
	■ Reduce financed GHG emissions among investees and borrowers Interim target for FY2030 toward Net Zero by 2050 (vs. FY2019) Lending: Power 138~165gCO_2e/kWh Oil and Gas Scope1-2 3.1gCO_2e/MJ; Scope3 -27.3% Coal Qualitative targets Steel 1.54~1.73tCO_2e/t Other Sectors Targets TBD Investment: 49% reduction based on economic intensity ■ Increase the forest carbon sink together with JForest members 9 million tons per year as of FY2030 ■ Reduce The Norinchukin Bank Group facility GHG emissions Net zero by FY2030 ■ Sustainable finance ¥10 trillion by FY2030 ■ Reduce investment and loans for coal-fired electric power generation to zero by FY2040	
Governance	**Transition Plan Governance Stance**	
	■ The Board of Directors approves resolutions after discussions in the Sustainability Committee. The Board of Directors and the Supervisory Committee supervise progress (the progress of major initiatives is reflected in executive and employee compensation based on management plan). ■ The chief sustainability officer oversees and directs sustainability; the CSuO collaborates with HQ/unit sustainability officers within the organization. ■ We regularly review transition plan details and progress, reporting to external stakeholders. ■ Capacity building (awareness-raising, education)	

Roadmap to Net Zero by 2050



Reduce investee and borrower GHG emissions

In line with the NZBA framework, the Bank establishes targets for high-emissions sectors across our loan portfolio. Considering the importance of the ratio of investment assets in our investment and loan portfolio, the Bank established emissions reduction targets across our investment portfolio, referencing the Net Zero Alliances framework for asset owners.

Further, we developed and implemented a tool to visualize financed emissions using BI tools. This tool improves the efficiency of progress management for GHG emission reductions at investees and borrowers. We also established a system for investment and loan front office staff to check emissions, emissions intensity, and investment and loan balances quickly for each company, fund, and investment management company.

Loan Portfolio Targets by Sector

The NZBA requires reduction targets for at least one of the nine carbon-intensive sectors (power generation, oil and gas, steel, coal, agriculture, real estate, transportation, cement, and aluminum) within 18 months of joining, and targets for all sectors within 36 months of joining. The Bank sets targets for the sectors in question based on exposure and GHG emissions, as well as risks and opportunities in each sector. We set targets for the power generation sector immediately upon joining the NZBA in March 2023. As of today, we have targets set for three additional sectors (oil and gas, coal, and steel).

Power Generation Sector

a Overview and understanding of current status

The power generation sector accounts for approximately 40%* of the world's greenhouse gas emissions by demand sector. This is an important sector readily considered the foundation of economies and societies, supporting every industry and household lifestyles. We recognize the need to consider electrification across a wide range of sectors and the prospect of a parallel increase in demand for electric power amid the expected global economic growth in developed and developing countries.

* IEA World Energy Outlook 2023 https://www.iea.org/reports/world-energy-outlook-2023

b Recognition of business opportunities and risks

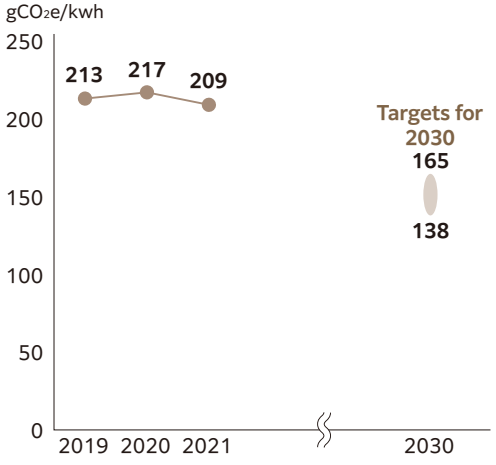
We recognize the following opportunities and risks, considering the preconditions for sector decarbonization: the appropriate use of renewable energy and nuclear power in light of Japan's energy mix, grid efficiency in the electricity distribution network, and the development of next-generation technologies using solar power, hydrogen, etc.

Opportunities	Risks
Power generation from renewable energy sources ・Finance opportunities for renewable energy development and expansion **Power generation and distribution grid efficiency** ・Finance opportunities for power grid development	**Stranded coal, oil, and gas-fired power generation facility assets** ・Risk management according to sector policies, etc. **Stranded next-generation technology development assets** ・Assess the probabilities and validity of next-generation electric power technologies

c Targets, results, and major initiatives

We monitor interim targets for fiscal 2030 toward Net Zero by 2050 as described below.

Scope		Power generation business Scope 1	Actual
Assets		Loans to the power generation sector + Project financing	
Target	Metric	Physical intensity (gCO_2e/kWh) *GHG (CO_2equivalent) emissions (g) per 1kw of electricity generated	
	Formula	$\sum \frac{\text{Amount of the Bank's loans to each company}}{\text{Total Bank loans to the power generation sector}} \times$ Emissions intensity of each company	
	Target	138-165gCO_2e/kw	
Base Year		FY2019 (March 2020) *Temporary GHG emission reductions due to the impact of COVID-19, etc., taken into account	Major Initiative
Scenario		IEA World Energy Outlook 2021, 2022 NZE *Higher end of target range consistent with 2022, lower end consistent with 2021 net zero scenario	
Data Source		Borrower disclosure data, CDP, etc.	



- Ongoing dialogue (engagement) on investee and borrower transition and capital investment plans toward net zero
- Front and middle coordinate to analyze the sector, formulating and implementing response policies
- Appropriate handling of investments and loans for renewable energy through project financing, etc.

Oil and Gas Sector

a Overview and understanding of current status

The oil and gas sector accounts for approximately 50%* of the world's CO_2emissions by energy source, making the effort toward net-zero emissions crucial for this sector. At the same time, oil and gas are fundamental energy sources for our economies and societies. We recognize the importance of balancing the reduction of greenhouse gas emissions in the oil and gas sector with the transition to low-carbon energy, while accepting the need for stable supply due to increased geopolitical risks.

* IEA World Energy Outlook 2023 https://www.iea.org/reports/world-energy-outlook-2023

b Recognition of business opportunities and risks

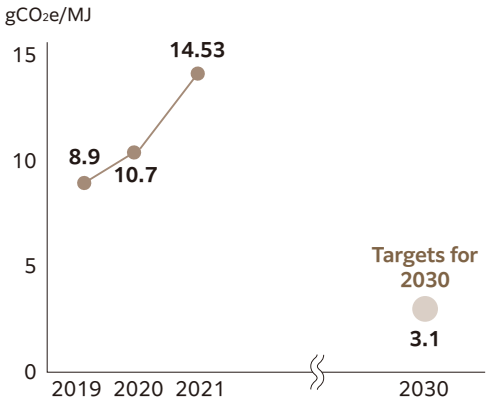
We recognize the following opportunities and risks, considering the preconditions for sector decarbonization: the installation of equipment to improve the efficiency of existing oil and gas production, alternative energy sources such as hydrogen and ammonia, and the development of carbon dioxide capture, utilization, and storage (CCUS) and other new technologies for carbon reduction.

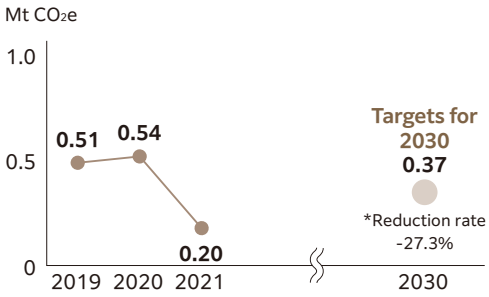
Opportunities	Risks
Decarbonization across existing businesses ・Finance opportunities for equipment efficiency upgrades, CCUS, etc. Next-generation technology development ・Finance opportunities for hydrogen and ammonia supply chain development, etc.	Transition risks associated with energy conversion, etc. ・Risk management based on sector policies and credit decisions made in coordination with front and middle offices Outlook for technology trends as a basis for decarbonization ・Conduct risk management by assessing probabilities and validity related to technology development and implementation timing

c Targets, results, and major initiatives

We monitor interim targets for fiscal 2030 toward Net Zero by 2050 as described below.

Scope		Scope1, 2, and 3 of upstream production businesses (including integrated companies)	Results Scope1 and 2
Assets		Loans to the oil and gas sector + Project financing	
Target Scope 1 and 2	Metric	Physical intensity (gCO_2e/MJ) *GHG (CO_2 equivalent) emissions (g) per unit of energy (MJ) generated by oil and gas extraction	
	Formula	$\sum \frac{\text{Amount of the Bank's loans to each company}}{\text{Total Bank loans to the oil and gas sector}} \times$ Emissions intensity of each company	
	Target	$3.1gCO_2e/MJ$ *Base year actual $8.9gCO_2e/MJ$	
Target Scope3	Metric	Total ($MtCO_2e$)	Results Scope3
	Formula	$\sum \frac{\text{Amount of the Bank's loans to each company}}{\text{Total assets of each company}} \times$ Emissions of each company	
	Target	Reduction -27.3% *Base year actual $0.51MtCO_2e$	
Base Year		FY2019 (March 2020) *Temporary GHG emission reductions due to the impact of COVID-19, etc., taken into account	Major Initiative
Scenario		IEA World Energy Outlook 2023, IEA Global Methane Tracker 2022, etc.	
Data Source		Borrower disclosure data, CDP, etc.	





- Ongoing dialogue (engagement) on investee and borrower transition and capital investment plans toward net zero
- Front and middle coordinate to analyze the sector, formulating and implementing response policies

Steel Sector

a Overview and understanding of current status

In the steel sector, greenhouse gas emissions from blast furnaces are the subject of rising attention globally. In Japan, where the sector structure relies heavily on blast furnaces to meet the demand for high-grade steel in automobiles and other applications, steel accounts for up to approximately 40%* of industrial sector energy-related CO_2 emissions. Therefore, we recognize the importance of pursuing blast furnace decarbonization through technological innovations such as hydrogen reduction and related technologies for CCUS, in addition to transitioning to electric furnaces.

*Greenhouse gas emissions in FY2021 (final figures), Ministry of the Environment: https://www.env.go.jp/content/000150033.pdf

b Recognition of business opportunities and risks

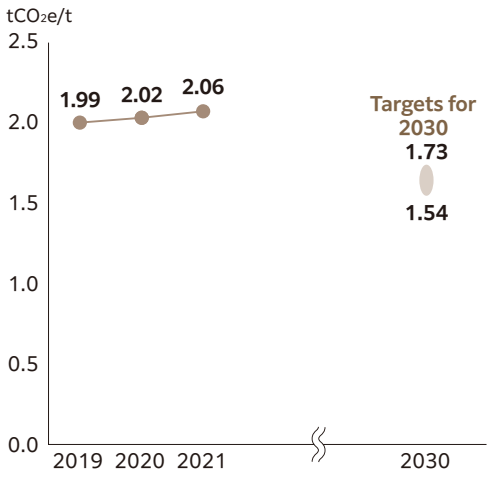
We recognize the following opportunities and risks, considering the preconditions for steel sector GHG emissions reductions: decarbonization through electric furnaces, hydrogen reduction and other technologies related to blast furnaces, green steel, etc.

Opportunities	Risks
Decarbonized blast furnaces ・Finance opportunities for direct reduction, hydrogen reduction, etc. Electric furnaces ・Finance opportunities for the conversion to electric furnaces capable of producing high-grade steel	Outlook for technology trends as a basis for decarbonization ・Risk management by assessing the probability and validity of technology development and implementation timing Stranded blast furnace facility assets ・Note that blast furnace facilities may become stranded assets due to a conversion to electric furnaces

c Targets, results, and major initiatives

We monitor interim targets for fiscal 2030 toward Net Zero by 2050 as described below.

Scope		Scope1 and 2 of crude steel production (blast furnaces, electric furnaces)	Actual
Assets		Loans to the steel sector + Project financing	
Target	Metric	Physical intensity (tCO_2e/t) *GHG (CO_2equivalent) emissions (t) per ton of crude steel produced	
	Formula	$\sum \frac{\text{Amount of the Bank's loans to each company}}{\text{Total Bank loans to the steel sector}} \times$ Emissions intensity of each company	
	Target	1.54-1.73tCO_2e/t	
Base Year		FY2019 (March 2020) *Temporary GHG emission reductions due to the impact of COVID-19, etc., taken into account	Major Initiative
Scenario		Financing Client Roadmap Mission Possible Partnership (MPP) Technology Moratorium (TM) Scenario *Lower limit of target range consistent with 1.5°C	
Data Source		Borrower disclosure data, CDP, etc.	



- Ongoing dialogue (engagement) on investee and borrower transition and capital investment plans toward net zero
- Front and middle coordinate to analyze the sector, formulating and implementing response policies

Coal sector

a Overview and understanding of current status

The coal sector has become a worldwide focus as a major driver of greenhouse gas emissions The need to reduce the use of so-called thermal coal throughout the world, both in developed and developing countries, is urgent. At the same time, we expect a certain level of demand for Metallurgical coal to continue in the future based on the importance of this coal in the value chain and supply chain. We also recognize the need to work in tandem with the steel and other closely related sectors.

b Recognition of business opportunities and risks

We recognize that the coal sector is exposed to very high transition risk. The Norinchukin Bank has no exposure to thermal coal, and we expect to maintain only slight exposure to Metallurgical coal.

Opportunities	Risks
Responding to coal sector business transformation ・Accompany entities engaged mainly in thermal and coking coal in their business transition	Pay particular attention to transition risks ・In principle, The Norinchukin Bank has no exposure to thermal coal, and we expect to maintain only slight exposure to coking coal

c Targets, results, and major initiatives

The Norinchukin Bank established the following qualitative interim targets for fiscal 2030 toward Net Zero by 2050, taking into account current exposure and other factors.

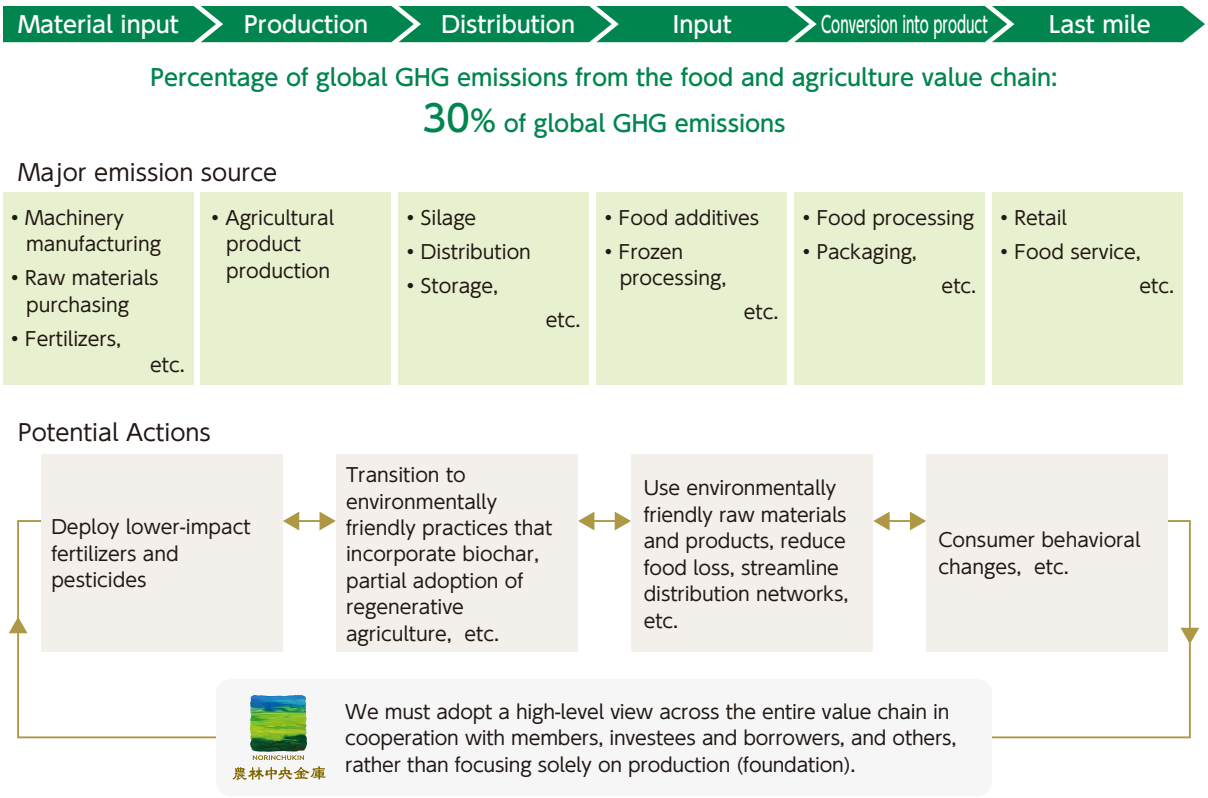
	Thermal coal	Metallurgical coal
Assumptions	•The following rules and restrictions apply to policies and measures for environmental and social considerations related to coal mining investments and loans. Coal mining involves the risk of...and stranded assets, as well as the risk of...and negative environmental and social impacts. We also recognize the importance of the impact on the rights and health issues of indigenous peoples and communities, in addition to considerations of human rights issues, including forced labor and child labor. Based on this recognition, when considering investments and loans...to coal mining businesses, the Bank confirms the extent to which the potential customer considers environmental and social issues. In addition, The Norinchukin Bank does not invest in or finance coal mining projects in the Appalachian region of the U.S. that use the mountaintop removal method...which is one of the most environmentally damaging coal mining methods practiced. Further, the Bank does not invest in or finance mining businesses related to thermal coal.	•As the percentage of the Bank's exposure to finance clients whose main business is in Metallurgical coal is extremely small, we believe it appropriate to set targets for qualitative policies in support of transition •We understand that we must work in concert and engage with the steel sector for the transition to decarbonization for Metallurgical coal, as the steel sector interrelates with the Metallurgical coal value and supply chains
Exposure	0 *Exposure to coal mining. As of March 2024. Expected to remain at zero in the future.	Less than 0.1% of total loan portfolio *As of March 2024
Policy (Targets)	Appropriate management of policies and measures reflecting environmental and social considerations related to investments and loans; review of policies and measures in light of domestic and international trends *Ultimately, the Bank's policy will be to maintain the current exposure (zero)	Engage at least once yearly with finance clients whose primary business is Metallurgical coal; follow up on Metallurgical coal trends in the steel and other related sectors

Other Sectors

We continue to consider targets and approaches toward Net Zero by 2050 from the perspectives of investment and loan balances, GHG emissions, and other factors.

The agriculture sector is the foundation of The Norinchukin Bank's business. In this context, we recognize that the recent COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action calls for initiatives that address emissions throughout the value chain of this sector. The Norinchukin Bank continues to identify areas for target setting, taking a high-level approach to the value chain consisting of materials, production, processing, and distribution for agriculture and food products.

Overview of Issues Related to Decarbonizing and Strengthening the Resilience of the Agriculture and Food Value Chains*

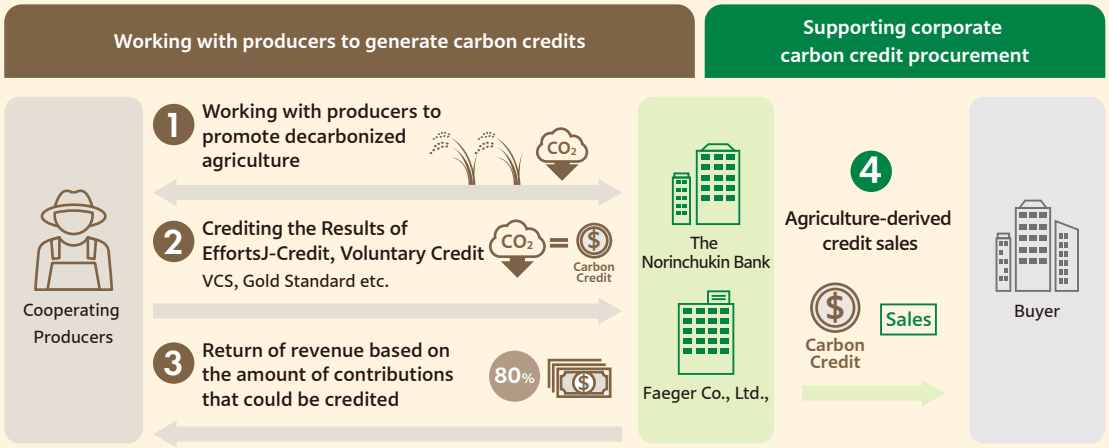


*Created with reference to the following sources: FAO: *Food Systems Account for More Than One-Third of Global Greenhouse Gas Emissions* (https://www.fao.org/newsroom/detail/Food-systems- account-for-more-than-one-third-of-global-greenhouse-gas-emissions/en)
WBCSD *An Introductory Guide for Net Zero Target Setting for Farm-Based Agricultural Emissions* (https://www.wbcsd.org/contentwbc/download/15359/224482/1)

Column

Working With Startups

The Norinchukin Bank entered into a business partnership agreement with Faeger Co., Ltd., a company developing solutions related to agriculture carbon credits. The purpose of this partnership is to support the creation of carbon credits in the agricultural sector to decarbonize the industry and increase profitability. More specifically, the partnership addresses methane reduction via mid-season rice paddy drainage and carbon credit conversion.



Investment Portfolio

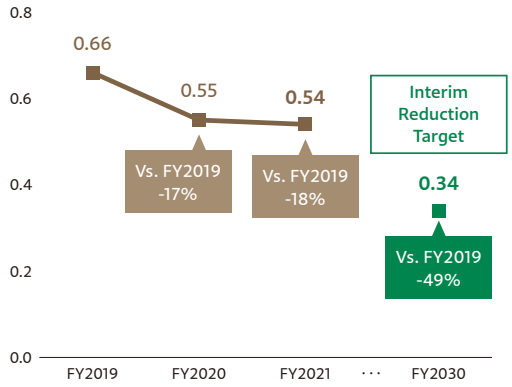
Considering the importance and ratio of investment assets in our investment and loan portfolio, we established interim targets for fiscal 2030 in our investment portfolio (stocks and bonds). These targets reference the framework for net zero initiatives related to institutional investors. We continue to expand investment asset classes targeted in light of developments in GHG measurement practices at the Bank.

Overview of Interim Reduction Targets for FY2030

Base Year	FY2019 (2020 year-end)
Investments	Stocks and bonds (FY2021 measured exposure: ¥8.6 trillion)
Metric	Economic intensity (per million yen invested)
2030 Target	-49% vs. base year
Basis for Targets	Reduction target ranges referenced by NZAOA*, etc.

*Abbreviation of Net Zero Asset Owner Alliance, a net zero alliance for institutional investors.

FY2021 Results (tCO_2 /Million Yen)



In fiscal 2023, the Bank participated in the Sovereign Debt Subcommittee of the PCAF Japan Coalition. During the meetings, we engaged in deeper discussions with participating financial institutions on how to address practical issues in sovereign debt measurement. We continue to contribute solutions to issues through activities in industry associations and other organizations.

The PCAF methodology for measuring emissions from investments in collateralized loan obligations (CLO), which account for a certain percentage of the Bank's invested assets, has yet to be finalized. We are working on our own method to measure emissions to gain a better understanding within the Bank. Specifically, we collect data on individual stocks within the assets backing the tranches we hold. We derive an attribution factor for calculations based on investment balances and financial information. We will continue to examine ways to decarbonize securitization products on an ongoing basis.

Engagement Initiatives With Investees and Borrowers

To solve environmental issues related to climate, nature, and other concerns, we must emphasize engagement with stakeholders, hold dialogues toward deeper mutual understanding, and take mutual action. We continue to improve engagement with our investees and borrowers to capture business opportunities and manage risk, aiming to achieve net zero by 2050.

During fiscal 2023, we conducted more than 100 engagements and solutions around climate change, offering support for GHG measurements and reductions, sustainable financing, and more for our borrowers, focusing mainly on top emitters among agriculture, fishery and forestry companies. We also engage with investees according to asset class.

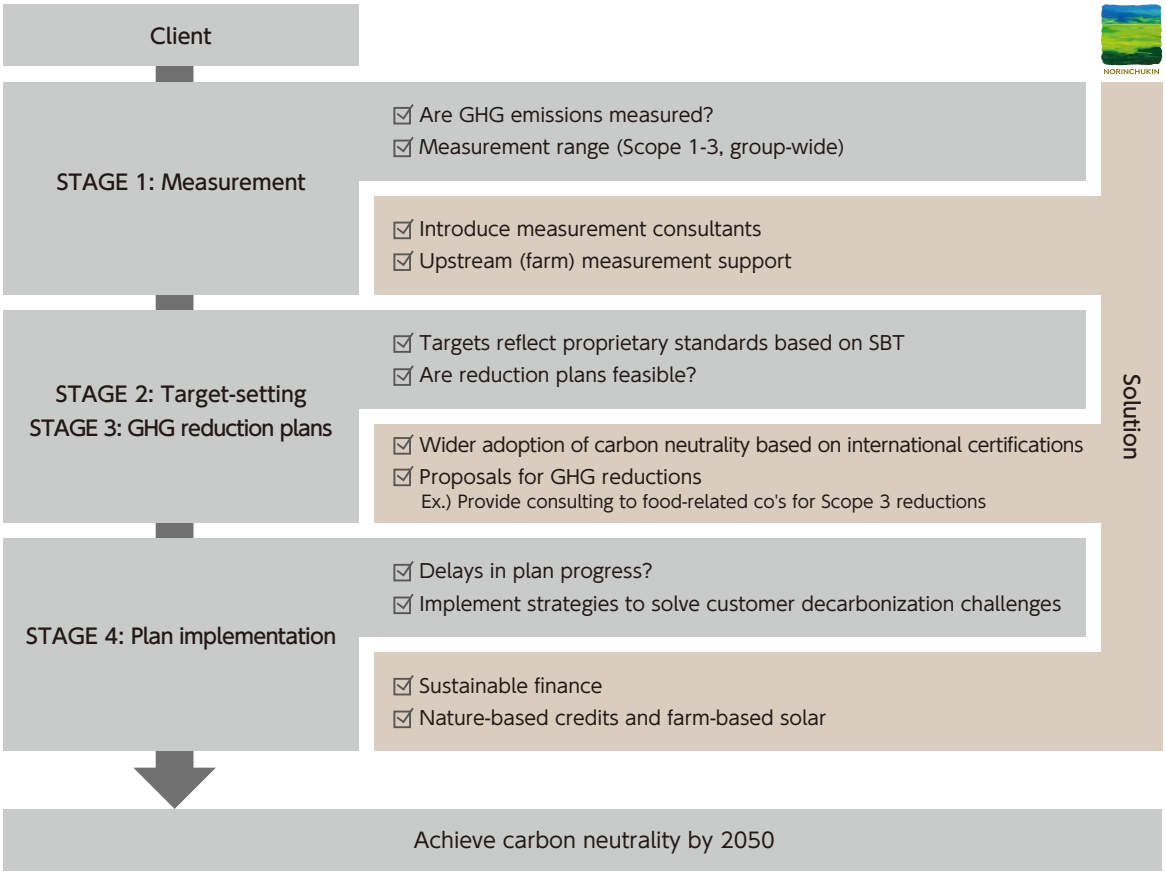
Relationship-Based Engagement With Borrowers

We engage in dialogue with our borrowers regarding their current status, issues, and responses to climate change based on our understanding, etc., of the associated risks. We develop and provide solutions based on the information obtained.

The path to achieving carbon neutrality for a company consists of four general stages: measurement, target-setting, GHG reduction plans (specific actions), and plan implementation. The Bank pursues engagement to understand at what stage the borrower is at and the challenges borrowers face. In this way, we provide specific solutions most appropriate for each borrower.

For example, for a borrower having issues with measurement and target-setting, we provide referrals to measurement and consulting firms. In March 2024, the Bank entered into Japan's first partnership with BSI Group Japan K.K., the Japanese subsidiary of The British Standards Institution ("BSI"), the world's oldest national standards association established in 1901. In the future, we plan to support the acquisition of carbon-neutral verification standards (ISO 14068, etc.) by our borrowers. For borrowers in the GHG reduction plan (specific actions) stage, we offer sustainable finance proposals that support real economic decarbonization and biodiversity restoration. We also offer intermediary services for carbon credits derived from domestic primary industries (nature). The carbon credits are not intended solely for simple offsetting, but are derived mainly from nature-based solutions (NbS) that are highly compatible with nature and the climate. These solutions include environmentally friendly agriculture, appropriate forest management, and blue carbon. We collaborate with members and others, participating from the credit formation stages to ensure high quality and traceability in providing carbon credits, seeking to foster an understanding of the significance of credits to our clients.

Food-related companies have close ties to the agriculture, fishery and forestry industries. These companies face the challenge of measuring and reducing GHG emissions at supplier production sites, which falls under Scope 3 emissions. The Norinchukin Bank works with food-related companies to analyze each company's value chain, providing solutions tailored to each company. Decarbonizing production sites among primary industries is a difficult challenge due to human and economic resource constraints. The Bank addresses this challenge through an expanding lineup of solutions and a network of JA, JF, and JForest relationships.



Column

Forming Carbon Credits With Forestry Cooperative Networks and Client Brokerage

The Bank began a project in fiscal 2023 to originate J-Credits working with forestry cooperative networks and brokering credits to our clients. In November 2023, our Fukuoka Branch brokered J-Credits to The Yamakuni River Basin Forest Association in Oita Prefecture originated the credits. The goal of this initiative was to provide a solution for reforestation cycle reconstruction after logging work. The project returned the proceeds from the sale of J-Credits created through appropriate forest management to forest owners to be used for reforestation and forest maintenance. The Norinchukin Bank provided integrated functions, supporting credit applications and acting as an intermediary for sales to the client, Saibugas Co., Ltd. This initiative helps fulfill the multifunctional role of forests, including CO_2 absorption and water source recharge, through appropriate forest and forestry cycles.

Collaborating With Outside Parties to Deliver and Highlight the Diverse Values of Carbon Credits

Experts expect carbon credits derived from NbS to reduce emissions, absorb carbon, and have other synergistic effects (co-benefits), including preserving ecosystems and strengthening the management base of agriculture, fishery and forestry companies. Highlighting the value of carbon credits in terms of co-benefits is one of the essential elements in the future development of a market for carbon credits and active purchasing.

The Natural Capital Credit Consortium (NCCC) is a general incorporated association that aims to mainstream nature-based solutions toward decarbonizing societies. The NCCC creates and promotes carbon credits focused on nature, including forests, agricultural land, and marine resources. The Bank began participating in the NCCC in 2023. In collaboration with Group think tank Norinchukin Research Institute, the Bank contributes to the formation of a carbon credit market that reflects the multifaceted value of nature through the activities of the NCCC.

Engagement as a Global Institutional Investor

The Norinchukin Bank invests the majority of our investment portfolio indirectly through funds. Accordingly, we view fund asset management companies as our primary engagement partners. More specifically, we added ESG considerations of climate and nature-related issues to the annual questionnaires we send to asset management companies as part of our due diligence. These questionnaires are part of our all-inclusive approach to confirming ESG initiatives and plans for engagement with portfolio companies on the part of asset management companies. We hold in-depth dialogues with European asset management companies to change current benchmarks to bring existing funds into compliance with Article 8 of the Sustainable Finance Disclosure Regulation (SFDR; European Union disclosure rules on sustainable finance for financial institutions).

The Bank is also a member of the Asia Investor Group on Climate Change (AIGCC) and Climate Action 100+ (CA100+). These international initiatives encourage collaboration with other institutional investors to address climate change issues, and our participation is part of our commitment to collaborative engagement with portfolio companies. We also work to deepen our knowledge of best practices through global collaboration with other institutional investors, improving the effectiveness of individual engagements as we endeavor to build decarbonized societies.

Initiatives With Group Companies

Group asset management company NZAM plays an important role in the Bank's investment portfolio, and we work together to achieve net zero. NZAM announced its endorsement* of the TCFD recommendations in December 2022, and in March 2024, joined the Net Zero Asset Managers initiative (NZAMi), an international initiative of asset managers striving for net zero under the umbrella of GFANZ. NZAM is also a member of the above-mentioned CA100+, an initiative for collaborative engagement. We continue to work as a unified group to consider environmental issues across our investment activities, including responsible investment and dialogue with our investees. We also continue to endeavor to reduce the environmental impact of our business operations themselves.

*NZAM https://www.ja-asset.co.jp/company/pri/tcfd/index.html (Japanese)

Column

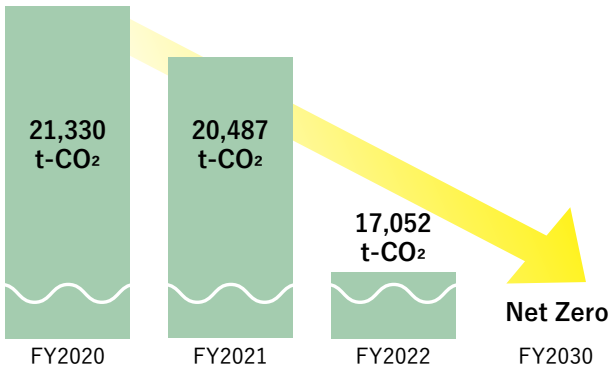
Promotion of Sustainable Investment

NZAM offers ETFs and other products designed to achieve investment returns linked to the S&P/JPX Carbon Efficient Index. The Norinchukin Bank seeks to improve corporate carbon efficiency (carbon emissions per unit of sales) and environmental disclosure through investments in these ETFs.

NZAM is also involved in activities to promote and raise awareness of the importance of sustainability investment information disclosure among operating companies. These activities include participation in a panel discussion at the *Importance of Corporate Environmental Information Disclosure and Sustainable Investing* seminar hosted by S&P Global and Japan Exchange Group in September 2023.

The Norinchukin Bank Facility GHG Emissions

We aim to achieve net-zero GHG emissions from Bank Group locations by fiscal 2030. Fiscal 2022 GHG emissions from our business locations amounted to 16,892 tCO_2. This result reflected our efforts to incorporate renewable energy and other energy conservation measures in the buildings we occupy. We continue to pursue GHG emission reductions by switching to renewable energy sources and installing LED lighting.



Secure the amount of the Forest Sink, together with JForest Members

The Norinchukin Bank established a forest carbon sink target of 9 million tCO_2 per year by fiscal 2030 based on area forecasts* derived from nationwide forestry cooperative targets.

Forests play an important role in absorbing CO_2 and conserving biodiversity. At the same time, forests face challenges that include low prices for standing timber, costs associated with reforestation, and finding willing entities to engage in forest leadership. The Bank works to solve upstream-midstream-downstream issues related to forests and forestry to support sustainable forest operations among forestry cooperative to ensure CO_2 absorption.

*Forest management, including new planting (reforestation), undercutting, clearing, thinning, and final cutting

The Norinchukin Bank and Forestry Cooperative Networks

Upstream Issues

Management intensification, integration and expansion of raw wood production

Nochu Potential Forest Productivity Fund	We established this fund in 2005 (renewed format in 2013). As of fiscal 2022, this fund has subsidized 123 projects across Japan, representing a total of more than 18,680 hectares valued at ¥2.51 billion. This fund contributes to the regeneration of degraded private-owned forests by subsidizing projects that aim to maintain the public benefits and multiple functions of forests in a sustainable manner.
Forestry Labor Safety Improvement Project	The annual death and injury rate per 1,000 workers in the forestry industry is nearly nine times the average of all other industries. Improving labor safety in this industry is an urgent matter. This project subsidizes the purchase of forestry work safety equipment, etc., which we make available to forestry cooperative networks, private businesses (contracted from networks), forestry colleges students, etc. (3,703 pieces of equipment at a cost of ¥600 million between fiscal 2015 and fiscal 2022).
Low-Cost Forest Replanting Measures	Our efforts to encourage reforestation by reducing afforestation costs is one way we address sustainable forests and forest management. In fiscal 2020, we launched the Low-Cost Forest Replanting Project in partnership with the National Federation of Forestry Owners' Cooperative Association (ZENMORIREN). The project focuses on halving the cost of growing forests, shortening the cutting cycle, and finding new distribution channels.
Forest-Derived Credit Platform	We introduced a platform at the end of March 2023 in collaboration with the National Federation of Forestry Owners' Cooperative Association, aiming to contribute to green growth of forests and forestry and carbon-neutral societies. This platform offers comprehensive support for forest-derived credits, from origination to sale.

Midstream Issues

Productivity improvement of processing and marketing

Export Support	Wood exports from Japan are on the rise (¥52.7 billion in fiscal 2022), mainly due to a growing demand for wood overseas. We support wood exports through timber intensification in cooperation with a network of forest owners' cooperatives, and we are exploring new demand for Japanese timber overseas.

Downstream Issues

Wood demand expansion and wood utilization expansion

Wood Solution Network (WSN)	We understand the need for a platform to address the issues facing the forest industry in Japan, bringing companies and organizations together to create solutions. These companies and organizations must represent the entire value chain, from upstream forest owners' cooperatives to midstream lumber, processing, and distributions companies, and, finally, to end users nearest the downstream. In 2016, The Norinchukin Bank established the Wood Solution Network to expand the utilization of wood, focusing on Japanese wood.
Spreading Wood Use Education and Expanding the Utilization of Wood Products Nationwide	As part of our efforts to expand the use of Japanese timber, we collaborate with forestry cooperatives across Japan in wood education initiatives and wood product donation activities to local governments and schools.

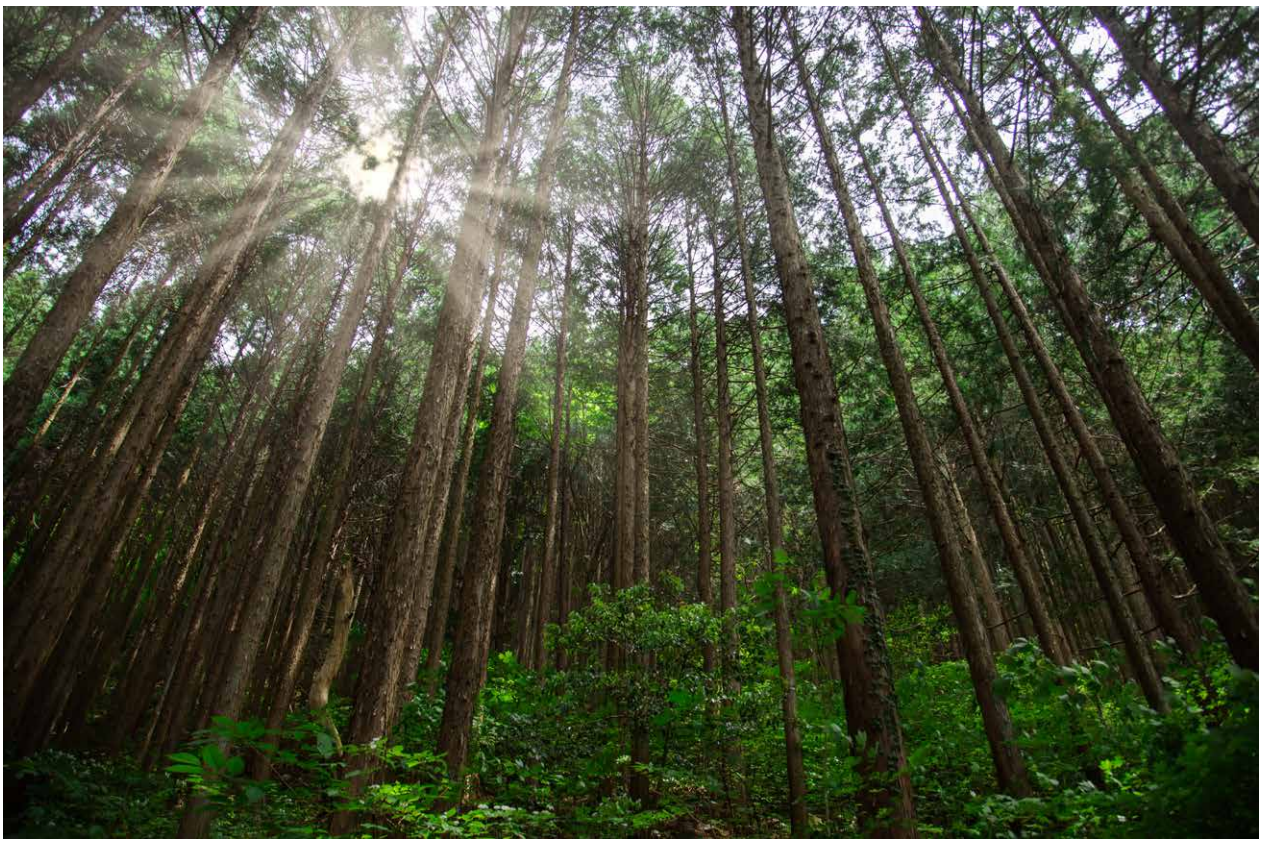
Column

Restoring Multifunctional Forests Through the Nochu Potential Forest Productivity Fund

The Norinchukin Bank established The Norinchukin Bank Reforestation Fund, more commonly known as the Nochu Potential Forest Productivity Fund. This fund is a public trust in support of projects and activities to rehabilitate devastated private forests in Japan and to help these forests fulfill multifaceted functions in a sustainable manner. We contribute to the sound cycle of forestry and forest management, working with forestry cooperatives to contribute to CO_2 absorption and ecosystem conservation.

Examples of Subsidized Projects

- Development of pristine broadleaf matebashii forests and use as firewood and wood products (Chiba Prefecture Forest Owners' Association)
- Project to restore forests damaged by disease and insects to rich diversity, ready for cyclical usage (Hanamaki City Forestry Cooperative)
- Initiative for co-existence with Asian black bears by controlling black bear bark damage and shifting certain tree species to the native Aomori Prefecture hiba and broad leaf trees (Shimokita Chiho Forestry Cooperative)



Impact and Scenario Analyses of Climate Change-Related Risk

The risks of climate change can be divided into transition risks and physical risks. Transition risks are risks that emerge in transitioning to a decarbonized society. For example, the introduction of a carbon tax levied on GHG emissions could lead to a negative financial impact on investees and borrowers that have high emissions. This, in turn, could result in credit costs for financial institutions.

Physical risks, on the other hand, are risks related to the greater intensity and frequency of extreme weather events due to climate change, as well as risks arising from long-term changes in climate patterns. Physical risks are further classified into acute risks (e.g., increased extreme weather events such as flooding), and chronic risks (e.g., the impact of prolonged high temperatures on agriculture and fisheries).

Climate Change Risks Recognized by the Bank

Risk	Subcategory	Major Risks	Time Frame
Transition risk	Policy, Law Tech., Mkts.	● Increased credit costs due to the impact of regulatory compliance on investees and borrowers business models and performance to achieve the 1.5° C target ● Increased credit costs due to changes in the supply-demand relationship for goods and services and the impact on corporate performance as markets become more decarbonization-oriented	Medium- to Long-Term
	Policy	● Changes in regulations in response to growing international concern regarding climate change	Short-term
	Reputation	● Risk of inadequate climate change efforts and information disclosure	Short-term
Physical risk	Acute	● Downturn resulting from stagnating investees and borrowers businesses due to natural disasters such as typhoons and torrential rains, as well as increasing credit costs resulting from damage to the collateral value of real estate and other assets	Short-, Medium-, and Long-Term
	Chronic	● Risk that climate change will affect land use, productivity of primary industries, etc. ● Impact on business continuity due to damage to the Bank's assets caused by extreme weather	

● Climate Change-Related Risk Assessment by Sector

Assessment of transition risks*

Sector	2030			2040			2050		
	Japan	EU	US	Japan	EU	US	Japan	EU	US
Power									
Oil-gas-coal									
Chemicals									
Metal and mining									
Food and agriculture									
Beverages									
Railroad									
Land transport									
Marine transport									

Physical risk assessment*

Sector	2030			2040			2050		
	Japan	EU	US	Japan	EU	US	Japan	EU	US
Chemicals									
Real estate management and development									
Real estate-related finance									
Insurance									
Paper products and forest products									
Food and agriculture									
Beverages									
Metal and mining									
Electricity									
Oil-gas-coal									
Railroad									

*Transition risks are assessed based on a 2°C scenario in which policy measures mitigate climate change, while physical risks are assessed based on a 4°C scenario in which global warming advances.

Scenario Analysis Overview

We conduct scenario analyses to understand the impact of climate-related risks on our credit portfolio and finances, etc.

		FY2020	FY2021	FY2022	FY2023
Transition Risk		● Scenario analysis of the power, oil-gas-coal, food and agriculture, and beverage sectors		● Added the chemical sector ● Conducted more advanced analyses based on NGFS scenarios, etc.	
Physical risk	Acute risk		● Scenario analysis of the impact of flood damage on key domestic locations of domestic borrowers and real estate collateral pledged by the Bank	● Added key overseas offices of the borrower and the Bank Group's own offices	
	Chronic risk		● Scenario analysis of income change rates in the agricultural sector (rice and livestock)	● Added fishery sector	

Scenario Analysis of Transition Risk

Based on risk analysis of climate change by sector, we selected the high-risk power, oil-gas-coal and chemical sectors as well as the food and agriculture and beverages sectors, which form the food and agricultural value chains. We conducted scenario analysis to evaluate the medium- and long-term changes in credit costs caused by the progress of decarbonization.

Scenarios analyzed include the Net Zero2050 scenario published by the Network for Greening the Financial System (NGFS), as well as scenarios published by the leading International Energy Agency (IEA) and the Food and Agriculture Organization of the United Nations (FAO).

Our analysis was based on the method published by the pilot project led by the United Nations Environment Program Finance Initiative (UNEP FI) with the objective of discussing and developing methods for climate-related financial information disclosure in the banking industry. See the Appendix for details.

Transition Risk Scenario Analysis Overview

Step 1

We selected sectors and clients for analysis based on the climate-related risk assessment results and the Bank's investment and financing portfolio. We then prepared individual company data and external scenario data (see right).

■ Base year data for individual companies
■ External scenario data

Step 2

Based on the data from Step 1, we conducted an analysis using the quantitative transition risk model.*1

*1 Model based on UNEP-FI's Pilot Project on TCFD scenario analysis in banks

■ Quantitative transition risk model analysis

Step 3

In this step, we conducted an analysis of the medium- to long-term financial condition of each target company. Our calculations reflected the level of net sales, expenses, investments, etc.*2

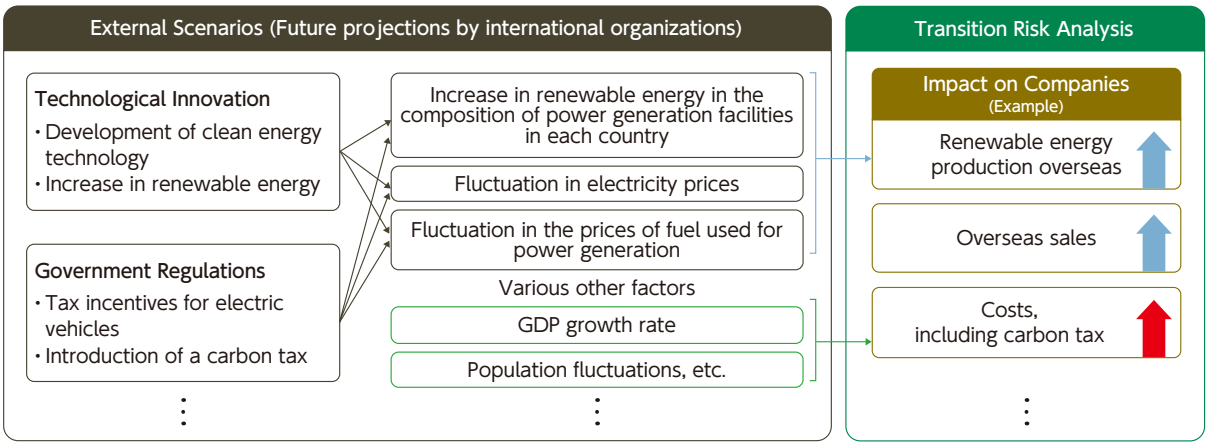
*2 The term of the analysis differs depends on the target sector. We analyzed energy-related sectors through 2042, which is in line with the period for which selected scenario data are provided. We analyzed other sectors through 2050.

■ Forecast of the financial condition of each company, reflecting scenarios

Six-Way Scenario Analysis

	Dynamic Approach (An approach reflecting new capital investments in response to market demand)	Static Approach (An approach reflecting the status quo without additional capital investment)
Current Policies (a scenario that assumes that only policies currently in place will be retained)	Current Policies × Dynamic	Current Policies × Static
Delayed Transition (Scenario in which annual GHG emissions do not decline by 2030, followed by strong emissions reduction policies)	Delayed Transition × Dynamic	Delayed Transition × Static
Net Zero 2050 (a scenario that limits global warming to 1.5°C through rigorous climate policy and technological innovation, achieving net zero global CO_2 emissions in or around the year 2050)	Net Zero 2050 × Dynamic	Net Zero 2050 × Static

Reference Analysis Overview Example (Electric power company)



Analysis Target	Selection Scenario	Complementary Scenario
Energy (Electricity, Oil-Gas-Coal)	NGFS ● Current Policies ● Delayed Transition ● Net Zero 2050	IEA World Energy Outlook 2021—SDS, STEPS ● SDS stands for Sustainable Development Scenario ● STEPS stands for Stated Policies Scenario
Food and agriculture, beverages		FAO Food and agriculture projections to 2050—TSS, BAU ● TSS stands for Towards Sustainability Scenario ● BAU stands for Business As Usual
Chemicals		IEA Energy Technology Perspectives 2022-STEP, SSDS IEA Ammonia Technology Roadmap October 2021—STEPS, SDS

Transition Risk Scenario Analysis Results

Power and oil-gas-coal sectors

In all scenarios, increased demand for renewable energy and stricter regulations on carbon emissions in various countries would result in stranded fossil fuel assets and reduced market demand. Businesses dependent on fossil fuels would experience deteriorating profits. At the same time, companies that view renewable energy as a climate change-related opportunity tend to find an increase in earnings after making capital investments.

Food and agriculture, beverage sectors

In both scenarios, the demand for food on a global level increases due to global population growth and other factors. This demand leads to increased production and increased earnings for companies engaged in business activities on a global scale. At the same time, companies operating in a particular region may see earnings increase or decrease depending on regional characteristics (changes in food culture, population increase or decrease, etc.). The results of these analyses vary from region to region.

Chemicals sector

Scenario analysis results varied depending on the chemical products manufactured and the region in which the company in question operates. Analyses using the Delayed Transition scenario (toward decarbonization) and Net Zero 2050 scenarios indicated slower economic growth. The result was, with a few exceptions, relatively lower demand for each chemical product compared with the Current Policies scenario. On the other hand, demand for hydrogen and ammonia as fuels that do not directly emit CO_2 is expected to increase. Demand for functional chemical products used as battery materials is also expected to increase with the spread of electric vehicles. However, the price shift to these products is expected to be limited.

Impact on credit portfolio

The total impact of transition risk in the two aforementioned sectors could increase the cost of credit by about 3 billion yen to 22 billion yen per year through the year 2050 (the range is the difference between the Dynamic and Static approaches). However, the impact on our credit portfolio would be limited.

Using analysis results

Based on the results of our transition risk analysis, we initiated engagement on climate change initiatives with our investees and borrowers in sectors where we identified a relatively large impact. By sharing an awareness of the issues with our investees and borrowers, we will strengthen our efforts to address climate change together and work toward creating a decarbonized society.

Scenario Analysis for Physical Risk Related to Climate Change (Acute Risk)

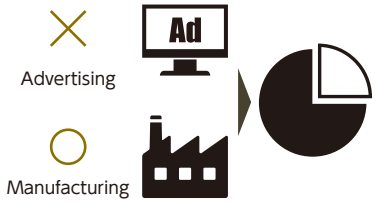
We analyzed acute risk related to flood damage, which has caused significant problems in recent years. In addition to key global locations of domestic and overseas borrowers and real estate collateral pledged to the Bank, we included the assets of Bank Group locations (buildings and equipment) in the analysis.

Our acute risk scenario analysis indicated a cumulative additional loss of about 23 billion yen (sum of credit costs and damage to the Norinchukin Bank Group assets) through the year 2100. The impact of additional losses would appear to be limited. See the Appendix for details.

Physical Risk (Acute Risk) and Scenario Analysis Overview

Step 1

Select the sector for analysis

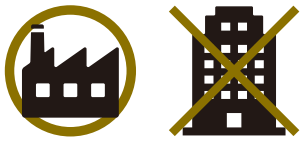


We identified sectors that are highly vulnerable to floods given the nature of their business. For example, advertising was excluded from the analysis because of limited sales loss in case of floods.

Step 2

Identify critical sites

In case of manufacturing



Plant (critical site) | Head office and branches (Not considered)

We identified critical sites that would experience a sales decline in case of flood damage for the sectors noted in Step 1. As an example, we assumed that plants are critical sites as they are the base of the manufacturing industry.

Step 3

Identify the amount of damage

We calculated the amount of damage for the critical sites specified in Step 2 as to the degree of impact from the flooding. The total amount of damage was calculated by company for all the critical sites.

Step 4

Calculate the impact on the collateral

We also calculated the amount of flood damage to the mortgage collateral that had been pledged for the Bank.

Step 5

Calculate the credit-related costs

We then analyzed the impact on the Bank based on the amount of damage calculated through the Step 3 and Step 4 processes.

Physical Risk (Acute Risk) Analysis Overview

Subject of Analysis	(1) Key domestic and overseas locations of borrowers expected to be affected by flooding (2) Real estate collateral pledged to the Bank (3) Assets at Bank Group domestic and overseas locations (buildings and fixtures)
Not Subjected to Analysis	Industries where flood damage is not expected (e.g., advertising, publishing, finance, etc.)
Analysis Scenario	IPCC RCP2.6 and RCP8.5
Measurement Results	Cumulative additional losses of approximately ¥23 billion through the year 2100 (credit costs plus damage to Bank Group assets)

Using analysis results

For this analysis, we extended the scope of scenario analysis measurement to identify the additional cumulative losses through the year 2100 for which we must prepare. We will consider analyzing and measuring the impact of hazards other than flooding associated with physical risks. These analyses will take the supply chain into account, utilizing the information related to the borrower's key domestic and overseas locations surveyed in this analysis.

In addition, we plan to practice operational risk management for the high-risk assets owned by the Norinchukin Bank Group. We intend to engage our borrowers appropriately and work with them to step up their efforts in addressing climate change.

Physical Risk (Chronic Risk) Analysis

The Norinchukin Bank is committed to achieving Net Zero by 2050 across our investees and borrowers. In conjunction, we pursue an increase in the income of farmers, fishermen and foresters as a 2030 medium- to long-term goal in support of sustainable agriculture, fishery and forestry industries and local communities. Given that the agriculture, fishery and forestry industries are vulnerable to the effects of climate change, we endeavor to analyze the impact of climate change on the incomes of participants in these industries.

For chronic risk, we selected agriculture and fisheries as sectors to analyze. These industries are important to the Bank, which serves the agriculture, fishery and forestry industries. We chose rice cultivation, livestock production (raw milk and beef cattle), and ocean fisheries (bonito) as target commodities to analyze. Our analyses addressed the impact of climate change, including increases in air and ocean surface temperatures, on producer and fisher income, as well as adaptive measures. (Our analysis addressing agriculture is the same as that disclosed in *Sustainability Report 2022* .)

This analysis estimates the income fluctuations in the 21st century (compared to the 20th century) in two scenarios. One scenario assumes no measures are taken to address rising temperatures, while the other assumes measures are taken to adapt to rising temperatures. We adopted the IPCC RCP 2.6 and RCP 8.5 scenarios (“2° C increase” and “4° C increase,” respectively) for analysis, conducting a total of four analyses.

Step 1

Estimate the impacton production volume

We analyzed the change in production volume due to climate change. We considered the impact of climate change, for example, higher air temperatures and the precipitation variations regarding rice cultivation.

Step 2

Estimate the impact on prices

We estimated the impact on product prices due to variability in quality or other factors caused by climate change.

Step 3

Provisionally estimate the impact on revenue

We analyzed the impact on revenue for producers considering the analysis in Steps 1 and 2.

Analysis method: Rate of change in production volume + Rate of change in product prices = Rate of change in revenue

The following provides a summary of the results of chronic risk analysis for the agricultural sector. The results indicate a decline in income due to the effects of climate change. However, it may be possible to achieve flat income levels through adaptive measures. See the Appendix for details.

	Scenarios	Production Output	Prices	Revenue (w/Adaptive Measures)	Revenue (w/out Adaptive Measures)
Rice cultivation	4˚C rise	-6.4%	+1.4%	-5.0%	+3.5%
	2˚C rise	+3.3%	-1.6%	+1.7%	-
Raw milk	4˚C rise	-1.1%	+0.9%	-0.1%	± 0.0%
	2˚C rise	-0.2%	+0.2%	± 0.0%	-
Beef cattle	4˚C rise	-1.2%	+0.6%	-0.6%	± 0.0%
	2˚C rise	-0.3%	+0.2%	-0.2%	-

The following provides a summary of the results of chronic risk analysis for the fisheries sector. The results indicate regional variances in income due to the effects of climate change. However, it may be possible to limit income declines through adaptive measures. See the Appendix for details.

	Scenario	Catch	Prices	Revenue (w/out Adaptive Measures)	Revenue (w/Adaptive Measures)
Ocean fishing (bonito)	4˚C rise	-9.2% to +4.7%	-0.6% to +1.3%	-8.0% to +4.0%	-7.6% to +4.0%
	2˚C rise	-9.2% to +9.5%	-1.2% to +1.3%	-8.0% to +8.1%	-6.1% to +4.0%

Our analysis includes several assumptions and hypotheses due to the many limitations in scenario analysis models for the agriculture and fisheries sectors. These limitations include 1) a lack of available methodologies established globally, 2) incomplete data, and 3) diversified and complicated impact channels. Note that impacts may differ from the actual impact on agriculture and fisheries management, as our analysis targets revenue, not revenue (i.e., the amount after deducting expenses, etc., from revenue).

Adaptation to Climate Change

In recent years, climate change has caused an increase in the severity of natural disasters around the world, including windstorms, floods, and landslides. The importance of climate change adaptation measures increases by the day. We collaborate with a variety of stakeholders in connection with climate change adaptation and reflecting scenario analyses of physical risks and finance activities. Our efforts include engagement with our investees and borrowers, as well as participation in initiatives through dialogue with the Ministry of the Environment and the Ministry of Economy, Trade and Industry.

We practice both mitigation and aspects of adaptation in our sustainable finance. As an example, we financed a seawater desalination project in the Middle East to enhance adaptive capacity in terms of water supply in a region where access to water resources is threatened by drought and other factors. Through investments in sustainability awareness bonds issued by the European Investment Bank, we provide funds for infrastructure development and other activities that contribute to flood and other natural disaster risk management. In 2022, we invested in Ac-Planta, Inc. through The Norinchukin Bank Innovation Fund. Ac-Planta conducts research, development, manufacturing, and sales of biostimulants that are resistant to drought, high temperatures, and salt damage.

In Japan, recent natural disasters have caused extensive damage to the production infrastructure of the agriculture, fishery and forestry industries. JA Bank and JF Marine Bank are working together to provide financial support for these industries, including low-interest disaster relief funds and subsidized interest on agricultural funds, facilitating the financing of these industries. The Norinchukin Bank also provides financial support through means including interest subsidies for agricultural funds.

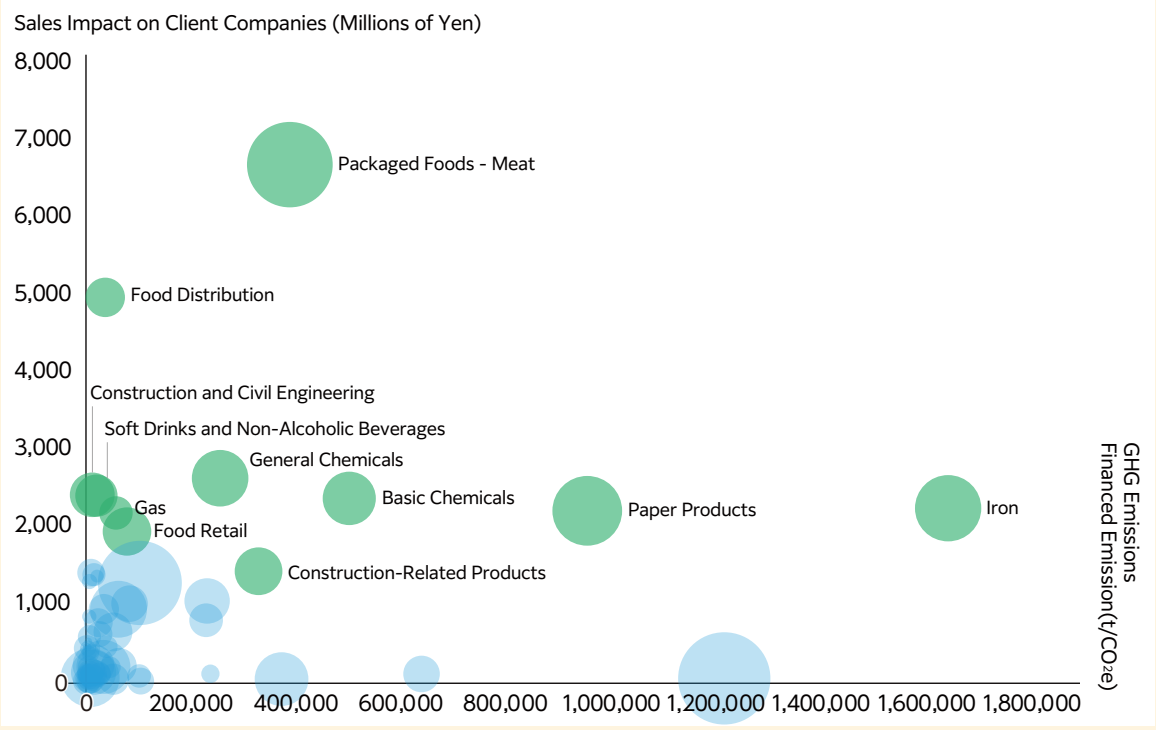
The intensifying severity and frequency of weather-related disasters have a tremendous impact on the business activities of our investees and borrowers, the agriculture, fishery and forestry industries that serve as the foundation of the Bank, and human health. Although the Bank's efforts in adaptation are far from complete, we continue to work with stakeholders to demonstrate our role as a financial institution through effective adaptation practices.

Column

Gaining an Integrated Understanding of Financed Emissions and the Physical Risks of Climate Change

The Norinchukin Bank understands the importance of being aware of the status of financed emissions and physical risks associated with our investees and borrowers. We also understand the importance of reflecting our understanding appropriately in risk management and engagement activities. We conducted an analysis by sector, creating a scatter plot to confirm the characteristics of each sector. The plot indicates the results of physical risk analysis (Y-axis: sales impact on client companies) of flood damage for key borrower locations and the financed emissions (X-axis: t/CO_2e) across our investment and loan portfolio related to operating companies.

Based on this analysis, we identified the characteristics of each sector, highlighting sectors for which it is more important to solve transition issues and sectors for which adaptive measures are required. This exercise will help us understand investee and borrower issues and provide solutions for future investments and loans.



(The size of the circle represents the Bank's relative exposure)
Source: Prepared by the Norinchukin Bank

Nature-Related Strategies and Portfolio Analysis

Nature

We identify nature-related issues (dependencies and impacts, risks and opportunities) across our portfolio through analysis based on The Norinchukin Bank business model and the value chains and locations of our investees and borrowers. We then develop and implement financial and non-financial strategies as appropriate. The analysis of dependencies, impacts, and other nature-related issues in this report covers the Bank's investment and lending activities as downstream in our value chain.

Understanding Nature-Related Opportunities

Business opportunities related to nature positive stem from business models and innovations that protect and capitalize on natural capital in three areas: (1) food, land, and ocean use; (2) infrastructure and construction; and (3) energy and mining.

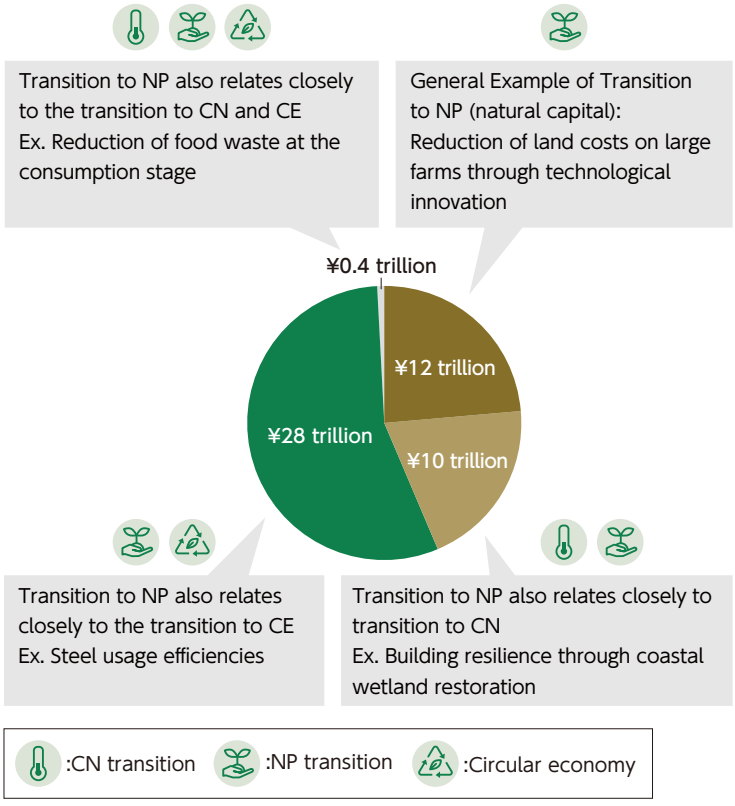
The World Economic Forum (WEF) estimates* that the size of the global nature positive-related business opportunity is approximately US$10 trillion per year. When multiplied by Japan's share of GDP (approximately 3.4%), this translates to an opportunity in Japan of approximately ¥52 trillion. Given this estimate, the business opportunities have tremendous potential—even those opportunities limited strictly to Japan. Further, the transition to a nature positive economy will lead to sustainable economic development in harmony with nature. We understand the need for diverse entities to work together to set goals, disclose information, and promote investment, innovation, etc., if we are to achieve this vision.

*World Economic Forum New Nature Economy Report II: The Future of Nature and Business
http://www3.weforum.org/docs/WEF_The_Future_Of_Nature_And_Business_2020.pdf

¥52 trillion
Share of Global Opportunity: 3.4%

¥27 trillion	Circular economy: Cars, appliances, buildings, renewable energy expansion, reconstruction of dams, etc.
¥11 trillion	Home sharing, energy-efficient buildings, waste management, sewage reuse, green roofs, etc.
¥14 trillion	Ecotourism, organic food and beverages, sustainable pesticides and fertilizers, sustainable forestry, natural fisheries management, utilization of food waste, etc.

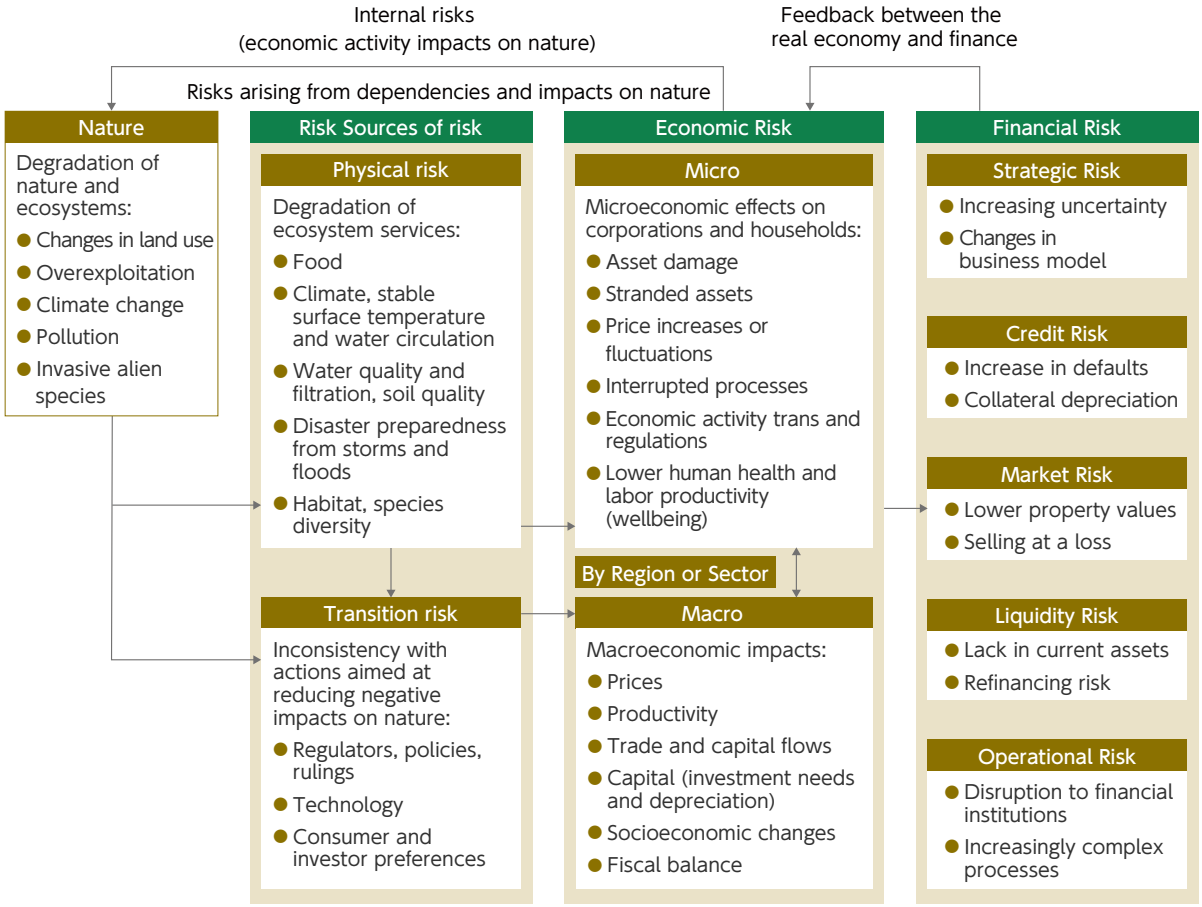
- Utilities, Energy, and Resources
- Infrastructure and Building Environment Systems
- Agriculture, Fishery and Forestry and Food-Related



Source: Prepared by The Norinchukin Bank based on *Toward the Development of a Strategy for the Transition to a Nature Positive Economy* (working title), Ministry of the Environment, Japan
Note: Calculated at ¥150 to US$1

Recognizing Nature-Related Risks

Nature-related risks refer to potential economic and financial impacts resulting from changes in the natural environment. This includes biodiversity loss and climate change. Deforestation and depleting water resources are examples of nature-related risks that damage agriculture and tourism industries, causing social unrest and conflict. Changes in the natural environment correlate to causes and effects of climate change, resulting in ecosystem service degradation (from climate change) and changes in policy and consumption behavior. In turn, these changes affect financial systems through physical and transition risks. The Norinchukin Bank recognizes that, as a financial institution, economic, social, and financial conditions of our investees and borrowers may spillover as credit, market, and strategic risks.



Source: Prepared by The Norinchukin Bank in accordance with the NGFS Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors.

Risk Category	Scenarios
Credit Risk	Credit risk refers to the risk of negative impacts to repayment capacity or creditworthiness of investees and borrowers due to changing or diminishing natural environments. For example, natural-related disasters or environmental regulations may reduce the profitability and asset values of lending companies.
Market Risk	Market risk refers to the risk that market prices and demand will fluctuate due to changing or diminishing natural environments. For example, depleting natural resources or environmental taxes may cause fluctuations in values of financial instrument or currencies.
Operational Risk	Operational risk is the risk of disruptions or delays in business activities and supply chains due to changing or diminishing natural environments. For example, natural disasters or damaged ecosystems may damage facilities and infrastructure, causing shortages of raw materials or logistics.
Liquidity Risk	Liquidity risk is the risk that financing and asset disposal will become difficult due to changing or diminishing natural environments. For example, nature-related shocks may reduce market liquidity or limit the supply of funds.
Reputation Risk	Reputation risk is the risk of social criticism or rumors resulting from making investments or loans in economic activities that may inflict negative impacts on nature. For example, offering financial products or services with extremely high negative impacts on nature may give rise to criticism from consumers and investors.
Strategy Risk	Strategy risk is the risk of revisions to strategies and business models to accommodate changing or diminishing natural environments. For example, organizations may need to develop and introduce new technologies and products to reduce the impacts and dependencies on nature.
Regulatory Risk	Regulatory risk is the risk of capital additions or fines due to noncompliance or insufficient compliance with nature-related regulations.

The following summarizes a series of efforts that we implement to address nature-related risks and opportunities and transition to a nature-positive society. The Bank will continue to consider transition plans for natural issues and develop an integrated approach to climate change.

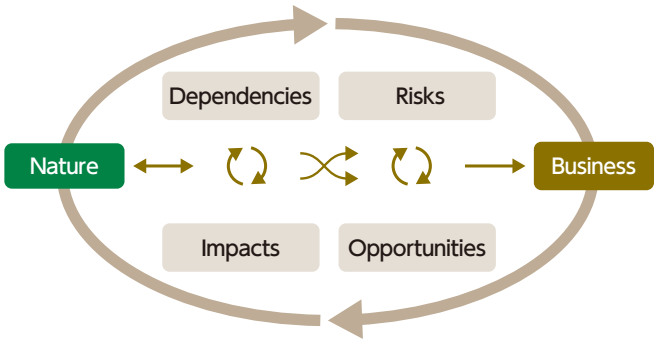
Efforts to Develop a Nature Positive Transition Plan

Factors	Major Initiatives
Foundation	Purpose Environmental Policy, Important Issues in Achieving Our Purpose, and Commitment to Net Zero by 2050 Nochu Vision 2030: Harnessing the power of cooperatives and finance, we aspire to continue to create positive impact toward sustainable environment, society, and economy
Implementation Strategy	[Enact sustainable business] ■ Provide solutions to investees and borrowers ■ Work with members to support and create environmental value in the agriculture, fishery and forestry industries through initiatives to reduce the environmental impact of production activities and create carbon credits
	[Strengthen risk management stance] ■ Address environmental and social risks based on an integrated risk management frameworks (internal ratings, sector policies for investments and loans, etc.) ■ Expand portfolio analysis (on dependencies, impacts, risks, and opportunities) • Conduct scenario analyses and analyses based on value chain locations
Engagement Strategy	[Engage with investees and borrowers] ■ Begin engagement with food and agriculture related enterprises [Future issues] Formulate engagement strategies based on analysis, etc. Expand solutions
	[Collaborate with diverse stakeholders] ■ Collaborate with members in JA Bank, JF Marine Bank, and Jforest to solve regional sustainability issues ■ Cooperate with industry, government, and academia (as a member of the TNFD Task Force and other initiatives) ■ Participate in initiatives
Metrics and Targets	■ New sustainable finance ¥10 trillion by FY2030 (to finance in response to nature-related, environmental, and social issues) [Future issues] Set nature-related targets; measure footprints
Governance	■ The chief sustainability officer oversees and directs sustainability; the CSuO collaborates with HQ/unit sustainability officers within the organization. ■ We regularly review transition plan details and progress, reporting to external stakeholders. ■ Sustainable human resources development (awareness-raising, education)

Nature-Related Portfolio Analysis

To understand our nature-related risks and opportunities, the Bank analyzed our dependencies and impacts throughout our investment and loan portfolios for business enterprises and conducted a trial scenario analysis. Analysis results confirmed the Bank dependencies and impacts are focused in the food-related and electricity sectors. The food-related sector is closely intertwined with our foundation in agriculture, fishery and forestry industries, while the electricity sector compromises a large portion of our investments and loans. The Bank also conducted a location-based analysis of investments and loans in areas deemed as having high water risk.

We recognize that analysis methodologies in identifying nature-related risks and opportunities are not fully developed. The Bank based this portfolio analysis on the methodologies proposed by the TNFD recommendations, PBAF, NGFS, and other initiatives. We also consulted advice experts in environmental economics, environmental science, life cycle impact assessment, and ecology.



Source: Prepared by the Bank based on TNFDv1.0

Summary of Investment and Loan Portfolio (Direct Operation of Investees and Borrowers)

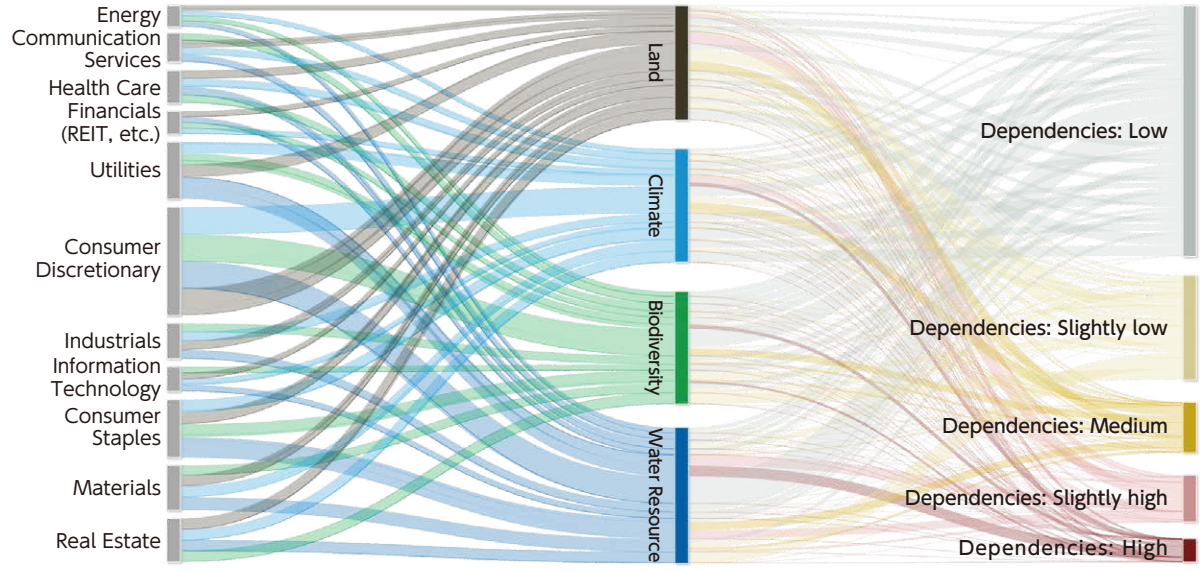
We used Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) and the Science Based Targets Network Materiality Screening Tool to understand fully the nature of our investment and loan portfolio on a sector-by-sector basis. These tools analyzed dependencies and impacts directly related to the operations in each sector (excluding value chains, business models, and location of individual companies in the sector at this point in time).

Dependencies on Nature in Our Portfolios

The Bank ascertained four dependencies categories to understand whole picture of dependencies on nature in our portfolios. These categories include land (e.g., soil quality and land stability), climate (e.g., climate regulation and pollution mitigation through the atmosphere), water (groundwater, surface water, and oceans), and biodiversity (e.g., plant and animal habitats and pollination).

Sectors in the nature-related analysis reference GICS. Funds analyzed include Bank loans, stock, bonds, and certain funds. This analysis excludes sovereign bonds, CLOs, and other securitized products in investment portfolios due to the lack of data and analysis methodology. Committed credit lines in lending are also excluded.

Sector	Sub-Sectors
Energy	Energy Equipment & Services; Oil, Gas & Consumable Fuels
Materials	Chemicals, Construction Materials, Containers & Packaging, Metals & Mining, Paper & Forest Products
Industrials	Capital Goods, Commercial & Professional Services, Transportation
Consumer Staples	Consumer Staples Distribution & Retail; Food, Beverage & Tobacco, Household & Personal Products, Agriculture
Consumer Discretionary	Automobiles & Components, Consumer Durables & Apparel
Health Care	Biotechnology, Health Care Equipment & Supplies, Health Care Providers & Services, Pharmaceuticals
Financials	Banks, Insurance, Investment Funds, Asset Management, Securities, Trading Markets
Information Technology	Communications Equipment; Electronics and Components; Semiconductors & Semiconductor Equipment; Software; Technology Hardware, Storage & Peripherals; IT Services
Communication Services	Telecommunication Services, Wireless Telecommunication Services, Cable Telecommunication Services, Media, Entertainment
Utilities	Electricity (including renewable energy), Gas, and Water
Real Estate	Real Estate Management & Development



(Note) Bar sizes on the left axis represent investment and loans amounts to the sector, while bar sizes the right axis represent exposure to each dependency level

Source: Prepared by the Bank

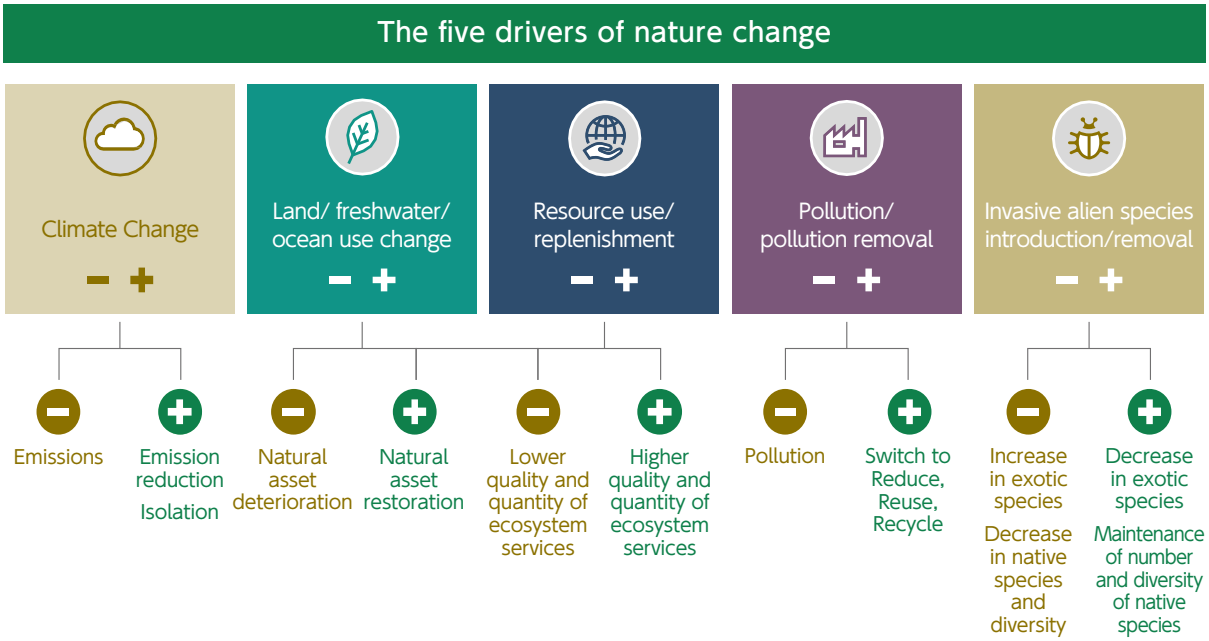
While sectors highly dependent on nature may incur financial risk through business activities if nature deteriorates, sectors may also benefit from nature and establish business models that coexist with nature. Business models that are deeply rooted in nature may reflect that the organization maintains nature through its business. In a society where the value and importance of nature is increasing, returns from the dependencies in such business models may increase.

While dependency represents a single factor in assessing nature-related risks and opportunities, we recognize the importance of analyzing location-specific risks and opportunities when assessing financial impacts on the Bank. One example of location-specific analysis includes assessing water resources at the watershed level over water intake areas.

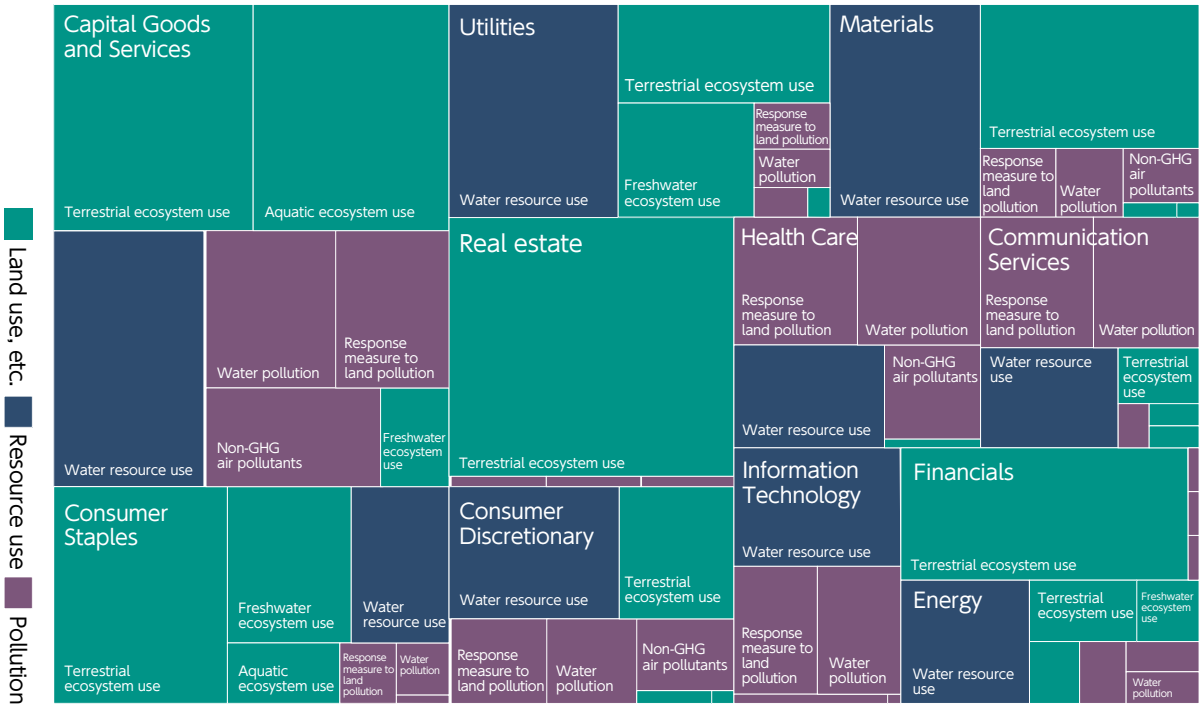
Impact on Nature in Our Portfolios

Business activities of our investees and borrowers may change (impact) natural capital and ecosystem services. Excessive negative impacts may lead to reputation risk for these clients and degradation of the natural source which found the business. Such risks may in turn lead to medium- to long-term financial risk. On the other hand, positive impacts may increase the value of nature and lead to sustainable business and positive result for stakeholders.

In the Climate and Nature Report, we analyzed our portfolios for five root causes of changes to the natural environment (impact drivers) based on the TNFD recommendations. We utilized available portfolio data to analyze impacts from investees and borrowers business.



Source: Illustration created by the Bank based on TNFDv1.0

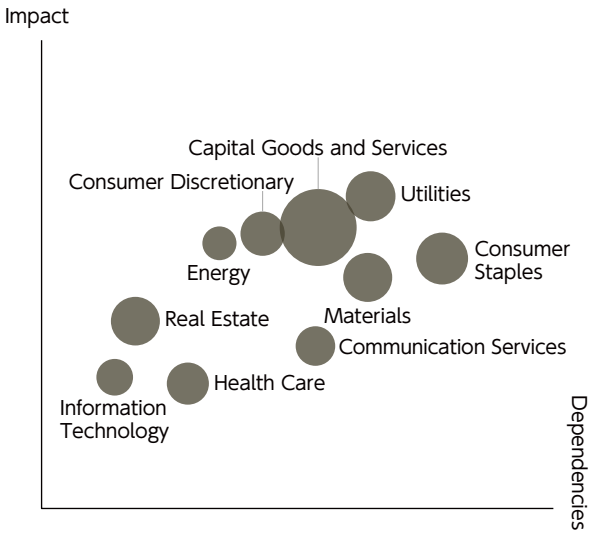


(Note) Box size is proportional to investment and loan amounts
Source: Prepared by the Bank

Impact driver on nature by sector included changes in land usage, etc., resource use, and pollution. Based on these results, we recognize the need for further detailed analysis on the impacts of changes in land usage, etc., and water resource use, as these two impact drivers ranked high in our portfolio. For more information on climate change, see the section titled Climate Strategy. Analysis excludes invasive alien species as they are considered provisional (placeholders) in the TNFD recommendations.

Overall Nature Dependencies and Impacts in Portfolios and Risk Assessment

The following figure below depicts sector-by-sector mapping to organize relationships between nature dependencies and impacts across our portfolios. The size of the circles represents investment and loan sizes.



Source: Prepared by the Bank

The Bank conducted a trial physical and transition risk assessment based on the results of the dependency and impact analysis of our investment and loan portfolio. We recognize that future physical risks are higher in sectors more dependent on natural capital (water resources and soil) and biodiversity. We also recognize that sectors with higher environmental burdens (impacts) may be exposed to future transition risks.

Low Risk High

	Key Sectors for Future Nature-Related Physical Risks			
	Japan	Asia	EU	North America
Energy				
Communication Services				
Health Care				
Financials				
Utilities				
Industrials				
Consumer Discretionary				
Information Technology				
Consumer Staples				
Materials				
Real Estate				

	Key Sectors for Future Nature-Related Transition Risks			
	Japan	Asia	EU	North America
Energy				
Communication Services				
Health Care				
Financials				
Utilities				
Industrials				
Consumer Discretionary				
Information Technology				
Consumer Staples				
Materials				
Real Estate				

(Finance sector includes REIT and other factors to clarify fund use, and excludes loans to financial institutions)
Source: Prepared by the Bank

The following table analyzes regional impacts on nature by sectors in which the Bank makes investments and loans. We identified high impact sectors in Japan and North America, the primary countries in investment and loan portfolios of the Bank.

		Changes in Land Use	Freshwater Ecosystems	Water Resource Use	Air Pollution	Water Pollution	Land Pollution
EU	Energy						
	Communication Services						
	Health Care						
	Utilities						
	Industrials						
	Consumer Discretionary						
	Information Technology						
	Consumer Staples						
	Materials						
	Real Estate						
Asia	Energy						
	Communication Services						
	Health Care						
	Utilities						
	Industrials						
	Consumer Discretionary						
	Information Technology						
	Consumer Staples						
	Materials						
	Real Estate						
Japan	Energy						
	Communication Services						
	Health Care						
	Utilities						
	Industrials						
	Consumer Discretionary						
	Information Technology						
	Consumer Staples						
	Materials						
	Real Estate						
North America	Energy						
	Communication Services						
	Health Care						
	Utilities						
	Industrials						
	Consumer Discretionary						
	Information Technology						
	Consumer Staples						
	Materials						
	Real Estate						

(Green: low impact Yellow: moderate impact Red: high impact)
Source: Prepared by the Bank.

Based on the results of our analysis of our direct operations in each sector above, we identified sectors in which we have the highest dependencies and impacts on nature. These sectors include consumer staples (food-related, agriculture, fishery and forestry industries), utilities (electricity), and materials (chemicals, metals, and mining). These sectors represent priority areas for the Bank in developing nature-related strategies and managing risks.

Analysis Including Value Chains of Investees and Borrowers

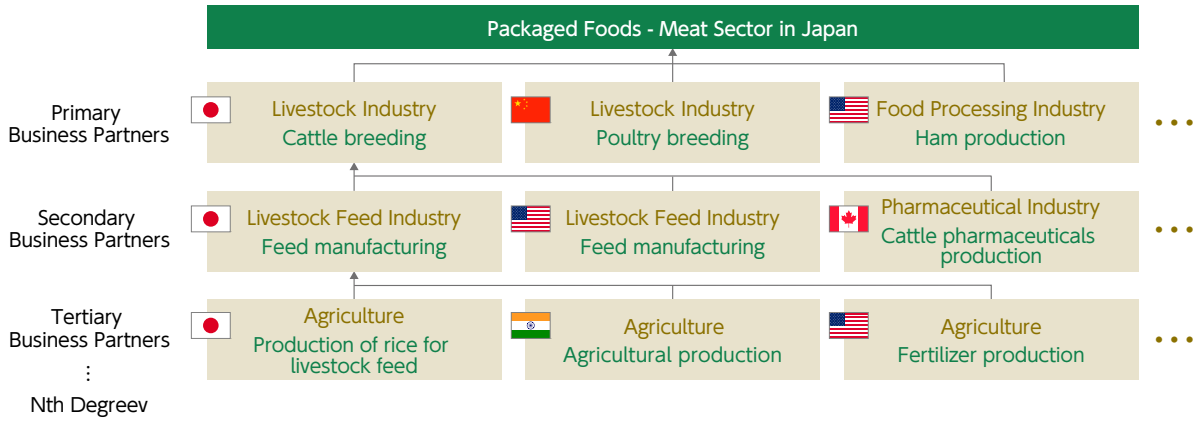
The TNFD disclosure recommendations strongly emphasize the importance of analyzing value chains. The Bank identifies nature-related dependencies and impacts in the value chains of our investees and borrowers, in addition to dependencies and impacts in their direct operations. Including value chain analysis allows for more accurate identification of nature-related risks and opportunities.

Current data is limited, as only a limited number of corporations disclosure information based on TNFD recommendations and publish nature-related indicators. In response, the Bank collaborates with various experts to analyze statistical and other secondary data on nature-related risks in value chains.

Risk Analysis in Supply Chain ESG of Investees and Borrowers

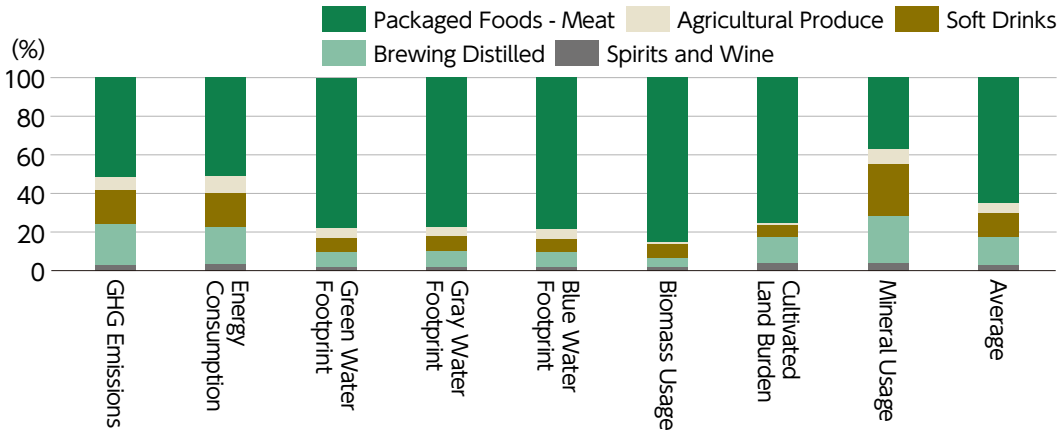
The Bank partnered with aiESG, Inc. (Representative Director: MANAGI Shunsuke, CEO: SEKI Daikichi), a start-up company of Kyusyu University, to conduct joint research on ESG risk analysis. Together, we researched ESG risk analysis that includes supply chains of investees and borrowers in our portfolios. Our analysis focused on the food-related sector (Consumer Staples sector in the GICS). We identified this sector in our direct operation analysis as having significant dependencies and impacts on nature.

aiESG leveraged its scientific knowledge and strong analytical skills to establish a methodology that reflects back on and analyzes multiple layers of a sector from downstream to upstream in a supply chain analysis using ESG indicators and statistical data. For example, in the Packaged Foods - Meat sector, this method calculates the environmental impact of the livestock industry upstream of the meat industry in addition to the agricultural sector further upstream that produces livestock feed. Utilizing this method enables the Bank to analyze the cumulative environmental impacts, ranging from the target sector to upstream in its value chain.



(Source: The Norinchukin Bank based on materials from aiESG, Inc.)

The following chart depicts the cumulative impact of five food-related sectors (Packaged Foods - Meat, Soft Drinks, Distilled Spirits and Wine, Agricultural Produce, and Brewing) on GHG emissions, water footprint (the amount of water consumed or polluted directly or indirectly throughout the life cycle, including throughout production, processing, and distribution), human rights risks, and other ESG indicators. This analysis includes upstream processes in the supply chains. Environmental risks associated with water footprint and land use may be higher for Packaged Foods - Meat than for other food-related sectors.



Source: The Norinchukin Bank based on materials from aiESG, Inc.

Impact on land
(Impact from investments and loans from the Bank in Packaged Foods - Meat sector)

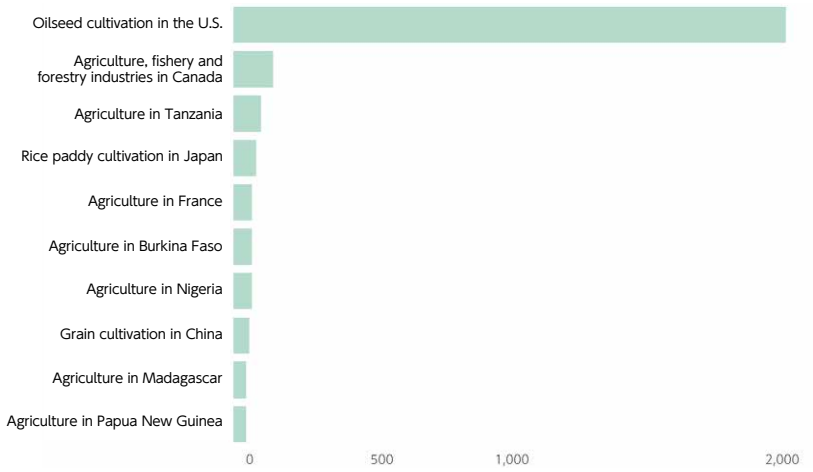
Biomass usage

Blue water footprint
(Amount of freshwater resources consumed to procure raw materials)

Green water footprint
(Amount of rainwater resources consumed to procure raw materials)

Source: The Norinchukin Bank based on materials from aiESG, Inc.

The maps above depict countries in which Bank investments and loans have significant environmental impact within the Packaged Foods - Meat sector (a sector with high environmental impact). Analyses reflects back on the supply chain to include agricultural land use, biomass usage, and water footprint. Our analysis confirmed that investments and loans to Japanese Packaged Foods - Meat processing companies impact land use and water consumption through the U.S. agricultural sector.



Horizontal axis: Blue water footprint (ESG risk burden)

Source: The Norinchukin Bank based on materials from aiESG, Inc.

Analysis of individual supply chain layers indicated that U.S. oilseed cultivation has the highest impact on freshwater resource consumption within the supply chains of our investees and borrowers in the Packaged Foods - Meat sector. This result is due to the fact that these investee and borrower supply chains largely consist of vegetable oil and livestock feed production in the U.S. that rely heavily on freshwater resources.

The blue water footprint (freshwater resources) analysis calculates water consumption indicators from meat processing, pork, and feed industries in Japan, as well as U.S. oilseed manufacturing and processing industries and agriculture (oilseed cultivation, etc.). In this way, we identify hotspots throughout entire supply chains to determine which regions and sectors have the highest impact.

We will use these results in ongoing deliberations with our investees and borrowers, focusing on establishing measures and priorities for nature positivity through methods such as encouraging Japanese feed industries to reconsider oilseed procurement methods to reduce blue water usage.

Visualizing the Supply Chain of the Japanese Meat Processing Sector

Source: aiESG, Inc.

Column

Efforts to 30by30 Target

The 30by30 target refers to Target 3 of the Kunming-Montreal Global Biodiversity Framework (GBF), aiming to conserve and manage 30% of land, waters, and seas by 2030. Areas effectively conserved outside of protected areas are referred to as Other Effective area-based Conservation Measures (OECMs). These areas are crucial to achieving the 30by30 target.

The Japanese Ministry of the Environment published a 30by30 roadmap and established the 30by30 Alliance in response to this target. Additionally, operations of natural symbiosis sites have begun under a domestic program toward OECM certification. "*Shizen kyosei*" sites are areas designated by private initiative, etc., for preserving biodiversity. Expectations are that many types of areas will be registered, including company-owned forests, company farms, reservoirs within business sites, buildings that incorporate nature, and aquatic areas that encourage seaweed bed conservation activities.

In addition to endorsing the 30by30 Alliance, the Bank supported the Yamagawa Fisheries Cooperative Association (Ibusuki City, Kagoshima Prefecture) in its application to register a cooperative-managed ocean area as a "*Shizen kyosei*" site. The target area is home to seagrass and sea turtle spawning grounds at the southern boundary, and has long served as an area for fixed net fishery and seaweed bed creation activities. This area became the first application from a fishery to be certified as a "*Shizen kyosei*" site.

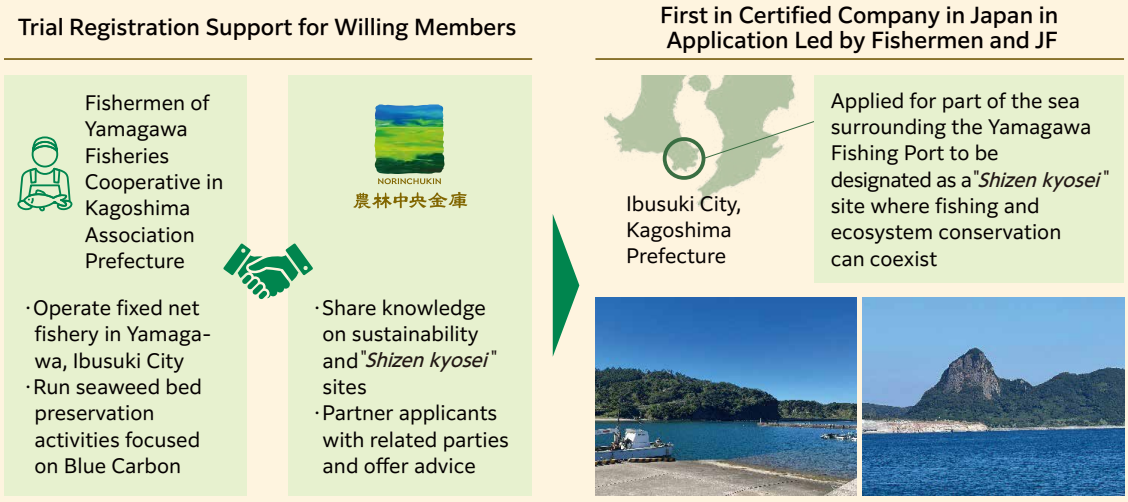


Photo Source: The Norinchukin Bank

Column

Visualizing the Relationship Between Nature and Value Chains Using Trade Statistics

Location and value chain considerations are key to analyze nature-related dependencies, impacts, risks, and opportunities. These elements must be considered separately based on the business model of the investees and borrowers. However, financial institutions face difficulties ascertaining where clients allot funds in terms of business and location, as investments and loans are often not tied to any specific business of the recipient. Analysis is therefore generalized based on sectors, requiring efforts to improve accuracy. In response, the Bank partnered with Think Nature Inc. (CEO: KUBOTA Yasuhiro) to conduct a trial analysis of the LEAP approach in financial institution portfolios.

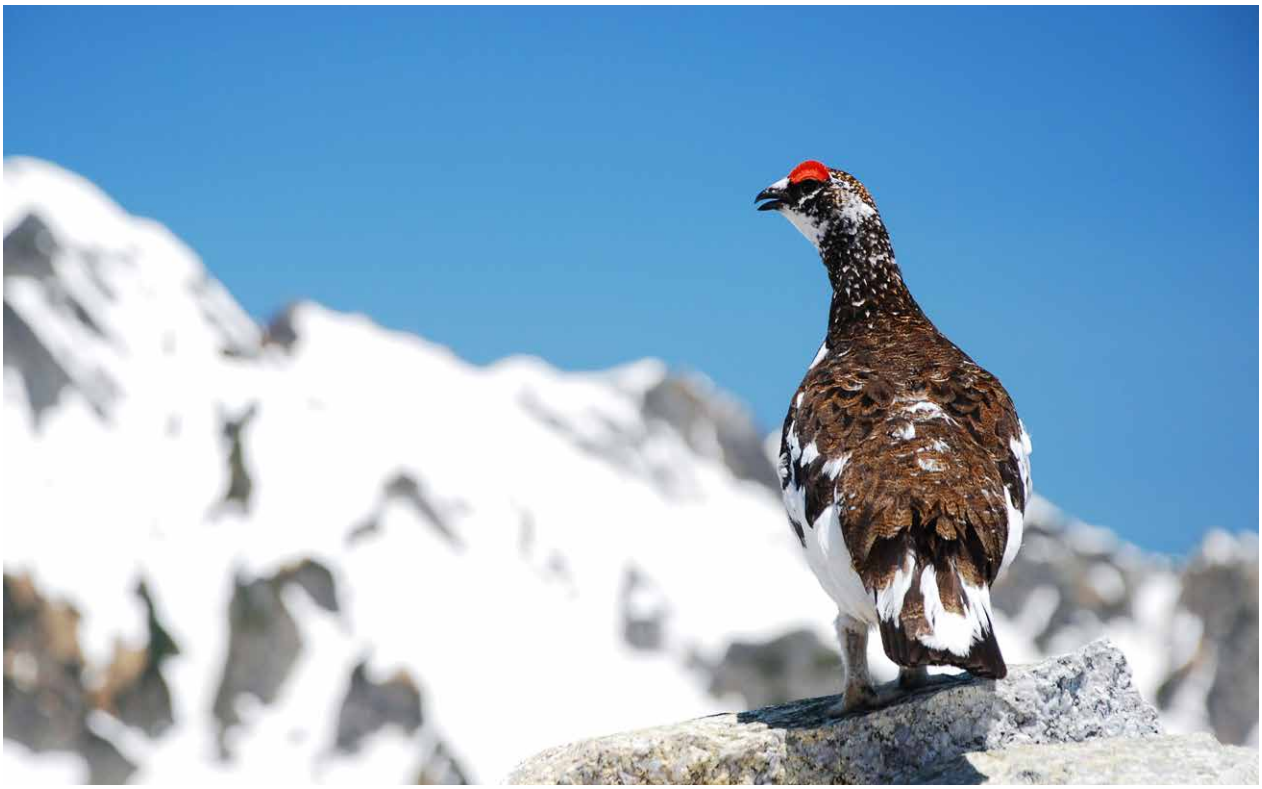
Think Nature Inc. developed unique conservation priorities* (0-1) and the Mean Species Abundance (MSA) to analyze the importance of nature in areas along the value chain. The Bank utilizes these tools understand how our investments and loans affect areas of global biodiversity importance through value chains, and which sectors we affect the most.

Our analysis based on conservation priorities confirmed that we have strong links to areas of biodiversity importance in exporting countries through trade in the metals and mining sector. On the other hand, analysis based on the Mean Species Abundance (MSA) identified the oil and gas sector as a rather important sector to the Bank.

We examined relationships of conservation priorities through trade in the Packaged Foods - Meat sector, gaining a better understanding of how the value chains of Japanese food and agriculture companies consist of trade from regions of biodiversity importance, including the United States, China, Australia, Vietnam, and Thailand.

This analysis enabled us to visualize connections to value chains in areas with low MSA or high conservation priority and identify priority areas and sectors to restore as we strive to be nature positive. Our analysis also provided important insight on the development of nature-related strategies, including the need to be aware of conservation efforts in areas with high MSA.

* Conservation priority refers to the quantification of the importance of biological diversity using big data from Think Nature. Higher priority is given to areas with higher numbers of inhabitants and endangered species. A conservation priority of 0.5 or higher indicates that the area is more important to biodiversity than the global average.



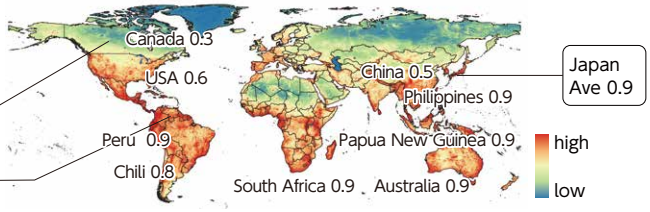
Relationship Between Nature Overseas and Bank Investments and Loans to the Japanese Packaged Foods - Meat Sector

L Locate

Conservation Priority MAP = Priority Biodiversity Areas

Areas with relatively low risk of extinction

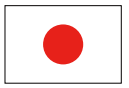
Areas with relatively high risk of extinction



*Numerical values provided for certain countries only

E Evaluate

Use trade statistics data to estimate relationships by country



Exporting Country	Relationship Score
USA	0.1641
CHN	0.1494
THA	0.0925
AUS	0.0755
CAN	0.0498
CHL	0.0395
BRA	0.0314
VNM	0.0304

Organize data mainly on commodity-related sectors obtainable and identifiable in trade statistics

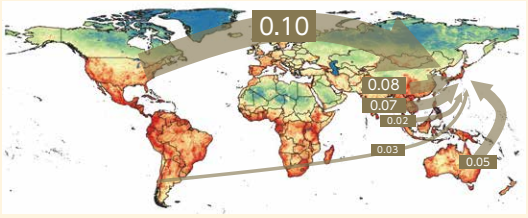
Evaluate dependencies and impacts on nature of the importing country

A Assess

Review risks and opportunities in priority sectors based on evaluation results

Industry Subgroup	Country	Conservation Priority_II GICS x National biodiversity Assessment Value	Conservation Priority_ II'PF Weighted Assessment Value
Refinement and Sale of Oil and Gas	Japan	0.62	0.17
Packaged Foods - Meat	Japan	0.69	0.14
Basic Chemicals	Japan	0.69	0.12
Various Metals and Mining	Japan	0.76	0.10
Agricultural Products and Services	Japan	0.67	0.07
Chemical Manufacture_	Japan	0.69	0.04
Aluminum	Japan	0.67	0.02
Brewing	Japan	0.71	0.01
Cargo Land Transportation	Japan	0.75	0.00

P Prepare



Source: The Norinchukin Bank based on materials from Think Nature Inc.

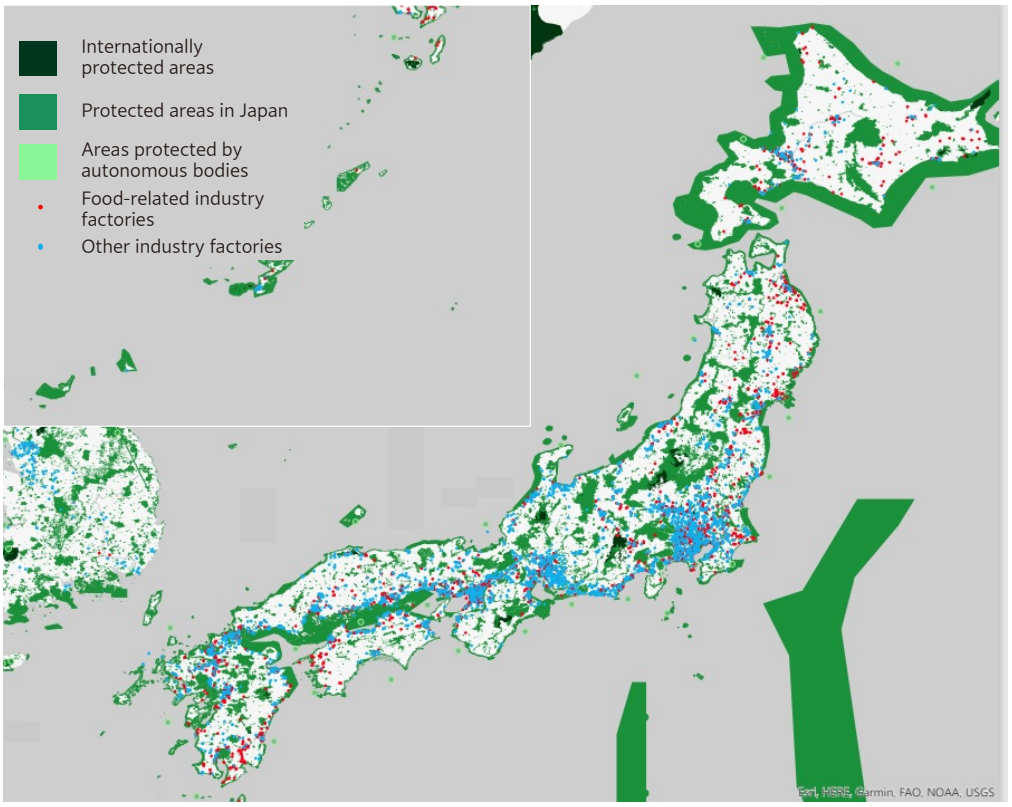
Nature-Related Risk Analysis

The Bank analyzed nature-related risks based on the location of the critical sites (e.g., factories) of our borrowers, as used in our analysis of physical risks associated with climate change (acute risk, flood risk).

Relationships in Location Between Borrowers and Protected Areas

We utilized the TNFD recommendations to map and visualize relationships between key sites of the borrowers and protected areas. Protected areas include World Heritage Sites, Ramsar Wetlands, UNESCO Eco-Parks, and other areas of natural or cultural significance.

Through this analysis, the Bank identified one client factory overlapping with a protected area. This geographic overlap lays between the Suntory Holdings SUNTORY Hakushu Distillery and the Southern Alps UNESCO Eco Park. Suntory launched operations of their factory before the park was registered in 2014. Moreover, the Suntory Group partners with Hokuto City in Yamanashi Prefecture to conduct various measures aiming to coexist with nature. Measures include those to replenish water sources, maintain forests, and educate future generations on the importance of water. In this way, the Suntory Group manages their impact on water resources, forest resources, and local ecosystems within the factory site. Given the above information, the Bank assessed that nature-related risks arising from factory exposure are limited as of present.



Source: The Norinchukin Bank using ArcGIS

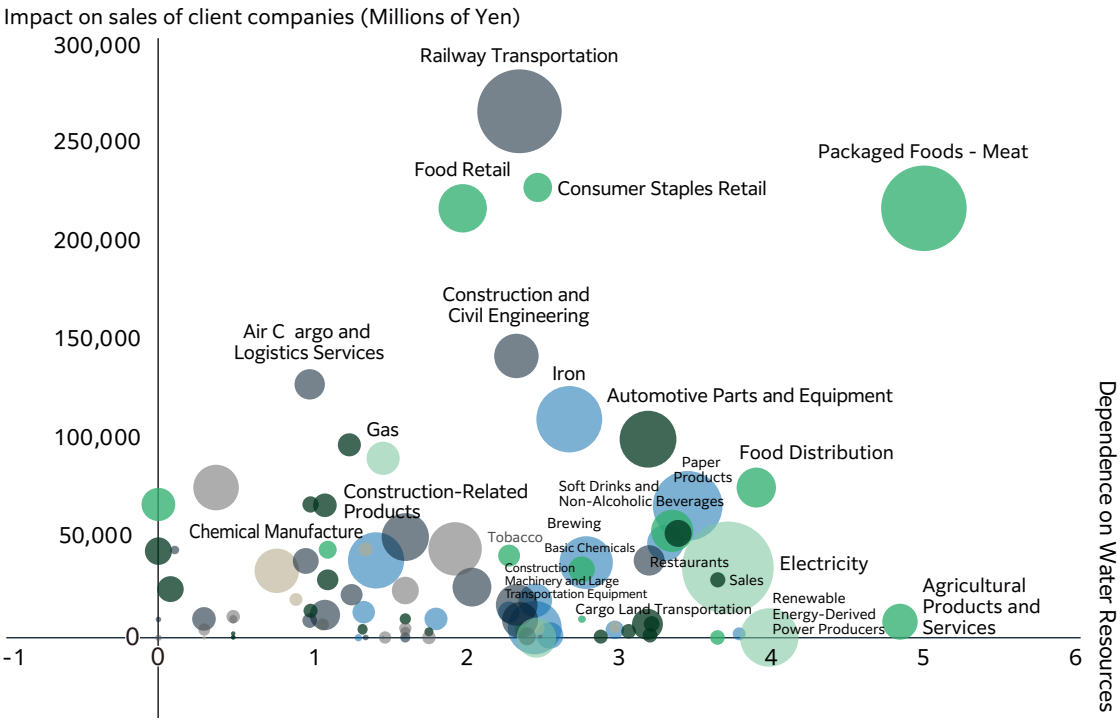
Analysis of Relationships Between Climate Change and Nature-Related Physical Risks

Climate Nature

The Bank conducted an additional analysis that took from the perspective of natural capital and biodiversity based on scenario analysis results of physical risk (acute risk) resulting from climate change.

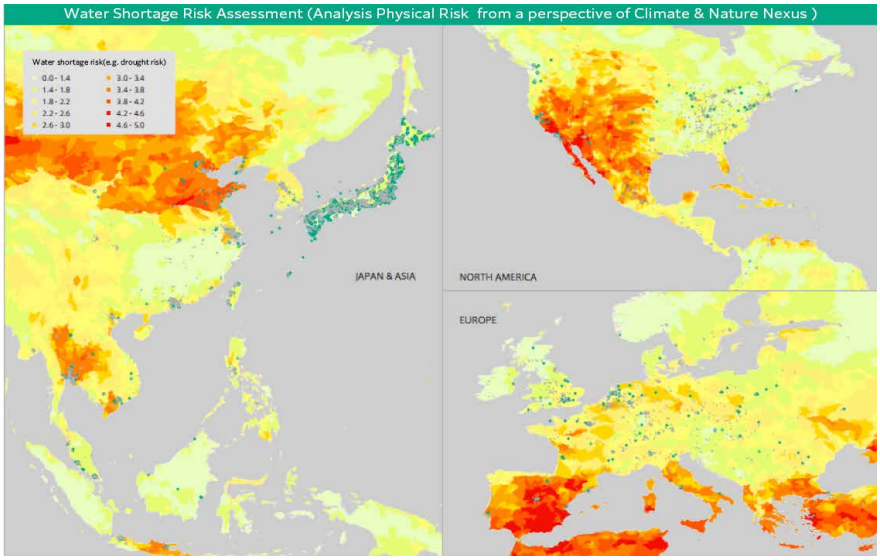
The analysis of acute risk associated with flood damage targeted key domestic and international locations and real estate collateral of borrowers. We visualized relationships by sector between sales impact of client companies (due to flood damage) and their dependencies on water resources in these key locations.

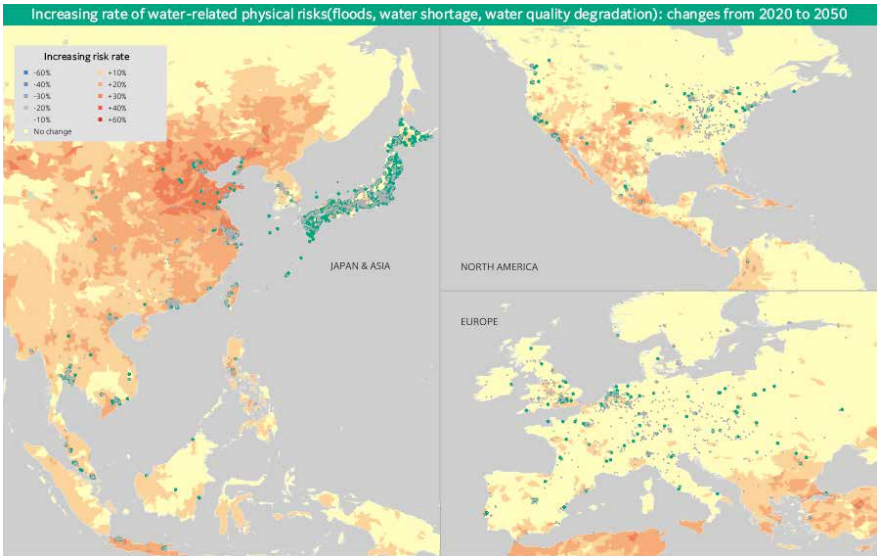
Sectors more dependent on water resources tend to face more physical risk due to tendencies to own factories and other important locations near rivers and coastal areas. Overall, we verified that the Consumer Staples and Materials sectors are highly dependent on water resources and face relatively high exposure to physical risks.



(Circle size is proportional to Bank exposure)
Source: The Norinchukin Bank

According to the analysis above, the Bank is highly dependent on water resources and may have significant exposure to physical risks from climate change. In response, we targeted food sectors (Packaged Foods - Meat, Brewing, Alcohol, etc.) to deepen our analysis, as these sectors make up a considerable proportion of our investments and loans. We further visualized the status of water-related risks by mapping the location of key sites of borrowers onto a risk heat map. This map indicates drought risk (as a physical risk in terms of climate change and natural capital), future flood risk (as a physical risk due to climate change), and other water-related risks.



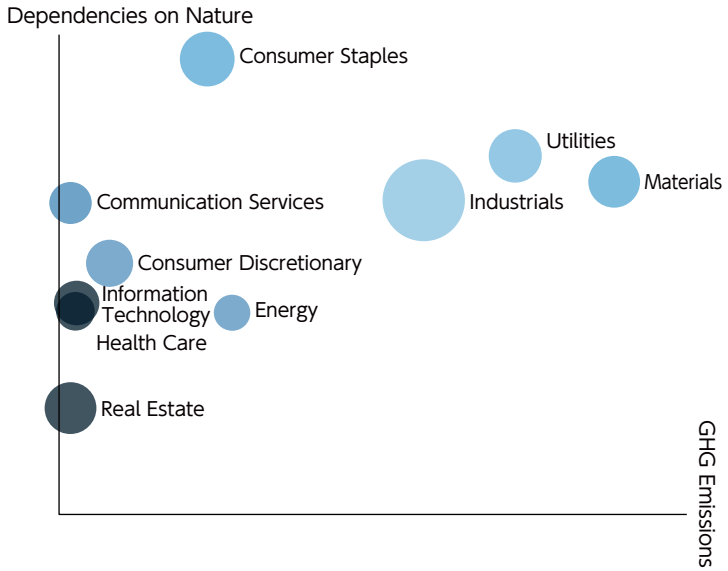


Source: The Norinchukin Bank using ArcGIS
Note 1 Green: Important locations in the food sector Gray: Important locations in other sectors
Note 2 n=283,287 (For factories and other important locations)

In addition to flooding and other disasters, climate change results in nature-related physical risks (acute and chronic risks), including groundwater depletion, changes in surface water, and water quality degradation. We will strive to leverage our understanding of investee and borrower climate- and nature-related risks in future discussions and solutions.

Sector Analysis Based on Integrated Understandings of Climate Change, Natural Capital, and Biodiversity

The Bank plotted and analyzed sector-specific dependencies and GHG emissions (financed emissions) in our investment and loan portfolio on a scatter plot (where circle size depicts investment and loan size). Here, we aim to identify sectors with higher priority from an integrated perspective on challenges in climate and nature. Priority sectors identified in this analysis include the Consumer Staples, Industrials, Utilities, and Materials sectors. The Bank recognizes the need to identify risks and opportunities in these sectors in addition to deep analysis to examine individual strategies and integrate these sectors into our risk management process.



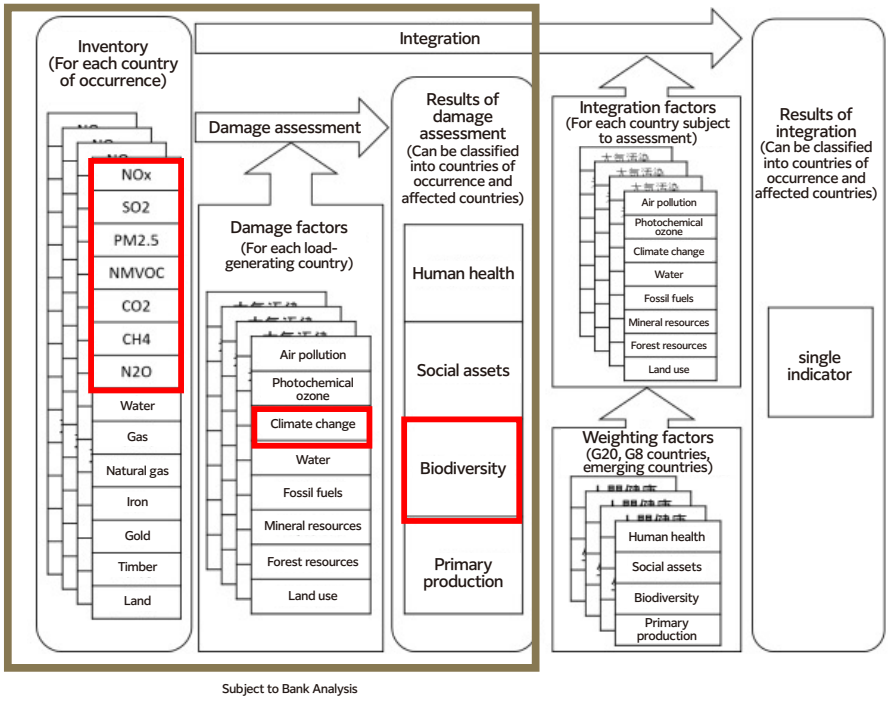
Source: The Norinchukin Bank

Analyzing Impacts (Footprint Metrics) of Climate Change on Biodiversity Using Life Cycle Assessment

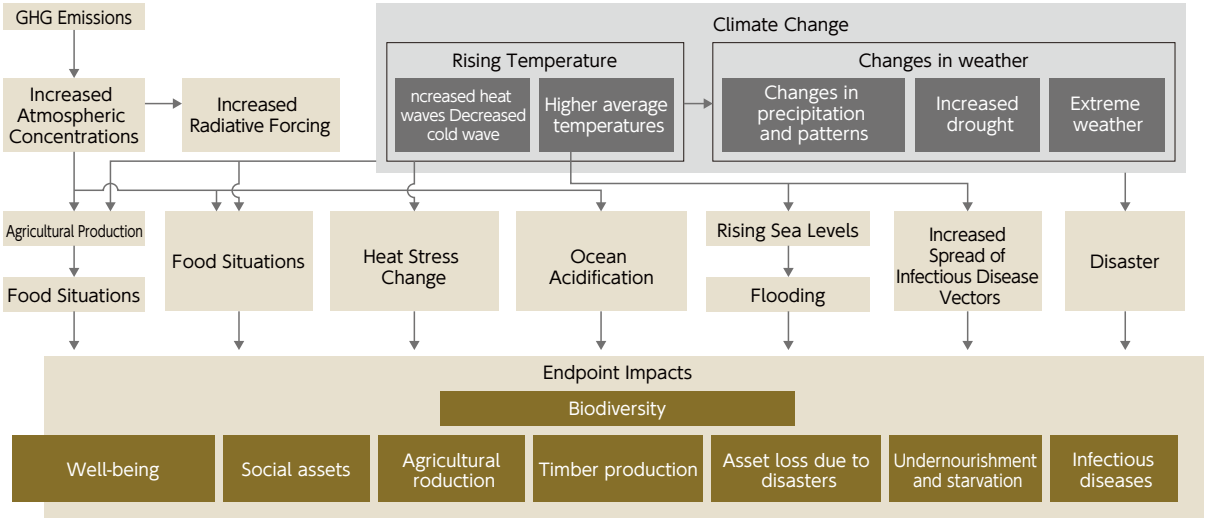
The Bank participated in a joint research project with the Waseda University Norihiro Itsubo Laboratory (includes Tokyo City University) to deepen our integrated understanding of climate change and its impact on nature and biodiversity that result from investment and financing activities. We used the Life Cycle Assessment (LCA) to examine impacts of climate change on biodiversity and calculate our Footprint Metrics. Information referenced included financed emissions information from the business company investment and loan portfolio of the Bank.

We strive to consider both direct operations and value chains in our analysis, aiming to evaluate impact on nature from our business as a whole. However, analysis methodologies and disclosed data from investees and borrowers are limited. To compensate for these limitations, we collaborated with the Waseda University Itsubo Laboratory to devise an impact assessment methodology that reflects multi-regional input-output tables and regional environmental conditions for the investment and loan portfolios of financial institutions. Here, the Banked utilized the Life-Cycle Impact Assessment Method based on the Endpoint Modeling (LIME) method, developed under Professor Itsubo. We applied a Multi-Regional Input-Output Table to the entire portfolio to reflect the supply chain and environmental impacts of each country and sector, taking into account the significant impact of raw material procurement in the country of origin.

Conceptual Diagram of LIME3

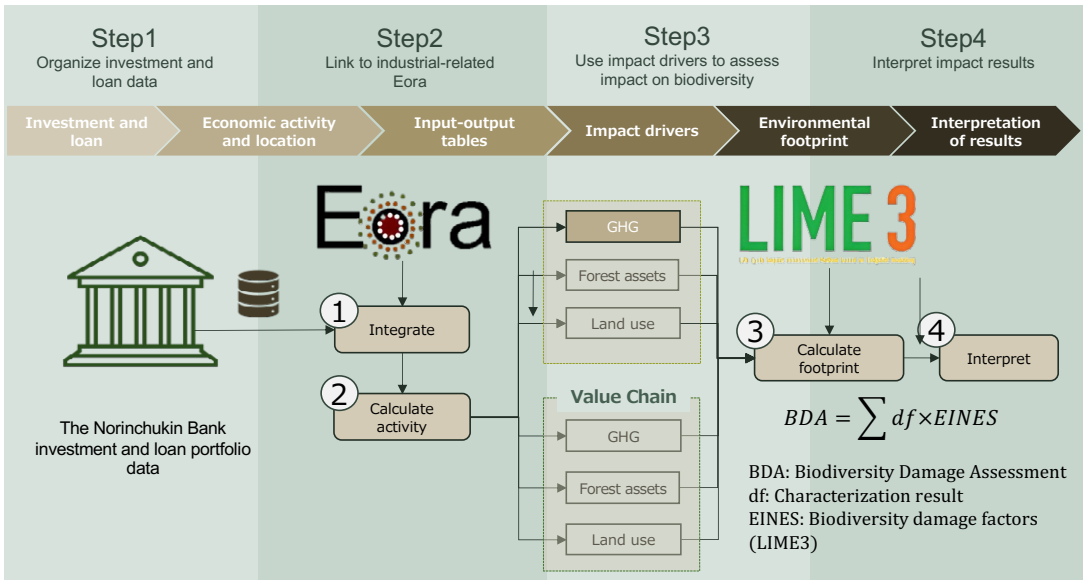


Climate Change Cause and Effect



Source: Itsubo, Norihiro and Inaba, Atsushi (eds.) *LIME3 Revised and Supplemented* Maruzen Publishing Co., (2023)

Analysis Process



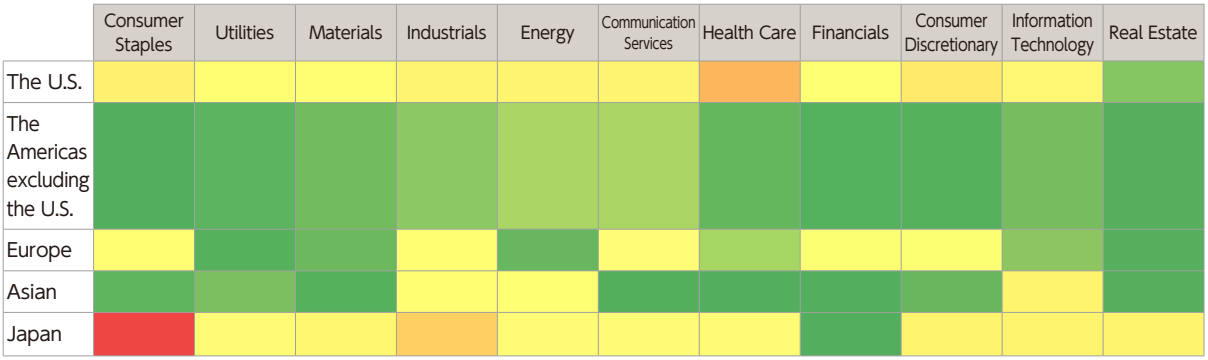
Source: Itsubo Laboratory, Waseda University

The multi-regional input-output table references the EORA database. We linked portfolio data to EORA to calculate our impact contribution based on our share of investments and loans to portfolio companies. Our analysis considered GHG emissions, forest resources, land area occupied, and water consumption. Share is calculated as the ratio of outstanding investments and loans of the financial institution to the total net assets and liabilities of the portfolio company. This share applies the financed emissions measurement method, which calculates contribution as the share of GHG emissions of each financial institution to the emissions of the portfolio company. In this analysis, we analyze the environmental impacts of GHG emissions (Scope 1) from investees and borrowers.

Here, we visualized our impact on biodiversity using the EINES indicator* (species extinction risk indicator) as the footprint metrics. EINES is an endpoint indicator of LIME3, developed under the Itsubo Laboratory of Waseda University. The Climate and Nature report depicts sectors and regions with higher EINES values as higher contributors to climate change and the resulting species extinction. Our analysis here enabled the Bank to index the assessment of environmental impact through climate change (as the Footprint Metrics) and compare data by country and by sector.

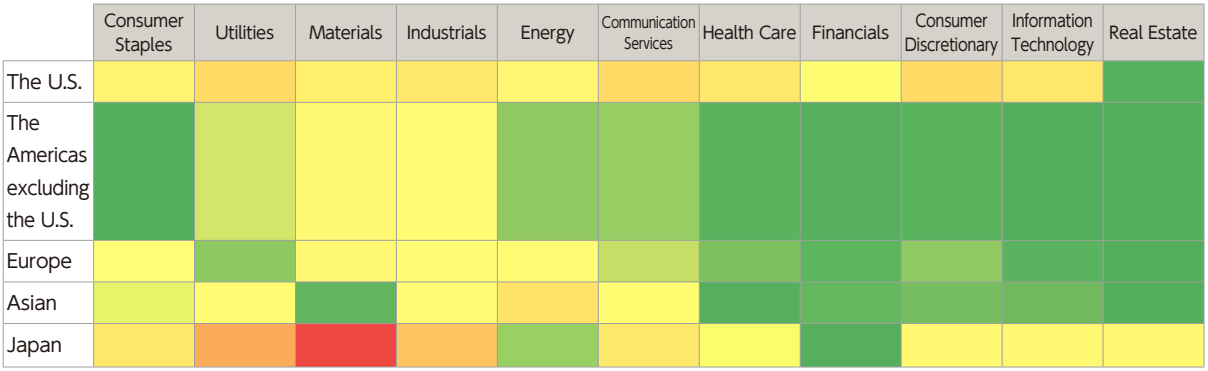
* Expected Increase in Number of Extinct Species (EINES) is an indicator of extinction risk, defined as the inverse of the extinction life expectancy of a species.

Regional EINES Indicators (GICS Sector)



Note: The closer to red on the color scale, the higher the EINES

Reference: Financed Emission by Region (GICS Sector)



Note: The closer to red on the color scale, the larger the emissions
Source: The Norinchukin Bank based on materials from Itsubo Laboratory, Waseda University

The following sectors of the Bank portfolio contribute the most to species extinction risk through GHG emissions: Consumer Staples in Japan, Industries in Japan Health Care in USA and Consumer Discretionary in USA. For more information, see Metrics and Targets. Sectors that contribute more to species extinction risk tend to be exposed more to transition risk. In response, the Bank will strive to identify hotspots through expanded analysis and utilize the Footprint metrics in dialogues with our investees and borrowers going forward.

This analysis examines the characteristics of our investee and borrower supply chains using GHG emissions estimates through input-output tables (EORA). The Bank will continue to collaborate with Itsubo Laboratory to extend our analysis to include land use, forest resources, water use, and other impact drivers to visualize the environmental impact of our portfolios.

Trade-Off Between responses to Climate Change and Biodiversity Conservation

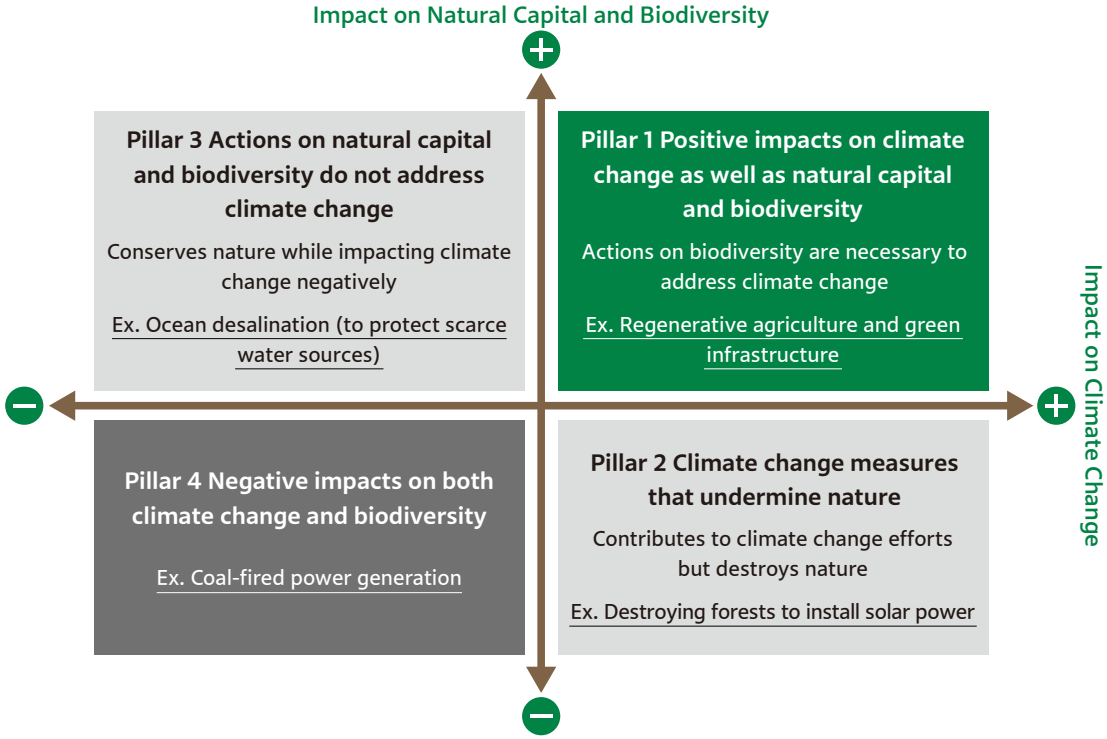
The Bank works with external partners on various climate change efforts. One such project is a carbon-credit to prolong rice paddy drainage periods, aiming to reduce methane emissions. Carbon credits Issuance of are an important solution to incentivize the creation of decarbonized societies. In the same way, carbon credits from the agriculture, fishery and forestry industries contribute to increasing the income of these industries that we commit to.

However, certain trade-offs arise between climate change response and natural capital and biodiversity. Efforts to prolong periods of drying out rice paddies present one such trade-off. While prolonging these periods is an important agricultural method that reduces GHG emissions, this method may have adverse effects on the biodiversity of rice paddies depending on the field environment.* Draining water from rice paddies may also impede the natural waterlogging abilities of the paddies. These issues are said to inflict a partial trade-off between the multi-functionality and waterlogging abilities of rice paddies.

The Bank recognizes the dilemma with trade-offs between natural capital and biodiversity and addressing climate change. We will continue to work toward resolving these issues, understanding the importance of grasping negative impacts, examining scientific facts, and testing for available technologies to resolve the trade-offs.

* According to the Ministry of Agriculture, Forestry and Fisheries (MAFF), long-term efforts to drain paddies and reduce methane may have adverse effects on amphibians and insects. The Ministry is also investigating technologies to eliminate trade-offs.

Source: (Japanese only) Ministry of Agriculture, Forestry and Fisheries, *Summary of the Results of the FY2021 Environmentally Friendly Agriculture Effectiveness Survey Commissioned Project*
https://www.maff.go.jp/j/seisan/kankyo/kakyou_chokubarai/attach/pdf/sansya_2_5-7.pdf



Source: The Norinchukin Bank based on the Finance for Biodiversity Foundation, *Unlocking the biodiversity-climate nexus*.

Nature-Related Scenario Analysis based on FPS + Nature

Nature

The Bank conducted a trial scenario analysis based on TNFD scenario analysis discussion papers. Here, we focused on the food and agriculture sector, the key sector in the food and agriculture value chain, using the IPR Forecast Policy Scenario + Nature (FPS+Nature) scenario to analyze nature-related risks.

FPS + Nature Scenario Adopted

FPS + Nature is the first integrated nature-climate scenario developed for investors through the Inevitable Policy Response (IPR) program, the Principles for Responsible Investment (PRI) climate change scenario development program. FPS + Nature is an exploratory scenario for policy-based transition risks in response to climate change and natural degradation. This scenario provides investors assessing nature-related risks and opportunities with projections on how policies, technology, and social trends will affect the land use and energy sectors by 2050.

FPS + Nature Features

	FPS + Nature Features
Advantages	Based on detailed policy projections of national and regional policies, rather than assuming a 2°C target or a pathway to achieve net zero. Enables financial institutions to reflect realistic medium- and long-term market reactions in their scenarios.
Scope	Considers changes in technology, innovation, and market mechanisms deriving from changes in policies. Enables more realistic scenarios for short-term pathways and long-term transitions.
Target	Provides a more detailed analysis of land use and food system transitions. Establishes changing diets, bio-energy development, and nature-based solutions (NBS) normalization as major drivers for change.

FPS + Nature bases analysis on existing policy objectives and forecasted trends from future policy developments.

	Step1	Step2	Step3
	• Organize existing laws, statutes, and policy objectives announced	• Evaluate feasibility of policy objectives and other factors	• Evaluate changes and developments in technology (innovation) and markets
Ex. Forests	• EU Regulation on Deforestation-Free Supply Chains • U.S. FOREST Act • Investment and loan review statements from financial institutions to the deforestation sector	• Consider historical trends to ensure that the targets listed on the left are realistic • Assess realistic potential based on geographic characteristics and quality of governance	• Develop scenarios based on overall environmental awareness of society and the level of progress in technological development and innovation

Scenario planning using FPS + Nature includes nine areas of policy objectives and corporate commitments related to climate and nature. These areas cover 30by30 targets, national targets for climate change and biodiversity in each country, and agricultural policies (e.g., EU Farm to Fork).

Moreover, we account for a certain degree of uncertainty in policy effectiveness by referencing the effectiveness of climate change-related emissions reductions and nature-related policies in each country, as well as the Governance Index published by the World Bank.

Climate Policy Objectives	Climate and Nature Policy Objectives	Nature Policy Objectives
Emissions Pricing and Regulation	Deforestation and Afforestation	Nature Markets
Bio-Energy	Sustainable Agriculture	Land Protection
Diet Shifts	Food Waste	Land Restoration

Source: IPR FPS + Nature

The FPS + Nature conducts feasibility assessments on these policy objectives, taking into account global trends in markets (consumer and civil society demands) and technological development (corporate R&D, government assistance, etc.).

Policies, technologies, social trends, and their impact on nature provided through the FPS + Nature scenario take into account climate change and forecasted nature-related policy trends.

	FPS + Nature Trends	Indicative Impact on Nature
Emissions Pricing and Regulation	GHG emission regulation and reduction policies may emerge in the land use sector, with some developed countries implementing forms of carbon pricing in the sector by 2030	↑ Encourages habitat conservation and restoration in carbon-rich natural environments through nature-based solutions
Bio-Energy	Governments may regulate the use of less sustainable first-generation bioenergy and shift to second-generation bioenergy production	↓ Reduces land for habitat and species due to increased land demand
Diet Shifts	Governments in developed countries may increase the cost of ruminant meat production, compared to other protein sources, through GHG emissions regulation and support for alternative protein development	↑ Reduces pressure on land use by reducing demand for ruminant meat consumption
Deforestation and Afforestation	Stricter policies in importing countries on commodities linked to deforestation may increase international momentum to halt deforestation in exporting countries	↑ Reduces habitat destruction by reducing production of commodities linked to deforestation
Sustainable Agriculture	Government funding for sustainable agricultural practices backed by commitments to reduce fertilizer use may encourage increased nitrogen uptake efficiency in crop production	↑ Reduces habitat degradation from fertilizer run-off and over-application
Food Waste	Governments may establish policies to expand and strengthen initiatives to reduce consumer and private sector food waste, resulting in less food waste	↑ Reduces demand for land use and alteration, reducing land conversion from agricultural expansion
Nature Markets	An increasing number of biodiversity targets and nature-related regulations may lead to the emergence of voluntary biodiversity credit markets and their revitalization	↑ Increases implementation of market-based incentives to improve biodiversity outcomes
Land Protection	Policies to protect biodiversity may include the introduction and strengthening of regulations to protect lands and biodiversity hotspots	↑ Strengthens conservation of vital ecosystems, increasing the amount of land protected
Land Restoration	Governments across the world may take more active stances to restore degraded ecosystems through programs to restore public ecosystems, and actively seek private sector financing (e.g., carbon credits for afforestation)	↑ Increases the number of land restoration initiatives to improve the quality of degraded habitats

Source: The Norinchukin Bank based on IPR FPS + Nature

Applying FPS + Nature to Bank Exposure to the Food and Agriculture Sector

FPS + Nature provides parameters based on climate change and nature-related policy trends. These parameters take into account transition risk and physical risk (in terms of chronic climate-related risk only). Parameters of transition risk include higher numbers of protected areas resulting from policies and regulations, and changes in production of beef and alternative protein commodities in line with fluctuating market and consumer preferences. Physical risk parameters include water scarcity and pollination (decrease in pollinators). These indicators depict changes in the state of nature resulting from chronic rising temperatures and other impacts. Water scarcity parameters reference data forecasted from the World Resources Institute (WRI). The data on pollination parameters is available by region and considers trends in land use change forecasted by FPS + Nature as well as scientific papers and other results.

In this analysis, the Bank evaluated impacts resulting from natural degradation. We adopted the water scarcity and pollination parameters, given the significant dependencies on water resources in our portfolio and indispensability in agricultural production, respectively.

		2030		2050	
Region	State of Nature	Parameter Forecast	Rate of change (vs. 2020)	Parameter Forecast	Rate of change (vs. 2020)
Japan and Korea	Water scarcity	47.0	-1.3%	42.9	-9.8%
	Pollination	98.8	-1.2%	88.4	-11.6%
North America	Water scarcity	74.9	5.7%	81.2	14.5%
	Pollination	100.5	0.5%	98.8	-1.2%
EU	Water scarcity	37.1	8.1%	44.1	28.6%
	Pollination	102.5	2.5%	104.0	4.0%

	Parameters	Unit
Water scarcity	Ratio of water withdrawal to freshwater supply	%
Pollination	Fluctuations in pollinator population	Index (2020=100)

Source: The Norinchukin Bank based on IPR FPS + Nature

The scenario analysis evaluated the investment and loan regions of the Bank, including Japan, North America, and the EU (Japan and Korea are organized in the same category of the FPS + Nature regional classification).

The projected FPS + Nature parameter values for water scarcity assume that the ratio of water withdrawal to freshwater supply in Japan and the EU will be less than 50% in both 2030 and 2050. Based on this information, we assume that the risk of operation shutdown due to additional costs of water withdrawal reduction or water withdrawal restrictions is relatively low in these regions. On the other hand, percentages in North America reach 74% in 2030 and 81% in 2050, implying potential additional costs associated with freshwater use and the risk of shutdowns due to water withdrawal restrictions.

While pollination parameters are on an upward trend in North America and the EU, we expect parameters to decline in Japan. We recognize the possibility of reduced profits and other consequences associated with lower production in sectors where pollination plays an important role in business continuity.

Based on the above understanding, we analyzed the two state of nature parameters closely related to the food and agriculture sectors (water scarcity and pollination) under the transition scenarios provided by FPS + Nature. These scenarios targeted impact degree (physical risk) for 2030 (medium-term) and for 2050 (long-term).

		2030	2050
Region	State of Nature	Risk	Risk
Japan and Korea	Water scarcity	Low	Low
	Pollination	Low	Medium
North America	Water scarcity	Medium	High
	Pollination	Low	Low
EU	Water scarcity	Low	Low
	Pollination	Low	Low

Source: The Norinchukin Bank based on IPR FPS + Nature

Furthermore, we analyzed impacts on direct operations of each sub-sector of the food and agriculture sector, including Packaged Foods - Meat, Agricultural Products and Services, Distilled Spirits and Wine, Brewing, Non-Alcoholic Beverages, and Other (Tobacco, etc.). Here, we considered (1) exposure to each sub-sector, (2) dependencies and impact on nature, and (3) degree of physical risk in 2030 and 2050 based on FPS + Nature.

Analyze Food-Related Industries
- Packaged Foods - Meat
- Agricultural Products and Services
- Distilled Spirits and Wine
- Brewing
- Non-Alcoholic Beverages
- Other (Tobacco, etc.)

Source: The Norinchukin Bank

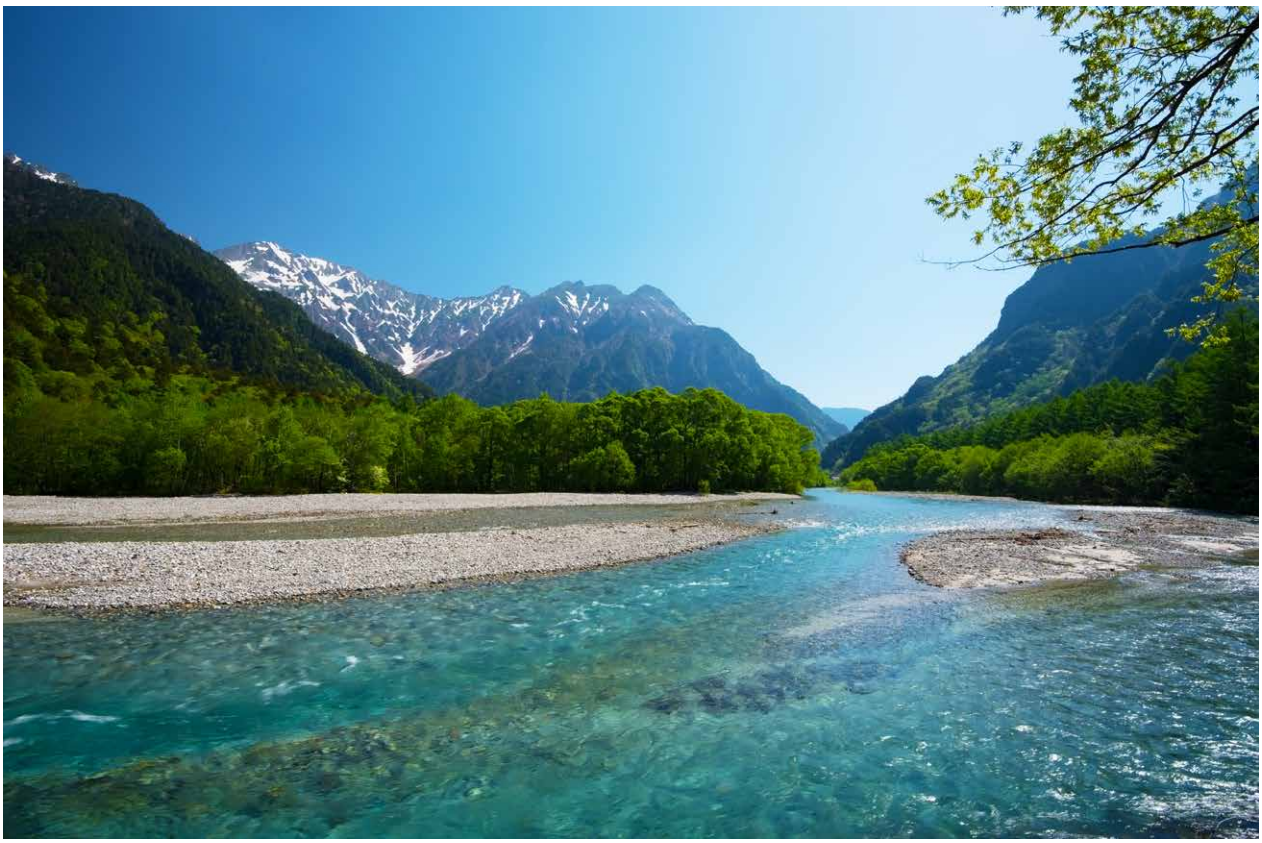
Establish degree of dependency on water resources and pollination by sectors referencing ENCORE

Establish degree of physical risk to the state of nature in Japan*, North America, and the EU based on FPS+Nature scenarios

*FPS+Nature organizes Japan and Korea in the same regional classification.

		Packaged Foods - Meat		Agricultural Products and Services		Distilled Spirits and Wine		Brewing		Non-Alcoholic Beverages		Other (Tobacco, etc.)	
		2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050
Japan and Korea	Water scarcity												
	Pollination												
North America	Water scarcity												
	Pollination												
EU	Water scarcity												
	Pollination												

Source: The Norinchukin Bank
Notes Red = Relatively high risk Green = Relatively low risk White = No exposure to the sector



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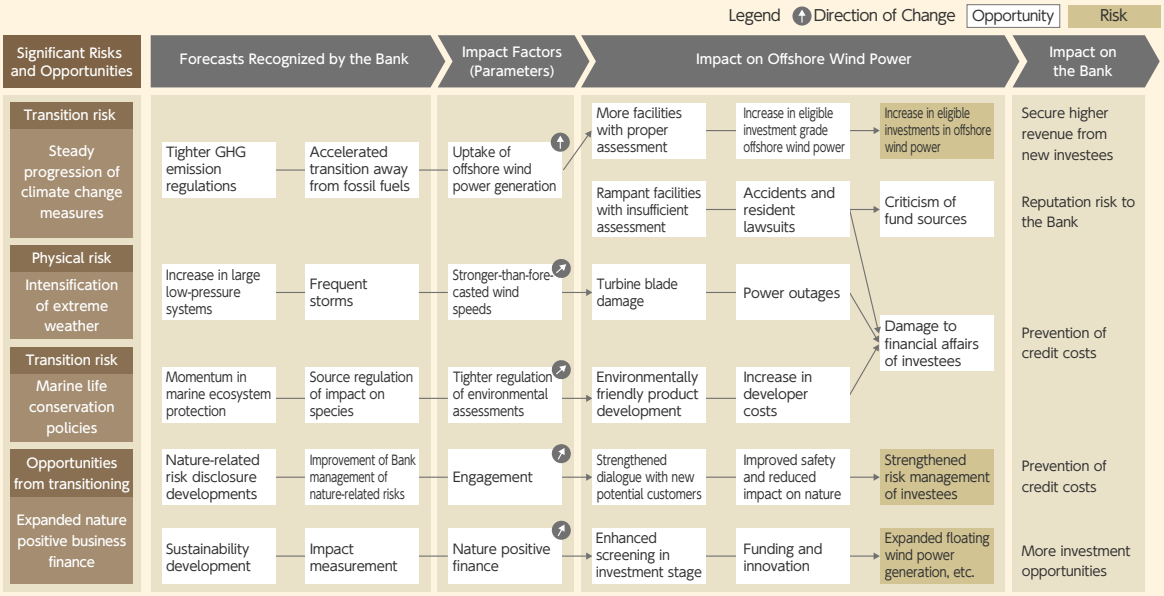
Scenario Analysis for Offshore Wind Power Project Financing



Source: The Norinchukin Bank

Offshore wind power is an important decarbonization technology that utilizes renewable energy. However, we must deepen our understanding of this energy source and its impact on nature, biodiversity, and marine ecosystems. To do so, we participated in a pilot test by UNEP FI to conduct a trial scenario analysis on financing offshore wind power projects. Referencing transition and physical risk scenarios, we organized spillover paths related to our risks and opportunities. We referenced various literatures and environmental due diligence documents at the time of the investment, establishing impact factors (parameters) that lead to transition risk and physical risk. Then, we analyzed the impact on the offshore wind power business based on the direction and impact of the parameters, and considered final financial impact on the Bank.

Analysis results are documented in the UNEP FI report *Unboxing Nature-related Risks: Insights from the UNEP FI-led TNFD Piloting Programme*, under good practice.

Evaluating Trial Scenario Analysis Results

We analyzed scenarios that take into account regions and sectors to identify different degrees of physical risk resulting from varying regional states of nature. Declining pollinators is the risk factor in the agricultural products and services sector in Japan. In North America, we forecast increased water risk will present higher risk in sectors that rely on water.

This scenario analysis only took into account direct operations of the Bank. Further analysis of the value chain may present more risks to be aware of. In our joint study analysis of entire value chains with the Kyushu University Managi-Lab and aiESG, we confirmed that the Japanese Packaged Foods - Meat sector has significant impact on water resources and land use in U.S. agriculture. We recognize the importance of these perspectives in our analysis. Going forward, the Bank will continue to evaluate risks and opportunities with gradually more developed nature-related scenario analyses, and discuss how to utilize such evaluations in strategy formulation and risk management.

Challenges and Future Expansion of Nature-Related Portfolio Analysis

The Bank references the TNFD recommendations to identify risks and opportunities, taking into account dependencies, impacts, value chains and locations in our portfolios. We estimated footprints and conducted a trial scenario analysis to ensure we understand nature-related risks and opportunities to a certain degree. At the same time, we must rely on proxy data due to portfolio characteristics and data constraints as a financial institution. We recognize that these limitations may result in slight differences from the actual situation in nature, dependencies, and degree of impact.

Going forward, we plan to conduct detailed analyses of sectors identified as priority sectors, including Consumer Staples (food, agriculture, etc.) and Utilities (electricity, etc.). We will also strive to improve scenario and value chain analyses and develop methodology for the Footprint Index.

Efforts to Grasp Nature-Related Opportunities

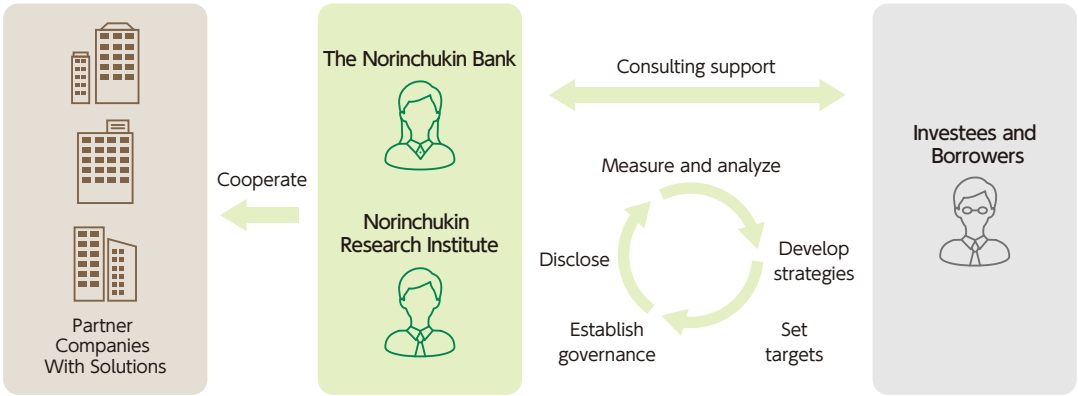
The Bank analyzes scenarios based on the TNFD disclosure recommendations, adopting values chains, location, and the Footprint Index. We integrate climate change into discussions on nature-related risks and opportunities in the Bank to the greatest extent possible. The status of nature-related risks, dependencies, and impacts rely only on analysis results of statistical data by country and by sector. To properly manage our status, we must further our understanding and improve analysis accuracy through dialogues with investees and borrowers. Recognizing these circumstances, the Bank pursues the following initiatives to mitigate and avoid climate- and nature-related risks, as well as capture opportunities.

Nature-Related Engagement

We engage in dialogue with borrowers on current status and issues, recognizing the importance of natural capital and biodiversity and the risks associated with future changes. As we engage in these dialogues, we plan and propose solutions based on priority issues.

Countless companies around the world are still exploring how to measure, analyze, formulate strategies, and set goals related to nature. In response, the Bank and the Norinchukin Research Institute Co., Ltd. (the group think tank) provide solutions including TNFD disclosure support in developing nature-related risk management strategies.

We provide solutions and engage with our borrowers to identify nature-related risks and opportunities, develop risk management processes and governance, and develop strategies based on these processes. We recognize that through these efforts, we reduce risk and capture business opportunities, leading to risk avoidance and financing opportunities for the Bank. Going forward, we will demonstrate our ability to continue leveraging our deep knowledge and network in the agriculture, fishery and forestry industries that found the Group.



The Bank entered into a business alliance (technical partnership) with general construction consultant Yachiyo Engineering Co., Ltd. in March 2024 to solve nature-related issues. The partnership aims to work with borrowers to resolve issues by combining our understanding of borrower business as a financial institution, the expertise of a general construction consultant, and technology. We collaborate to provide TNFD support, blue carbon, and other solutions related to the blue economy.

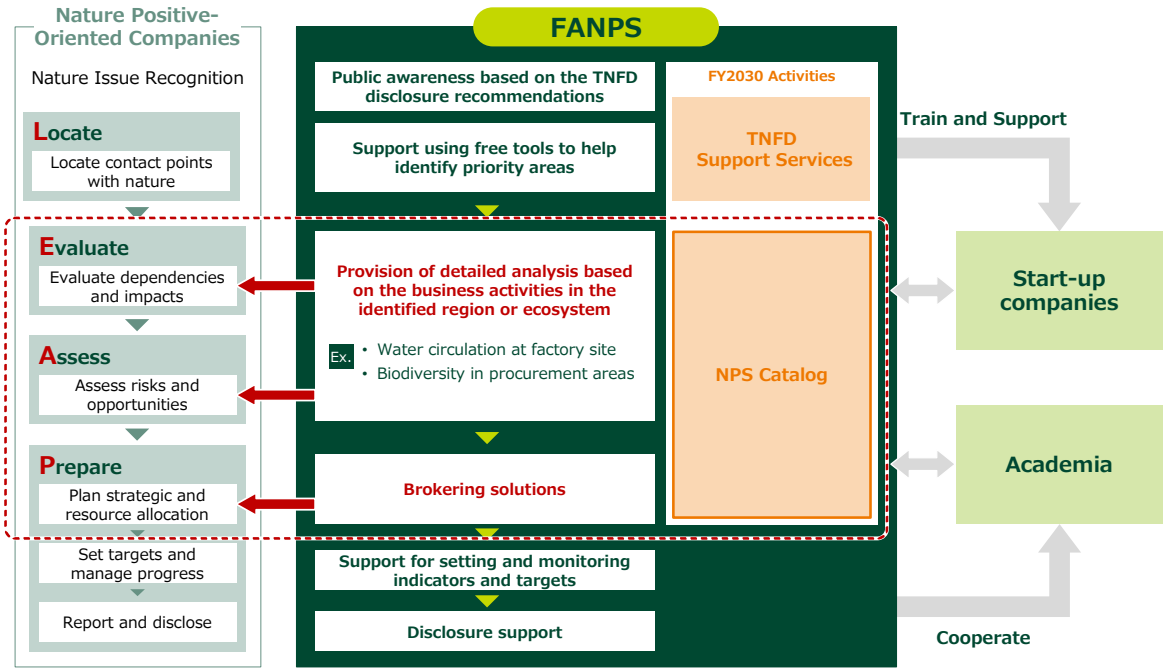
Going forward, we will take the Climate-Nature Nexus into account and work to provide solutions that contribute to integrated climate and nature engagement and problem solving.

TNFD and Nature-Related Uptake Activities and Market Formation

The Norinchukin Bank Executive Advisor HIDESHIMA Hirotaka was elected as a member of the TNFD Task Force in November 2022. He works to develop and encourage uptake of the TNFD recommendations by participating in discussions to complete the TNFD recommendations and speaking actively at industry and initiative events as a guest speaker. HIDESHIMA also works with MS&AD Insurance Holdings and the Keidanren Committee for Nature Conservation to convene the TNFD Consultation Group of Japan (“TNFD Japan Council”), the council responsible for encouraging and disseminating TNFD in Japan.

Partnerships With Other Financial Institutions

In February 2023, the Bank established the Finance Alliance for Nature Positive Solutions (FANPS) with Sumitomo Mitsui Financial Group, Inc., MS&AD Insurance Group Holdings, Inc., and Development Bank of Japan Inc. In March 2024, we began offering a simple tool to evaluate TNFD compliance status and published a solution catalog contributing to nature positivity. Going forward, our four-company alliance will develop gradual cooperative efforts to support the corporate shift to nature positivity.



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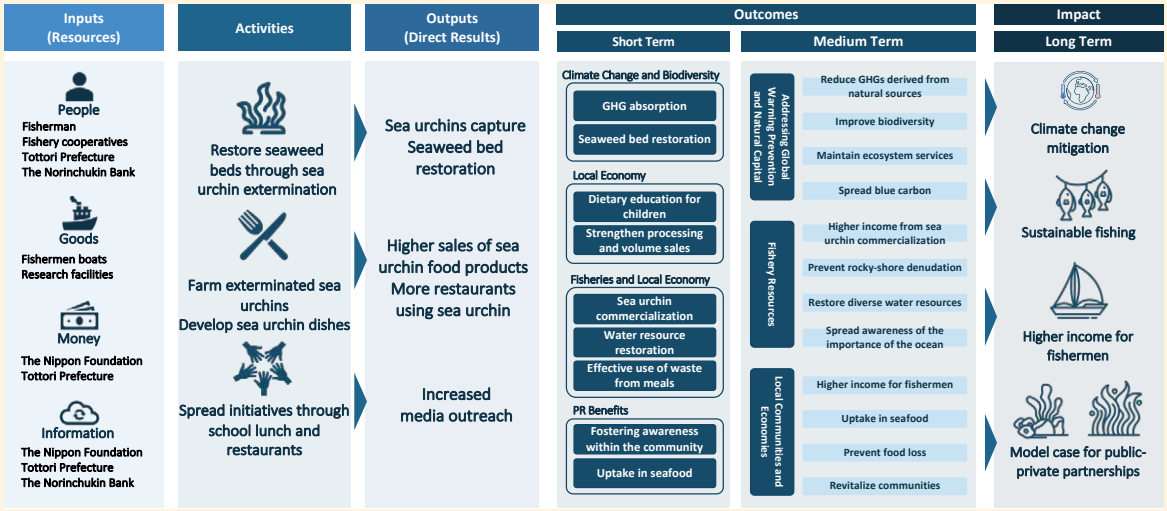
Initiatives Focused on the Blue Economy

Efforts for oceans and rivers are critical to solve sustainability issues related to climate and nature, as more than 70% of the Earth's surface is home to bodies of water. In recent years, public eye has focused on the blue economy, which balances economic activities with the conservation of marine and river environments and resources.

Seaweed beds and mangroves are crucial to address climate change and maintain ecosystems due to their ability to absorb carbon and serve as habitats for diverse organisms. Given their importance, the Bank focuses on blue carbon, partnering to implement these initiatives with JF members, communities, and companies. One such activity is the Tottori Blue Carbon Project in cooperation with the *Tottori Ken* Fisheries Cooperative Association and Tottori Prefecture. The Tottori Blue Carbon Project strives to recover seaweed beds in the prefecture by exterminating sea urchins that cause damage to seaweed beds and farming them to develop products.

Logic Model on Efforts of the Tottori Fisheries Cooperative, Tottori Prefecture, and The Norinchukin Bank



The Bank joined the Members of the Osaka bay Blue carbon ecosystem Alliance（MOBA） and endorses the Osaka Bay MOBA Link Initiative . This initiative links Osaka Bay with a blue carbon ecosystem corridor, sponsored by Osaka and Hyogo prefectures. Under this concept, we strive to work with governments, companies, and the local community to generate blue carbon in Osaka Bay and while discussing how to take advantage of the opportunity to spread information at the 2025 Osaka Expo.

Additionally, the Bank seeks active collaboration with venture and start-up companies, which lead innovation essential to solving climate and nature issues. We help fund these companies through demonstration projects and corporate venture capital（CVC）. In one such project, the Bank collaborates with Arnul Co., Ltd. and the Yamagawa Fisheries Cooperative to establish and implement *kagikenori* seaweed aquaculture technology. This project aims to decarbonize agriculture, a key regional industry, and discover new sources of income for the fishing industry. *Kagikenori* seaweed suppresses methane emissions in cattle burps, a major source of methane emissions. Providing stable supply of *kagikenori* through aquaculture will create new business for fishermen while reducing livestock-derived methane emissions. We expect this project to not only to reduce methane emissions in agriculture, but also support fishermen, who lead seaweed bed creation activities that create blue carbon. Going forward, this project may also enable to approach dual resolution of climate- and nature-related issues through the key regional industries of agriculture and fisheries.

5 Risk Management (Risk and Impact Management)

Basic Risk Management Policy

Climate Nature

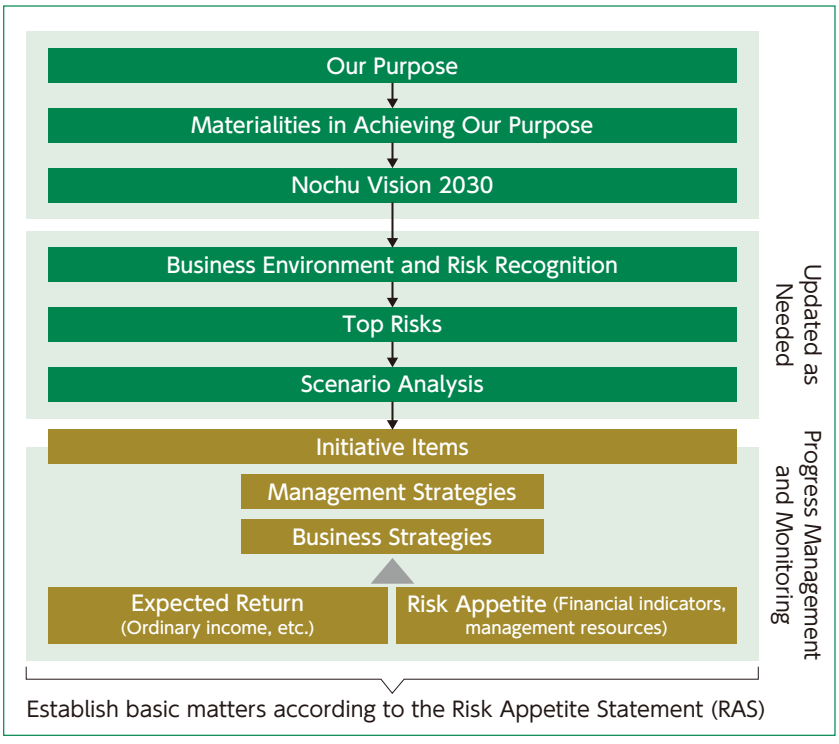
The Norinchukin Bank board of directors formulated the Risk Management Policy defining our basic risk management system to properly manage risks throughout the company. This management policy stipulates types of risks to be recognized and the management system and methods. Based on this core policy, the Bank strives to fulfill our role and maximize our superiority and presence as a financial institution involved in agriculture, forestry, fisheries, and food. Our management objective is to provide stable returns to members by strengthening our credit business infrastructure more than ever while further developing existing international diversified investments. Under this objective, we continue to enhance our risk management framework.

The Bank manages risks in an integrated manner by assessing risk materialities faced in business operations and identifying risks to be managed. We manage these risks individually based on their unique characteristics while using quantification methods to identify and compare risks to management strength. Main risks that the Bank manages include credit risk, market risk, liquidity risk, model risk, and operational risk. We also manage environmental and social risks (including climate and nature-related risks), controlling these risks based on individual risk characteristics under each risk categories.

Risk Appetite Framework

The Norinchukin Bank Risk Appetite Framework (RAF) clarifies management and business strategies, expected returns (type and amount of target returns), and risk appetite (type and amount of risk willingly assumed or tolerated, and optimal management resources). Through the integrated management of these factors, This business management framework leads to disciplined risk-taking and optimizes risk returns. The Bank will utilize RAF to adapt to changes in the surrounding environment and effectively allocate limited management resources (e.g., business management expenses and personnel), furthering strengthening the soundness of our management.

Risk Appetite Framework Flow



Reflection in Top Risks

The Bank formulated a Risk Appetite Statement to establish and document basic matters related to risk appetite framework (RAF) management. In developing this management plan, we select top risks (risk events that require special attention in the future) based on the business environment and risk perception in accordance with the risk appetite statement. We then analyze possible future scenarios.

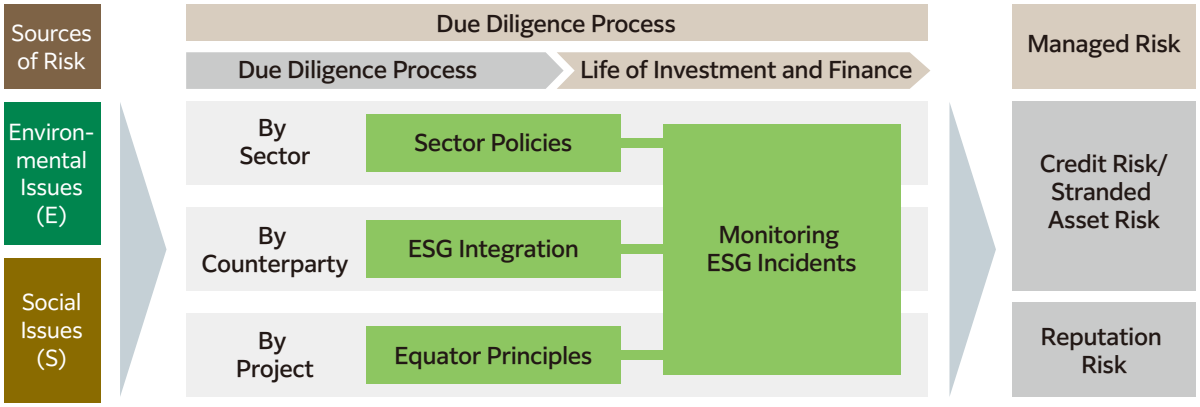
The Bank selected addressing climate change, biodiversity and other sustainability-related issues as a top risk.

By selecting top risks, we aim to align the perspective of our organization with risk recognition, thereby building greater sophistication in our risk management structure. Through discussions that include Bank's managements, we pursue our purpose and medium- to long-term goals, while catching up to current global trends.

Environmental and Social Risk Management Framework in Investments and Loans

The Bank assesses and determines climate and nature-related risks associated with our investments and loans. We consider environmental and social risks, based on environmental and social risk management (ESRM) system. We additionally establish a framework for the risk management department to control and contain risks, under which decisions may be escalated when necessary. We will work on advancing the sophistication of our ESRM framework in a phased manner, aiming to incorporate the framework into integrated risk management.

The ESRM Framework



The following summarizes specific initiatives the Bank takes when considering and financing investment and loans.

Investment and Loan Policy (Policy on Environmental and Social Considerations in Financing and Investment Activities)

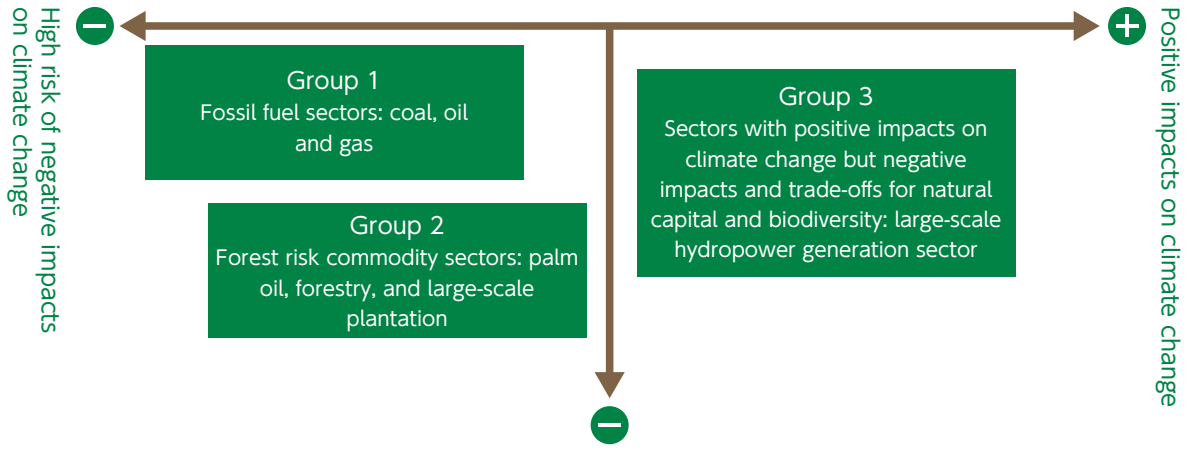
The Bank established a policy to ensure consideration of environmental and social issues in our financing and investment activities that may have significant negative environmental and social impacts, including climate change, natural capital, and biodiversity (see Appendix for more details on this policy).

Policy on Environmental and Social Considerations in Financing and Investment Activities

Policy on Environmental and Social Considerations in Financing and Investment Activities

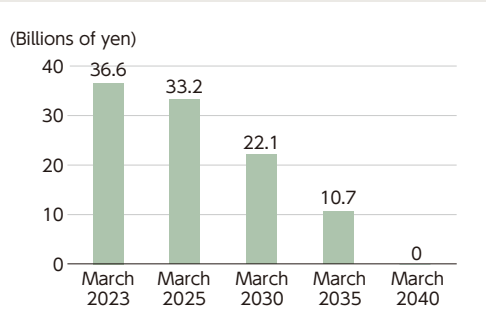
	Cross-sector items	Sector specific items
Transactions for which the Bank prohibits financing and investment	■ Projects with an adverse impact on UNESCO World Heritage sites ■ Projects with an adverse impact on wetlands designated as Wetlands of International Importance under the Ramsar Convention ■ Projects involving child labor and forced labor	■ Cluster munitions manufacturing sector
Transactions for which the Bank restricts financing and investment	■ Projects with adverse impacts on high conservation value areas ■ Projects with adverse impacts on indigenous peoples' communities ■ Projects involving land expropriation leading to involuntary resettlement	■ Coal-fired power generation sector ■ Coal mining sector ■ Palm oil sector ■ Forestry sector ■ Inhumane weapons sector ■ Oil and gas sector ■ Large-scale agriculture Sector ■ Large-scale Hydropower generation Sector

The figure below depicts the mapping of specific sectors that may have negative impacts from the perspective of impacts on climate change, natural capital, or biodiversity. Sectors are divided into groups that share common environmental issues.



Fossil fuel sectors in Group 1 share the risk of negative impacts on climate change due to GHG emissions derived from use of fossil fuels in power and heat generation. These sectors also pose ecosystem destruction and other risks in the event that fossil fuel mining operations are managed improperly. In response, we formulated policies for the coal-fired power generation, coal mining, and oil and gas sectors to verify implementation statuses of environmental and social considerations. Particularly, our policy stipulates against investments or loans for use in new construction or expansion of existing coal-fired power plants. We aim to reduce the balance of investments and loans for coal-fired power generation to zero by 2040 in accordance with this policy.

Outstanding Investments and Financing Related to Coal-Fired Power Generation (Projections)



The Bank revised our policies and measures for the coal-fired power generation and coal mining sectors in March 2024, in light of progressing discussions on global decarbonization. These revisions focused on the perspective of strengthening our response to climate change.

Group 2 consists of forest risk commodity sectors, including the palm oil, forestry, and large-scale plantation sectors. These sectors share risks of deforestation associated with operations and development. Forests plays an important role in mitigating global warming through the absorption and storage of carbon dioxide, while serving as a valuable resource that contributes to biodiversity conservation. Forests are crucial from the perspective of climate change, natural capital, and biodiversity. When considering investments and loans in these sectors, the Bank verifies that our clients obtain appropriate environmental and social certifications when necessary. We also require clients to announce their compliance with No Deforestation, No Peat, No Exploitation (NDPE).

Certain sectors face trade-offs, such as those in Group 3. These trade-offs include situations in which they have positive impacts on climate change, while having potential negative impacts on natural capital and biodiversity. One such trade-off arises in the large-scale hydroelectric power generation sector, which contributes to the supply of clean energy as a renewable energy source. However, the Bank recognizes risks associated with dam construction, including impact on the biodiversity of river basins. In response, the Bank takes into account client implementation of environmental and social considerations in investments and loans for large-scale hydroelectric power generation projects.

The Policy on Consideration of Environmental and Social Issues in Investment and Lending considers human rights and other social issues in each sector, in addition to environmental issue perspectives, as organized above. Note that while each group shares common environmental and social challenges, certain circumstances are specific to individual sectors.

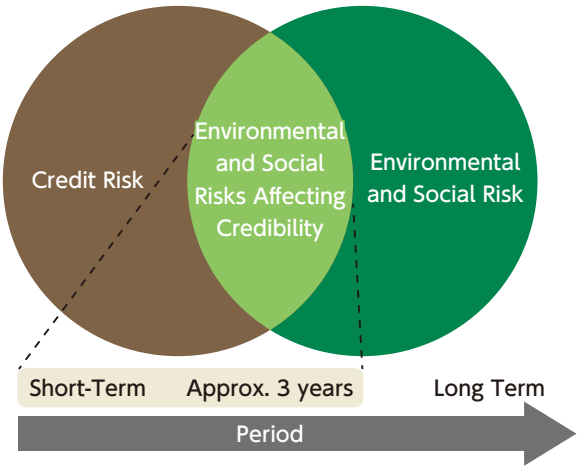
We will continue to revise the Policy as necessary, taking into account domestic and international trends in environmental and social initiatives, including climate change, natural capital, and biodiversity. We will also factor in stakeholder expectations and perspectives into these revisions.

ESG Integration in Risk Management

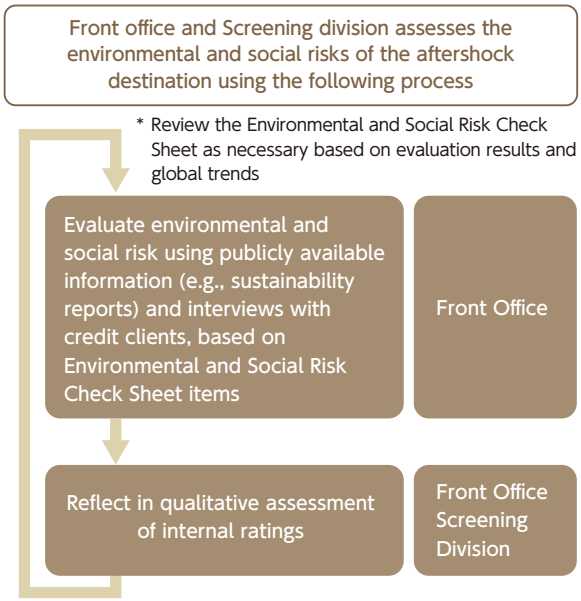
The risk management department evaluates environmental and social risks for Bank investment and loans and serves as a second line of support for ESG integration conducted by the front-line departments.

The Bank implements integrated operations with credit risk management in our internal rating system for evaluating the credibility of credit clients. We use the Environmental and Social Risk Check Sheet as a qualitative factor to assess clients in certain sectors, mainly those in sectors facing high transition risk due to climate change. The Environmental and Social Risk Check Sheet is a tool that fosters understanding of response status to environmental and social risk factors according to sector. The Bank will discuss reviewing and expanding target sectors in this initiative, taking external environments into account.

Scope of Consideration of Environmental and Social Risk Factors in Credibility Assessment



* The Bank strives to incorporate environmental and social risk that may affect credibility over a relatively short period of time (approximately three years) into the assessment.



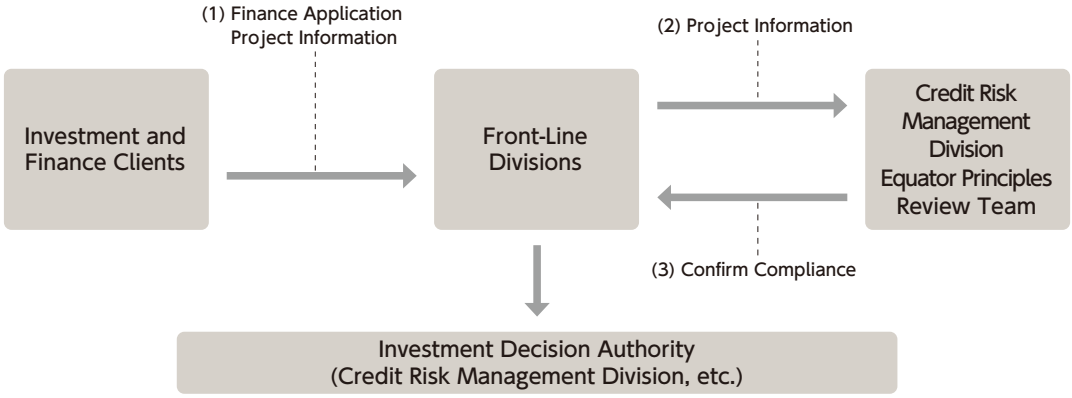
Efforts as an Organization That Endorses the Equator Principles

The Equator Principles is an assessment framework used by private financial institutions when financing large-scale development projects. This framework is used to assess whether the development project pays the appropriate attention to the natural environment and local communities. It is widely used in the project finance field as a method to identify, evaluate, and manage environmental and social risks.

Financial institutions that have adopted the Equator Principles are required to incorporate these into their internal policies and procedures and to construct appropriate management and administrative systems. Furthermore, they may not invest in projects that are not compliant with the Equator Principles.
The Bank adopted the Equator Principles in 2017 based on the increasing public awareness of environmental and social issues and societal expectations of financial institutions. In our adoption, we strive to be even more considerate in the upkeep of a sustainable environment.

We also formulated the Basic Policy Regarding the Equator Principles and the Administration Guidelines for the Equator Principles, based on our Basic Policy for Investment and Loans. We assign a dedicated staff member to verify conformity with these principles and continue to request that customers address environmental and social considerations at the required level according to their project category.

Equator Principles Conformity Verification Flow

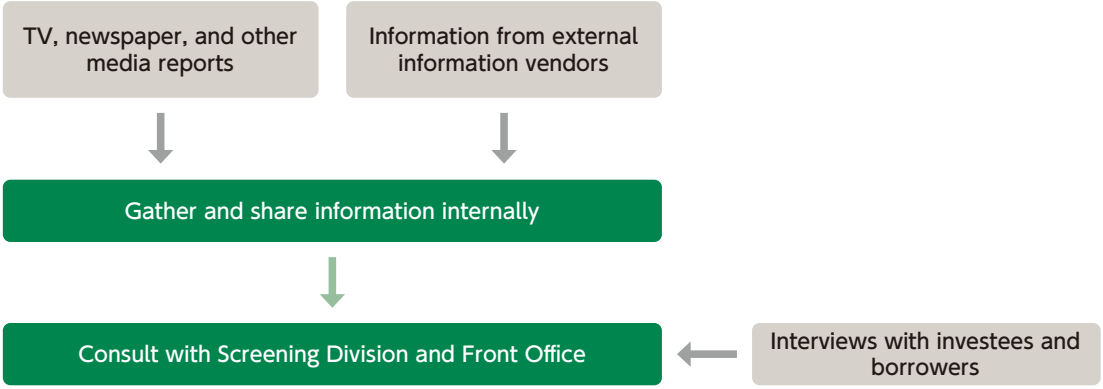


Visit our website for more information on our Equator Principle verification and results. (Japanese Only) (https://www.nochubank.or.jp/sustainability/management/esmr/).

Responding to Environmental and Social Incidents

We monitor information regularly on environmental and social incidents (corporate actions, business activities, and related events that may have serious environmental and social impacts) of investees and borrowers. Through monitoring, we respond to avoid reputation and credit risks arising from environmental and social risks.

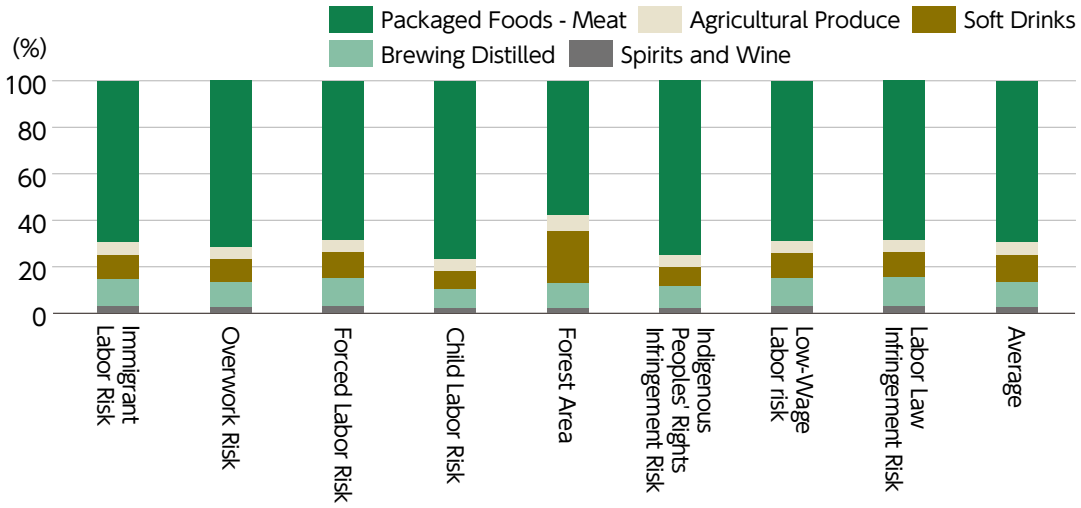
Environmental and Social Incident Response Flow



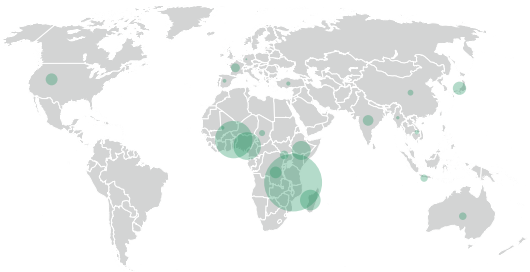
Human Rights Risks in the Value Chain

We conducted a trial analysis of human rights risks in the value chain. We used tools provided by our analysis partner, aiESG, Inc., to analyze human rights and other social issues in the supply chain, This analysis targeted human rights risks (e.g., child labor and forced labor) in the supply chain of investees and borrowers (downstream in our value chain).

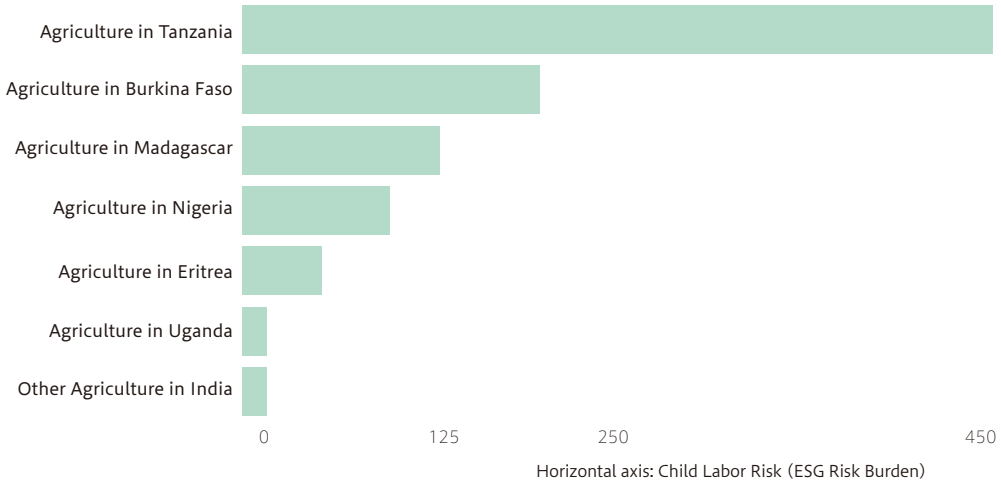
The following chart depicts the cumulative impact of five food-related sectors (Packaged Foods - Meat, Soft Drinks, Distilled Spirits and Wine, Agricultural Produce, and Brewing) on each of the indicators of human rights risks and other indicators upstream in the supply chain. Risk indicators relating to child and forced labor may be higher for Packaged Foods - Meat than for other food-related sectors.



Source: The Norinchukin Bank based on materials from aiESG, Inc.



The map on the left shows child labor risk in the Supply chain (upstream of the value chain) in the Packaged Foods - Meat sector. Analyzing on tracing supply chains reveals that Japanese companies are at risk of child labor in African agriculture. For example, Tanzania is a major producer and exporter of cashew nuts, a raw material for livestock feed. As a result, Japanese, Western, and American livestock industries may be indirectly at risk of child labor in the Tanzanian cashew nut industry. The Bank also conducts similar analyses of forced labor risk and violations of indigenous rights. We will use these analyses to further advance our risk assessment.



Source: The Norinchukin Bank based on materials from aiESG, Inc.

6 Metrics and Targets

Climate-Related Metrics, Targets, and Recent Results

Climate

Classification	Indicators		Latest Results	Target
Reduce GHG Emissions by Investees and Borrowers	Financed Emissions			Interim Target for FY2030 toward Net Zero by 2050
	Lending	【Power】 Base year: FY2019 213gCO_2e/kWh	FY2021 209gCO_2e/kWh	138gCO_2e/kWh -165gCO_2e/kWh
	Lending	【Oil and Gas】 Scope1/2 Base year: FY 2019 8.9gCO_2e/MJ	FY2021 14.5gCO_2e/MJ	3.1gCO_2e/MJ
	Lending	【Oil and Gas】 Scope3 Base year: FY2019 0.51MtCO_2e	FY2021 0.20MtCO_2e	0.37MtCO_2e
	Lending	【Coal】	Response and engagement based on Policy on Environmental and Social Considerations in Financing and Investment Activities	
	Lending	【Steel】 Base year: FY2019 1.99tCO_2e/t	FY2021 2.06tCO_2e/t	1.54 - 1.73tCO_2e/t
	Investments	【Stocks and Bonds】 Emissions on a per unit of investment basis Base year: FY2019 0.66tCO_2e/million yen	FY2021 0.54tCO_2e/million yen Vs. FY2019 -18%	Vs. FY2019 -49%
	Establishing forest carbon sink with members		FY2021 6.12 million tCO_2	9 million tCO_2/year as of FY2030
	GHG emissions by the Bank itself		FY2022 17,052tCO_2	Net Zero by FY2030
Pursue sustainable business	New sustainable finance		FY2021 - 1H FY2023 (cumulative) ¥6.2 trillion	¥10 trillion by FY2030
Strengthen risk management system	Reduce outstanding investments and loans for coal-fired power generation		Investments and loans outstanding as of FY2022 ¥36.6 billion	Zero by FY2040

Reduce Financed Emissions

Through our membership in the Net Zero Banking Alliance (NZBA), we demonstrate our commitment to achieving Net Zero by 2050 among our investment and finance clients.

Under the NZBA framework, we defined interim targets for fiscal 2030 in connection with the power, oil and gas, steel, and coal sectors held in our loan portfolio. We continue to set targets for the nine high-emissions sectors specified in the framework (in addition to the four sectors for which targets have already been set: power, oil and gas, steel, and coal, we set targets for the transportation, real estate, agriculture, cement, and aluminum sectors).

In addition to these targets, we established interim targets for fiscal 2030 in our investment portfolio (investments in stocks and bonds) in light of the importance of the stocks and bonds in question in our investment portfolio. These targets reference the framework for net zero alliances related to institutional investors. We continue to expand investment asset classes targeted in light of developments in GHG measurement practices at the Bank.

Investment and Finance Client GHG Emissions Calculations

Indirect GHG emissions in connection with investments and loans (Financed Emissions, Scope 3 Category 15) account for a significant of total GHG emissions from financial institutions. We recognize that measuring and reducing these emissions is an important issue.

In FY 2023, the Bank determined the current status and measures GHG emissions across a wide range of asset classes in our investment and loan portfolio related to business entities, including loans, bonds, and stocks (including investments and loans through funds) and project financing (power generation and oil and gas projects).

Calculation Method

We referenced the calculation method proposed by the PCAF to measure GHG emissions. The Bank joined the PCAF in March 2022, and we continue to step up our efforts to measure and disclose the GHG emissions of our investment and loan portfolio, including estimates based on the expertise and database of the PCAF.

Assets	Loans, bonds, and stocks (including investments and loans through funds*1) related to business entities; project financing (power generation and oil and gas projects) *1 Calculations also include non-look-through funds when calculating risk-weighted assets related to Basel requirements for private equity (PE) funds.
Calculation Methodology	[The Norinchukin Bank Investment and Finance Client GHG Emissions] 【Loans, Bonds, and Stocks】 $= \sum \left(\frac{\text{The Norinchukin Bank Investments and Loans to Each Entity}}{\text{Shareholders' Equity + Individual Company Liabilities}} \times \text{GHG Emissions of Each Company}^{*2} \right)$ *2 For Scope 1 and 2 emissions. 【Project Financing】 $= \sum \left(\frac{\text{The Norinchukin Bank Loans by Individual Project}}{\text{Shareholders' Equity in Each Project + Interest-Bearing Debt}} \times \text{GHG Emissions for Each Project} \right)^{*3}$ *3 Scope 1 related to power generation businesses; Scope 3 related to oil and gas businesses.
Year Analyzed	FY2021 The Norinchukin Bank investments and loans: Balance as of March 2022 Financial and emissions data: Available data for the most recent three years through March 2022
Emissions Data Source	● Loans, Bonds, and Stocks We used Trucost (external information vendor) for disclosures and estimate data related to investment and finance clients. If no information was available from Trucost, we estimated intensity using data from the PCAF database (by region, by sector). ● Project Financing (Power Generation Projects) We estimated this value using an estimate of annual power generation for the project in question*4 multiplied by the emissions factors*5 published by the European Investment Bank (EIB). *4 Calculated based on generating capacity x 24 hours x 365 days x capacity factor (value published by IEA). *5 Emission factors set to zero for renewable energy projects. ● Project Financing (Oil and Gas Projects) We estimated this value using the annual fuel consumption of the project in question multiplied by unit calorific value multiplied by the emissions factor multiplied by 44/12*6. *6 Referenced the Ministry of the Environment's GHG Emissions Accounting, Reporting, and Disclosure System formula for calculating energy-derived CO_2.

Results

The results of measuring GHG emissions for the assets described above amount to 33.0 million tCO_2e. The following is a breakdown based on the recommended sectors under the TCFD.

Sector	GHG Emissions (million t CO_2e)	Economic Intensity (t CO_2e/¥100 million)	Measurable Exposure (¥trillions)	Unmeasurable Exposure (¥trillions)
Electricity	6.4	488	1.3	0.06
Oil and Gas	2.3	527	0.4	0.03
Coal	0.0	310	0.0	0.00
Energy Subtotal	8.8	497	1.8	0.09
Air Cargo	0.1	181	0.1	0.00
Passenger Airlines	0.3	381	0.1	0.00
Marine Transport	0.6	369	0.2	0.00
Railroad	0.2	34	0.5	0.00
Truck Service	0.2	221	0.1	0.00
Automotive - Components	0.3	26	1.0	0.01
Transportation Subtotal	1.6	84	1.9	0.02
Metal and Mining	4.8	1,405	0.3	0.00
Chemicals	2.5	226	1.1	0.04
Construction	0.3	554	0.1	0.00
Capital Goods	1.5	56	2.6	0.08
Real Estate	0.1	6	0.8	0.01
Materials - Buildings Subtotal	9.1	185	4.9	0.14
Beverages	0.1	18	0.6	0.00
Agriculture	0.5	748	0.1	0.00
Packaged Foods - Meat	8.2	989	0.8	0.01
Paper and Forest Products	1.1	480	0.2	0.00
Agriculture - Food - Forest Products Subtotal	9.9	575	1.7	0.02
Above Sectors Total	29.4	286	10.3	0.27
All Sectors Total	33.0	150	21.9	1.97

*This table is based on current measurements and may change significantly in the future as companies expand emissions disclosures and refine measurements. We have not obtained third-party certification for the measurement results included in this table.

Supplementary Information on Measurement Results

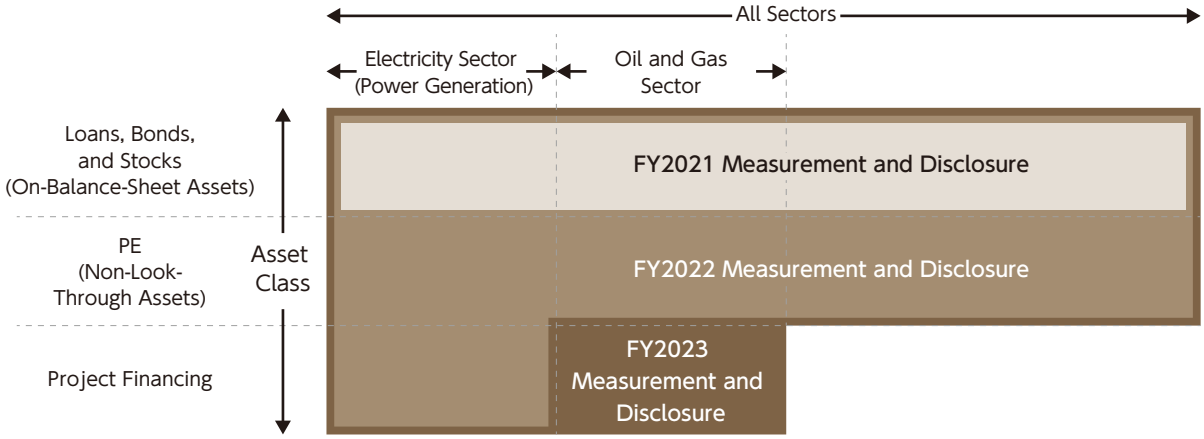
The measurements above encompass on-balance sheet investment and loan assets related to the Bank's business clients. Measurements for fund investments and loans include non-look-through assets in PE funds with data corrected for outliers, in addition to the look-through assets identified by specific company when calculating risk-weighted assets related to Basel requirements.

The measurable exposure above includes approximately ¥800 billion in project financing (power generation, oil and gas projects) and ¥100 billion in PE funds (non-look-through assets) when we began new measurements based on PCAF standards in fiscal 2022.

Investments and loans for group finance and captive finance are considered to be and measured as exposure on the part of the parent company from the viewpoint of measuring emissions in line with actual conditions as much as possible.

The inability to measure exposure above is mainly due to a lack of financial data.

(Reference) Expanded Scope of Investment and Finance Client Assets Measured for GHG Emissions



Calculation of Data Quality Score

The PCAF has established a data quality score to evaluate the quality of estimated emissions, as shown in the table below. The organization recommends that entities calculate this score.

For companies that do not disclose emissions data, we used emissions data from an external information vendor (Trucost), estimating emissions based on economic activities reflecting sales and emissions intensity by sector (or the median emissions intensity of the country in question if the investment and finance client industry is unclassified) as supplemental data (see the latest PCAF database, updated in FY2023).

To improve the calculation logic, we used the CDP database in addition to existing Trucost data. We derived Score 1 by determining the presence or absence of external certifications based on an individual company's responses to the CDP questionnaire. The data quality score calculated for this measurement is approximately 2.49, and we intend to continue improving our score.

High

Reliability

Low

Level	Methodology to measure financed emissions		
Score1	Company's disclosed data	1a	• There are data on the balances of investments and financing, and financial data of the target company. • Certified emissions are disclosed.
Score2	Company's disclosed data	1b	• There are data on the balances of investments and financing of the target company, and financial data of the target company. • Uncertified emissions are disclosed.
Score3	Company's disclosed data	2a	• There are data on the balances of investments and financing, financial data and energy consumption data of the target company, but emissions are not disclosed. • Emissions are computed using energy consumption and relevant coefficients.
Score4	Emissions based on economic activities	2b	• There are data on the balances of investments and financing, and financial data of the target company. Emissions are not disclosed. • Emissions are computed using production volume and emission intensity.
Score4	Emissions based on economic activities	3a	• There are data on the balances of investments and financing, financial data and sales data of the target company, but emissions are not disclosed. • Emissions are computed using sales and emission intensity.
Score4	Emissions based on economic activities	3b	• There are data on the balances of investments and financing of the target company, but emissions are not disclosed. • Emissions are computed using the data on the balances of investments and financing of the target company, as well as emission intensity per asset unit.
Score5	Emissions based on economic activities	3c	• There are data on the balances of investments and financing of the target company, but emissions are not disclosed. • Emissions are computed using the data on the balances of investments and financing of the target company, emission intensity per sales unit and asset turnover.

Future Response

Our latest analysis incorporates a more sophisticated approach and the inclusion of project financing to the scope of measurement. In the future, we plan to consider extending the scope of measurement to other assets for which the PCAF has finalized methodologies, once we have confirmed the availability and continuity of data.

An increasing number of entities pursue Scope 3 measurements (Categories 1-15), reflecting a growing awareness of the importance of understanding emissions throughout the value chain. At present, information available from vendors and the PCAF database for Scope 3 (Categories 1-15) is not comprehensive. With certain exceptions, we have not produced this disclosure, but we will continue to consider such disclosures in the future.

Carbon-Related Assets (Loans)

Sectors for disclosure have been expanded to reflect updated definitions of carbon-related assets based on the October 2021 revision of the TCFD Recommendations. Our carbon-related asset exposure (loans) as of March 31, 2023, was ¥7.4 trillion, representing 43.9% of total exposure (loans) across all sectors.

The Norinchukin Bank will continue to develop interim GHG emissions reduction targets for 2030 in line with the NZBA framework. Further, we will continue to pursue measures toward net-zero GHG emissions across our investment and loan portfolio by 2050, monitoring exposure appropriately.

March 2023 Exposure to Carbon-Related Assets*

Sector	Exp (Trillion yen)	Concentration Ratio
Electricity	0.8	4.6%
Oil and Gas	0.4	2.5%
Coal	0.0	0.0%
Energy Subtotal	1.2	7.2%
Air Cargo	0.0	0.2%
Passenger Airlines	0.0	0.3%
Marine Transport	0.1	0.8%
Railroad	0.4	2.1%
Truck Service	0.0	0.3%
Automotive - Components	0.8	4.6%
Transportation Subtotal	1.4	8.3%

Sector	Exp (Trillion yen)	Concentration Ratio
Metal and Mining	0.3	1.8%
Chemicals	0.6	3.7%
Construction	0.1	0.5%
Capital Goods	1.9	11.5%
Real Estate	1.0	6.1%
Materials - Buildings Subtotal	4.0	23.6%
Beverages	0.1	0.7%
Agriculture	0.1	0.6%
Packaged Foods - Meat	0.4	2.2%
Paper and Forest Products	0.2	1.4%
Agriculture - Food - Forest Products Subtotal	0.8	4.8%
Above Sectors Total	7.4	43.9%
All Sectors Total	16.9	100%

*The Norinchukin Bank loans, non-consolidated.

Nature-Related Metrics and Targets

Nature

Resources Used at Bank Facilities

	Unit	FY2020	FY2021	FY2022
Water Resource Inputs*1	m^3	82,129	63,614	49,629
Water Resource Inputs (per unit, gross floor space)	m^3	0.8	0.6	0.5
Paper Consumption*2	t	241	169	170
Waste Generated*3	t	181	163	115
Reuse*3	t	43	41	30

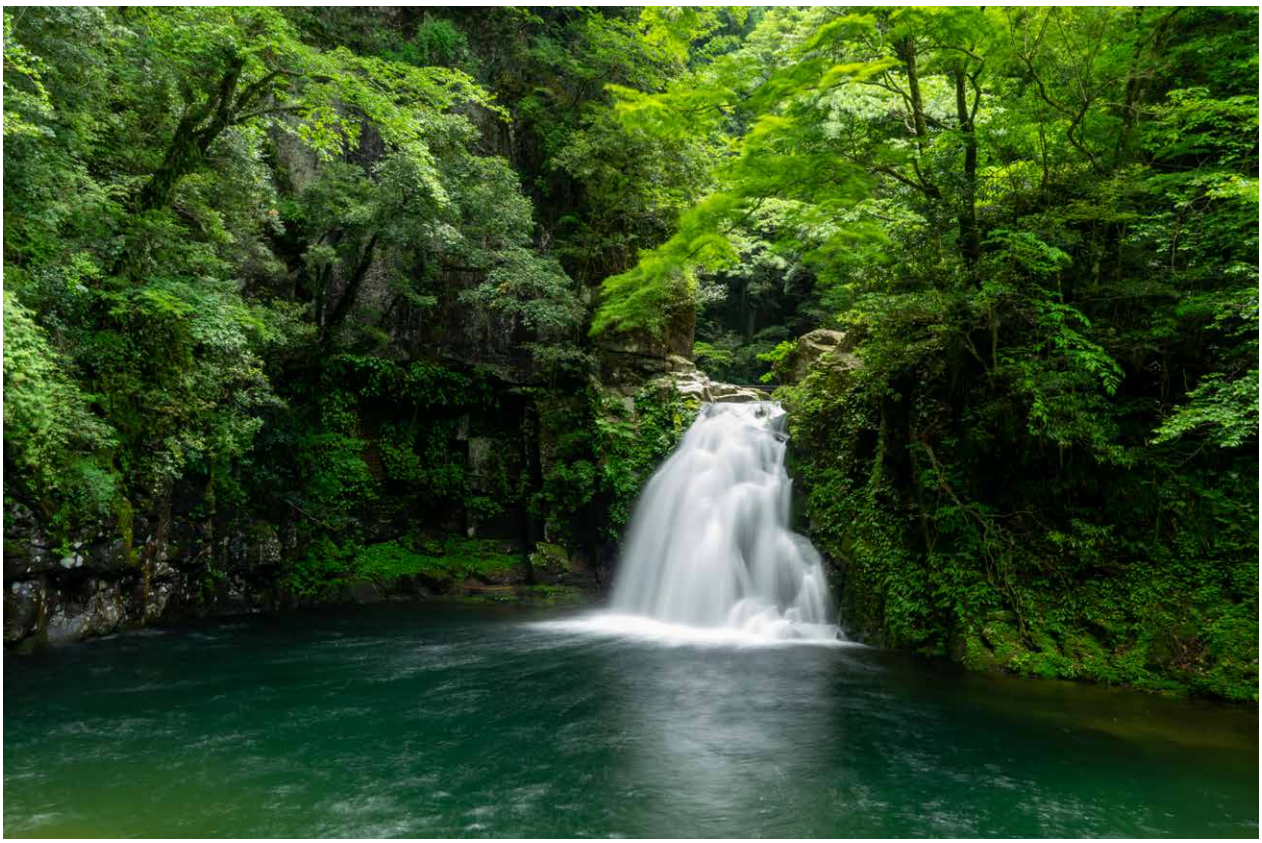
*1 Water consumption at The Norinchukin Bank Head Office Building (Otemachi one Tower), Akishima Center, and other group companies and overseas offices

*2 Amount of copy paper delivered to The Norinchukin Bank offices, group companies, and overseas locations

*3 Amount of waste generated at the The Norinchukin Bank Head Office Building (Otemachi one Tower), group companies, and overseas locations

Metrics Related to Dependencies and Impact-Related Exposure

On a trial basis, the Bank estimated the amount of nature-related exposure across our investment and loan portfolio. We determined the amount of exposure by classifying each sector into relevant natural capital and biodiversity categories. Then, we used ENCORE and the SBTN Materiality Screening Tool to categorize the degree of dependency and impact in one of five levels based on metrics for the nature-related dependencies and impact of Bank investment and finance client direct operations (including agriculture and certain other upstream value chains). As an example, we categorized dependency-related exposure from high to low for dependencies on climate, water resources, biodiversity, and land. We used ENCORE for each investment and finance client to link the scale of relevant nature-related metrics from the perspective of dependencies and impact, aggregating data by sector. Since a single investment and finance client can fall under multiple metrics for dependencies and impact, we aggregated data across all sectors. We only performed an analysis for direct operations. Our analysis does not indicate the amount of exposure related to dependencies and impact across entire value chains across the upstream and downstream of each sector. Therefore, figures may change in the future with greater sophistication in measurements and changes in scope.



March 2023 Dependency Metrics

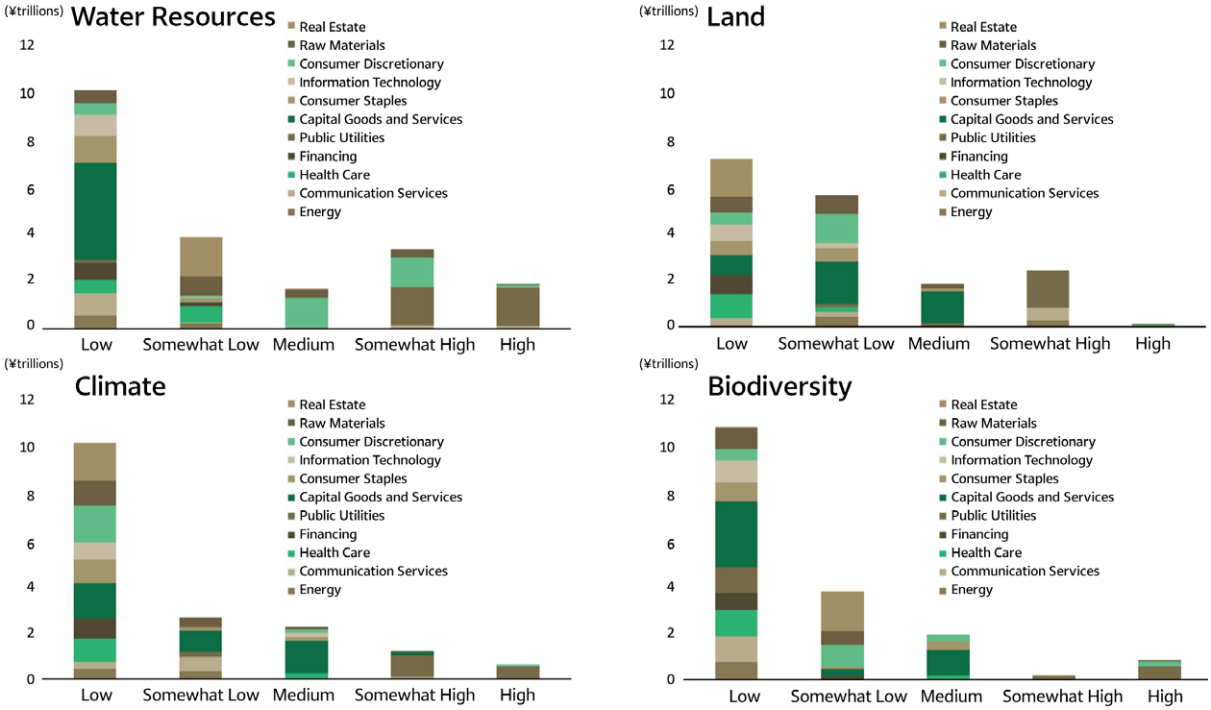
Dependency-Related, Exposure to Nature Across Investment and Loan Portfolio (% of total)

Degree of Dependency	High	Somewhat High	Medium	Somewhat Low	Low
Consumer Discretionary					
Climate	0.12	0.00	0.20	0.00	2.26
Water Resources	0.12	1.73	1.73	0.08	0.66
Biodiversity	0.52	0.00	0.36	1.21	0.66
Land	0.12	0.00	0.00	1.77	0.70
Public Utilities					
Climate	0.77	1.31	0.00	0.32	0.00
Water Resources	2.24	2.24	0.00	0.00	0.16
Biodiversity	0.77	0.16	0.00	0.00	1.47
Land	0.00	2.24	0.16	0.16	0.00
Raw Materials					
Climate	0.00	0.03	0.16	0.57	1.55
Water Resources	0.03	0.44	0.50	1.12	0.72
Biodiversity	0.05	0.00	0.00	0.77	1.20
Land	0.03	0.00	0.24	1.10	0.94
Capital Goods and Services					
Climate	0.00	0.21	2.00	1.29	2.19
Water Resources	0.00	0.00	0.00	0.04	5.65
Biodiversity	0.00	0.00	1.46	0.43	3.80
Land	0.00	0.00	1.91	2.60	1.18
Energy					
Climate	0.00	0.00	0.01	0.50	0.60
Water Resources	0.00	0.05	0.05	0.30	0.75
Biodiversity	0.00	0.05	0.04	0.00	1.02
Land	0.00	0.39	0.05	0.61	0.06
Communication Services					
Climate	0.00	0.14	0.05	0.85	0.46
Water Resources	0.14	0.14	0.00	0.05	1.31
Biodiversity	0.00	0.00	0.00	0.00	1.49
Land	0.00	0.74	0.00	0.30	0.46
Health Care					
Climate	0.00	0.00	0.29	0.00	1.42
Water Resources	0.00	0.00	0.00	0.95	0.76
Biodiversity	0.00	0.00	0.22	0.00	1.49
Land	0.00	0.00	0.00	0.29	1.42
Financing					
Climate	0.00	0.00	0.00	0.00	1.19
Water Resources	0.00	0.00	0.00	0.21	0.98
Biodiversity	0.00	0.00	0.00	0.21	0.98
Land	0.00	0.00	0.00	0.00	1.19
Consumer Staples					
Climate	0.00	0.00	0.21	0.21	1.45
Water Resources	0.06	0.00	0.00	0.24	1.58
Biodiversity	0.00	0.06	0.50	0.15	1.09
Land	0.00	0.00	0.18	0.82	0.87
Information Technology					
Climate	0.00	0.00	0.28	0.00	1.00
Water Resources	0.00	0.00	0.00	0.04	1.24
Biodiversity	0.00	0.00	0.00	0.00	1.28
Land	0.00	0.00	0.00	0.28	1.00
Real Estate					
Climate	0.00	0.00	0.00	0.00	2.28
Water Resources	0.00	0.00	0.00	2.28	0.00
Biodiversity	0.00	0.00	0.00	2.28	0.00
Land	0.00	0.00	0.00	0.00	2.28

Dependency-Related, Exposure to Nature Across Investment and Finance Client Portfolio (¥billions)

Degree of Dependency	High	Somewhat High	Medium	Somewhat Low	Low
Consumer Discretionary					
Climate	213	0	364	0	4,069
Water Resources	213	3,115	3,115	135	1,183
Biodiversity	929	0	642	2,172	1,183
Land	213	0	0	3,177	1,256
Public Utilities					
Climate	1,384	2,356	0	575	0
Water Resources	4,024	4,024	0	0	290
Biodiversity	1,384	285	0	0	2,646
Land	0	4,029	290	285	0
Raw Materials					
Climate	0	45	289	1,032	2,786
Water Resources	45	792	895	2,016	1,299
Biodiversity	82	0	0	1,393	2,155
Land	45	0	430	1,983	1,694
Capital Goods and Services					
Climate	0	380	3,596	2,323	3,945
Water Resources	0	0	0	74	10,171
Biodiversity	0	0	2,632	772	6,841
Land	0	0	3,443	4,675	2,127
Energy					
Climate	0	0	18	892	1,078
Water Resources	0	86	86	548	1,355
Biodiversity	0	86	66	0	1,837
Land	0	706	86	1,097	100
Communication Services					
Climate	0	253	84	1,522	832
Water Resources	253	253	0	84	2,354
Biodiversity	0	0	0	0	2,691
Land	0	1,324	0	535	832
Health Care					
Climate	0	0	513	0	2,563
Water Resources	0	0	0	1,707	1,370
Biodiversity	0	0	397	0	2,680
Land	0	0	0	513	2,563
Financing					
Climate	0	0	0	0	2,142
Water Resources	0	0	0	380	1,762
Biodiversity	0	0	6	380	1,756
Land	0	0	6	0	2,136
Consumer Staples					
Climate	0	0	383	377	2,617
Water Resources	99	0	0	438	2,839
Biodiversity	0	99	896	265	1,968
Land	0	0	328	1,478	1,570
Information Technology					
Climate	0	0	499	0	1,804
Water Resources	0	0	0	64	2,238
Biodiversity	0	0	0	0	2,303
Land	0	0	0	499	1,804
Real Estate					
Climate	0	0	0	0	4,111
Water Resources	0	0	0	4,111	0
Biodiversity	0	0	0	4,111	0
Land	0	0	0	0	4,111

Source: The Norinchukin Bank



Source: The Norinchukin Bank

Dependency on Water Resources

Utilities (power, water, etc.), consumer staples (the agriculture and food sectors, etc.), and materials (chemicals, pulp and paper, etc.) tend to be highly dependent on water due to heavy use in direct operations. Water is important in the semiconductor manufacturing process, meaning that this and related sectors are highly dependency on water resources.

Dependency on Land (Soil Quality, Land Stability, Etc.)

Soil quality is extremely important for the consumer staples sector (agriculture, etc.), and dependency on soil quality is high. cretionary (manufacturing, etc.) sectors, dependency is relatively high since stable ground is essential for equipment.

Dependency on Climate

Dependency on the climate is extremely high for consumer discretionary (agriculture, etc.) and utilities (wind power generation, etc.). For example, wind power generation is extremely dependent on climate, since wind power cannot operate without a certain amount of wind.

Dependence on Biodiversity

Dependency on biodiversity is extremely high in consumer staples (agriculture, etc.) and utilities (electricity, etc.). For example, we can infer that wood-derived biomass power generation is highly dependent on forest resources, particularly as such relates to renewable energy for utilities.

March 2023 Impact Metrics

Exposures Related to Impact on Nature Across the Bank's Investment and Loan Portfolio (¥billions)

Impact Driver	High	Somewhat High	Medium	Somewhat Low	Low
Consumer Discretionary					
Maritime Use	891	0	0	1,523	17,037
Solid Pollution	0	0	0	15,497	3,954
Water Pollution	891	0	0	17,037	1,523
Freshwater Ecosystem	891	0	0	0	18,560
Freshwater Use	0	891	0	17,037	1,523
Use of Natural Resources	0	0	891	2,688	15,872
Soil Pollution	891	0	7,657	9,380	1,523
Land Use	891	0	1,540	0	17,020
Non-GHG Air Pollution	0	0	1,523	3,717	14,211
Public Utilities					
Maritime Use	0	0	0	7,007	11,055
Solid Pollution	0	0	10,541	7,007	514
Water Pollution	0	10,541	0	0	1,728
Freshwater Ecosystem	0	10,541	5,793	514	1,214
Freshwater Use	5,793	10,541	0	514	1,214
Use of Natural Resources	0	0	0	0	18,062
Soil Pollution	5,793	10,541	0	0	1,728
Land Use	0	5,793	10,541	1,728	0
Non-GHG Air Pollution	0	0	16,334	0	1,728
Raw Materials					
Maritime Use	0	0	0	979	16,407
Solid Pollution	0	2,951	1,801	9,044	3,590
Water Pollution	0	1,801	6,777	5,308	3,501
Freshwater Ecosystem	0	0	0	2,190	15,196
Freshwater Use	0	2,951	8,697	5,548	189
Use of Natural Resources	0	0	0	0	17,386
Soil Pollution	0	1,801	10,234	4,626	536
Land Use	0	189	4,712	7,959	4,526
Non-GHG Air Pollution	0	5,051	7,178	4,968	189
Capital Goods and Services					
Maritime Use	0	3,541	0	13,615	25,738
Solid Pollution	0	0	0	21,666	21,228
Water Pollution	0	0	3,232	17,735	21,927
Freshwater Ecosystem	0	0	309	6,094	36,491
Freshwater Use	0	0	2,471	18,767	21,657
Use of Natural Resources	0	0	0	0	42,894
Soil Pollution	0	0	17,343	6,094	19,456
Land Use	0	0	6,094	309	36,491
Non-GHG Air Pollution	0	0	27,828	10,830	4,236
Energy					
Maritime Use	0	358	0	3,376	4,592
Solid Pollution	0	0	276	3,072	4,979
Water Pollution	0	0	0	3,348	4,979
Freshwater Ecosystem	0	0	358	3,453	4,515
Freshwater Use	0	0	2,879	5,447	0
Use of Natural Resources	0	0	0	0	8,326
Soil Pollution	0	0	2,990	358	4,979
Land Use	0	0	435	5,592	2,299
Non-GHG Air Pollution	0	0	5,095	276	2,955

Impact Driver	High	Somewhat High	Medium	Somewhat Low	Low
Communication Services					
Maritime Use	0	0	0	351	10,914
Solid Pollution	0	0	0	9,027	2,239
Water Pollution	0	0	0	4,543	6,723
Freshwater Ecosystem	0	0	0	351	10,914
Freshwater Use	0	0	0	4,543	6,723
Use of Natural Resources	0	0	0	0	11,265
Soil Pollution	0	0	4,894	0	6,372
Land Use	0	0	0	4,484	6,781
Non-GHG Air Pollution	0	0	0	4,543	6,723
Health Care					
Maritime Use	0	0	0	2,150	10,733
Solid Pollution	1,660	0	0	8,851	2,371
Water Pollution	0	0	1,660	7,846	3,376
Freshwater Ecosystem	0	0	0	0	12,882
Freshwater Use	0	0	0	8,353	4,530
Use of Natural Resources	0	0	0	0	12,882
Soil Pollution	0	0	8,353	1,154	3,376
Land Use	0	0	0	0	12,882
Non-GHG Air Pollution	0	0	2,150	8,353	2,380
Financing	0	0	1,616	13,817	65,297
Maritime Use	0	0	0	0	8,970
Solid Pollution	0	0	0	8,970	0
Water Pollution	0	0	0	1,616	7,354
Freshwater Ecosystem	0	0	0	0	8,970
Freshwater Use	0	0	0	0	8,970
Use of Natural Resources	0	0	0	0	8,970
Soil Pollution	0	0	0	1,616	7,354
Land Use	0	0	1,616	0	7,354
Non-GHG Air Pollution	0	0	0	1,616	7,354
Consumer Staples					
Maritime Use	0	0	0	2,045	12,095
Solid Pollution	0	0	415	12,061	1,663
Water Pollution	0	0	0	10,336	3,803
Freshwater Ecosystem	0	0	0	675	13,465
Freshwater Use	0	0	530	8,964	4,645
Use of Natural Resources	0	0	0	0	14,139
Soil Pollution	0	0	8,160	2,558	3,422
Land Use	0	0	1,076	415	12,648
Non-GHG Air Pollution	319	0	2,628	8,612	2,581
Information Technology	0	0	8,635	16,385	61,747
Maritime Use	0	0	0	270	9,371
Solid Pollution	0	0	0	6,646	2,994
Water Pollution	0	0	0	6,546	3,094
Freshwater Ecosystem	0	0	0	0	9,641
Freshwater Use	0	0	1,819	1,914	5,907
Use of Natural Resources	0	0	0	0	9,641
Soil Pollution	0	0	6,546	0	3,094
Land Use	0	0	0	0	9,641
Non-GHG Air Pollution	0	0	270	1,008	8,363
Real Estate					
Maritime Use	0	0	0	0	17,213
Solid Pollution	0	0	0	17,213	0
Water Pollution	0	0	0	17,213	0
Freshwater Ecosystem	0	0	0	0	17,213
Freshwater Use	0	0	0	0	17,213
Use of Natural Resources	0	0	0	0	17,213
Soil Pollution	0	0	0	17,213	0
Land Use	0	0	17,213	0	0
Non-GHG Air Pollution	0	0	0	17,213	0

Nature-Related Footprinting Metrics

The Bank experimented with measuring nature-related footprinting metrics across our portfolio, referencing the discussion paper* regarding the footprinting approach for financial institutions published by the TNFD.

In collaboration with the Norihiro Itsubo Lab at Waseda University, we conducted a trial calculation of footprinting indicators using LIME3. We used the expected increase in number of extinct species (EINES; metric of biodiversity extinction risk) to analyze the impact on biodiversity of climate change used in the life cycle assessment contained in our strategy, quantifying the extent of climate-change-related biodiversity damage associated with our investment and loan portfolio.

The following chart indicates the EINES for each sector (GICS 10 sectors) in Japan, North America, and Europe, the Bank's primary investment and loan regions.

Biodiversity Damage Metric EINES (Expected Increase Number of Extinct Species)

Sector	Japan		North America		Europe	
	EINES Overall Ratio	EINES Metrics	EINES Overall Ratio	EINES Metrics	EINES Overall Ratio	EINES Metrics
Consumer Discretionary	42.40%	1.E-01	3.72%	1.E-02	0.01%	3.E-05
Capital Goods and Services	10.99%	3.E-02	3.14%	8.E-03	0.02%	6.E-05
Consumer Staples	3.47%	9.E-03	5.28%	1.E-02	0.01%	4.E-05
Real Estate	2.38%	6.E-03	0.00%	1.E-05	0.00%	7.E-07
Raw Materials	2.05%	5.E-03	0.65%	2.E-03	0.00%	5.E-06
Information Technology	1.35%	3.E-03	1.65%	4.E-03	0.00%	2.E-06
Public Utilities	1.27%	3.E-03	0.51%	1.E-03	0.00%	7.E-07
Energy	0.87%	2.E-03	0.59%	2.E-03	0.00%	4.E-06
Communication Services	0.62%	2.E-03	2.58%	7.E-03	0.02%	6.E-05
Health Care	0.31%	8.E-04	16.07%	4.E-02	0.01%	2.E-05

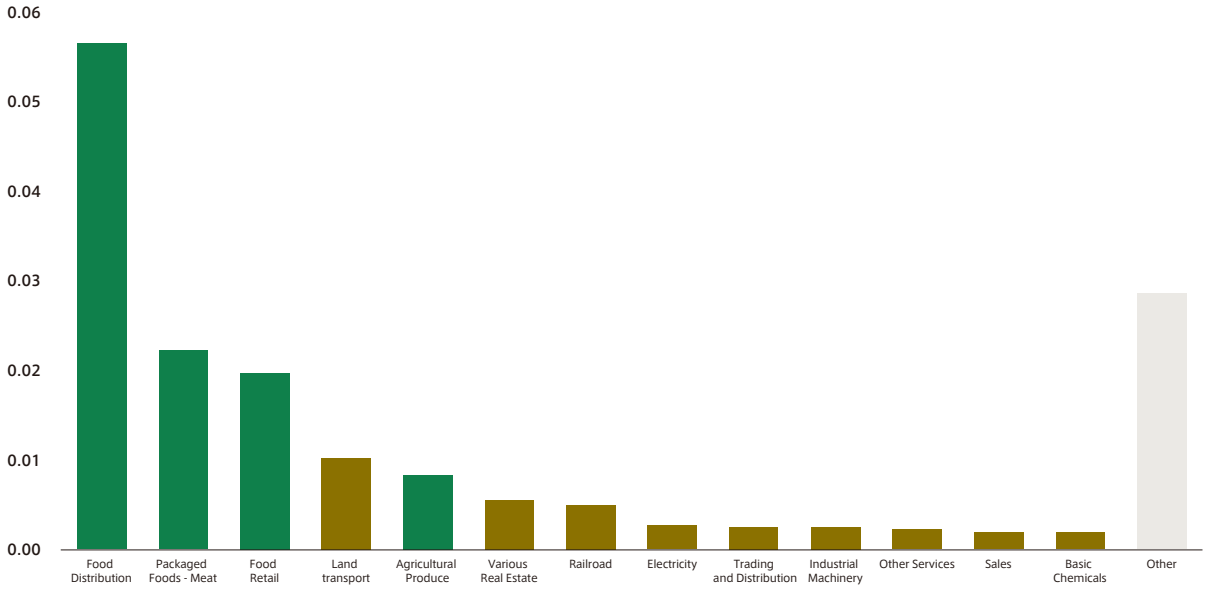
Note: The EINES metric is a metric related to extinction risk, expressed as an index since the value is smaller for sectors with smaller impacts (1.E-03 equals 1 minus 3 squared, or 0.001)

Source: The Norinchukin Bank based on analysis conducted at the Norihiro Itsubo Lab, Waseda University

*_Discussion paper on biodiversity footprinting approaches for financial institutions_, TNFD

Looking at a breakdown of the industry subgroups (156 subgroups) of the GICS sector categories (10 categories) above, we found that food-related sectors such as food distribution, packaged foods and meats, and food retailing showed relatively high values. GHG emissions from the production and distribution of agricultural and agri-materials in the supply chain may be a significant contributor and the reason the EINES metric for Japan is so high.

EINES Metrics for Each Sector in Japan



Source: The Norinchukin Bank based on analysis conducted at the Norihiro Itsubo Lab, Waseda University

The Norichukin Bank Contribution to the Kunming-Montreal Biodiversity Framework (GBF)

Given the nature of our business, we believe financial institutions play an important role in achieving the GBF. These characteristics include lending and investment activities in high-impact and highly dependent sectors.

We listed the 23 most relevant targets toward the GBF in terms of the Bank's efforts during fiscal 2023.

GBF Target	Relevance to Financial Institutions	Status of the Bank's Initiatives
Targets 1 to 4	Target 3 includes a 30 by 30 goal (conserve 30% of terrestrial and marine habitat by 2030), requiring actors to work with stakeholders.	•Support for Japan's fishery cooperatives and fishermen to certify *"Shizen kyosei"* sites •Pursue sustainable forest management with Jforest
Targets 5 to 8	Targets 7 and 8 describe reducing pressure on biodiversity from human activities, including responses to plastic pollution, fertilizers and pesticides, other chemicals, and climate change. These requirements relate to both the Bank and our investment and finance clients.	•Committed to Net Zero by 2050. Based on this commitment, we established GHG reduction targets for our investment and loan portfolio, seek engagement, etc. •Conducted footprinting analysis of the impact of climate change on biodiversity (species extinction risk)
Targets 9 to 13	Target 10 calls for closing the gap between the resilience of nature and production through the appropriate and sustainable management of agriculture, fisheries, and forestry. We have high expectations for initiatives in partnership with our members.	•Support increased income for agriculture, forestry, and fisheries workers based on medium- to long-term targets (consult for agricultural businesses, support for forming carbon credits derived from agriculture, forestry, and fisheries). •Conducted scenario analysis (chronic risk in climate change) in agriculture and fisheries
Target 14	Target 14 calls for policies, regulations, and an environment in which private and public funding by financial institutions and firms to practice activities consistent with the GBF.	•Participating in global rulemaking on nature-related financial disclosures as a member of the TNFD taskforce. •Participating as a member of the Ministry of the Environment's Study Group on Nature Positive Economies, contributing to discussions ensuring business and funding in Japan are consistent with nature positive.
Target 15	Target 15 requires both the Bank and portfolio companies to identify, assess, and transparently disclose dependencies, impacts, and risks on biodiversity in the context of business operations, value chains, and portfolios.	•Began initial disclosures in FY2022 referencing TNFD Beta v0.4. •Analyzed dependencies and impacts based on business, value chain, and portfolio in this report, providing disclosures based on the official v1.0 of the TNFD.
Target 19	Target 19 requires various actors to engage in private finance and public-private financing and investment partnerships that contribute to biodiversity (blended finance, use of impact funds, etc.).	•Investments in World Bank bonds designed to contribute to biodiversity
Target 21	Target 21 emphasizes the importance of engagement. Financial institutions are expected to encourage and accompany their investment and finance clients in developing and implementing transition plans toward nature positive.	•Started dialogues on natural capital and biodiversity with several clients, mainly in the food, chemical, and other industries. Providing consulting and solutions support to certain clients, including TNFD disclosure support.

Source: UNEP FI PRB Nature Target Setting Guidance

7 Future Works

Climate Nature

Responding to climate change is becoming increasingly urgent. Achieving the 1.5℃ target will be impossible without protecting and restoring nature. The response to nature itself is also becoming increasingly urgent. The challenges related to climate and nature are inseparable. We must view these challenges in an integrated manner to be addressed steadfastly.

However, as with the agriculture, fishery and forestry industries we serve, efforts to deal with climate and nature will not produce changes and results overnight. This is why it is better to start now, rather than later. The agriculture, fishery and forestry industries, as well as our local communities, engage in activities that give birth to, nurture, and create threads through life. And those myriad living ecosystems lead into the future, forming the societies in which we live. With this philosophy in mind, The Norinchukin Bank will continue to take on the challenge of achieving net zero and nature positive, executives and employees working hand in hand with stakeholders.

Outlook for Responding to Climate Change Issues

To reduce financed emissions, the Bank will continue to set additional targets and expand the scope of emissions measurements across our investment assets (currently focused on bonds and equities for business enterprises). Our activities will respond to needs for initiatives tailored to the characteristics of our portfolio and industrial sectors served.

Our loan portfolio already incorporates interim reduction targets for the power, oil and gas, steel, and coal sectors. We will continue to set and publish targets for FY2024, focusing on sectors with high emissions.

In addition, we will continue our transition plan and enhance disclosure through expanded scenario analysis, more sophisticated risk management, and deeper engagement with investees, borrowers, and other stakeholders in support of our goals.

Outlook for Responding to Nature and Biodiversity Issues

The Norinchukin Bank will continue efforts to manage risk and capture opportunities, expanding our analyses of the dependencies and impact of our investment and loan portfolio on nature and on value chains, and extending location and scenario analysis.

As we utilize the results of our analyses, we will support the efforts of our investees and borrowers to become nature positive, conducting dialogues in collaboration with business partners. We will also expand engagement and consulting offered to food and agriculture-related industries, and pursue external collaborations and network-building.

As the Bank engages in these measures consistently, we will develop a transition plan and set goals to achieve nature positive.

To the best of our abilities, we will remain aware of the climate and nature nexus, which is the intersection between climate and nature. We will continue to develop more sophisticated analysis skills and create transition plans. In this context, we recognize the co-benefits and trade-offs of climate and nature, and we will work with local stakeholders and partners in initiatives toward nature positive.

In pursuing these many efforts, we will also consider the perspective of the circular economy, which is indispensable for achieving net zero and nature positive societies. Further, the Bank will seek approaches to solve climate and nature issues in parallel.

In these difficult and uncertain times, The Norinchukin Bank firmly sows seeds for the next 100 years to ensure an unbroken chain of life. We contribute to sustainable agriculture, forestry, fisheries, economies, and societies through positive impacts leveraging the power of cooperative organizations and financing.

Appendix

● 1 Climate Change: Transition Risk Scenario Analysis

Methodology for Transition Risk Scenario Analysis

■ Analysis Target and Sectors

We analyzed the electricity, oil-gas-coal, food and agriculture, beverage and chemical sectors as targets for transition risk scenario analysis based on the results of our qualitative assessment of climate change-related risks. The final TCFD report and SASB recognize the electricity, oil-gas-coal, and chemical sectors as high carbon-emitting sectors that are highly vulnerable to transition risks. We strive to select target sectors based on these global views. We selected the food and agriculture and the beverages sectors based not only on our climate change qualitative assessment results, but also due to these two sectors representing the foundation of the Bank. Considering the characteristics of our investment and loan portfolio, this analysis targeted not only domestic and overseas borrowers, but also our investees in corporate bonds.

■ Analysis Scenarios and Data

The Norinchukin Bank uses the three scenarios published by the NGFS. The Current Policies scenario assumes that only current policies will be maintained, while the Delayed Transition scenario assumes that annual GHG emissions will not decline by 2030. Rather, this scenario assumes that strict policies will be implemented after 2030. The Net Zero 2050 scenario assumes that global temperatures will not rise more than 1.5°C from rigorous climate polices and technological innovation, and that net zero CO_2 emissions will be reached by 2050. The Bank adopts these three scenarios as future scenarios. We predicted impact on Bank investees and borrowers and analyzed fluctuations in credit costs by integrating scenario data with dynamic and static approaches. A dynamic approach refers to a company making new capital investments in response to climate change, while a static approach refers to a company not making additional capital investments in response.

- For any analytical data shortages in the NGFS scenarios, we incorporated various supplementary data from the IEA World Energy Outlook 2021 for analysis of the electricity and oil-gas-coal sectors. The IEA World Energy Outlook is a prominent source used around the globe. Incorporated data includes the Sustainable Development Scenario (SDS), the Stated Policies Scenario (STEPS), and the Net Zero Emissions by 2050 Scenario. These sources incorporate measures consistent with achieving the 2℃ target of the Paris Agreement and currently announced policies and targets, respectively.
- For data shortages in the chemical sector, we refer to the IEA Energy Technology Perspectives 2022, as well as the STEPS and SDS scenario data of the IEA Ammonia Technology Roadmap October 2021.
- For the food and agriculture and beverage sectors, we used supplementary FAO forecast data and future scenarios. Future scenarios include the sustainability scenario (TSS), which assumes changes are made proactively to establish sustainable food and agriculture systems, and the status quo scenario (BAU), which assumes that past trends and policy directions are maintained.

■ Enhancing Scenario Analysis Models

- The Norinchukin Bank began disclosing the results of our scenario analyses in our Sustainability Report 2021. We work to enhance our models to better explain and leverage analysis results in engagement (constructive dialogue).
- One way we improve analytical models is by altering parameters (variables) to produce more precise and practical results. We will continue enhancing these models to refine analysis results.

Our transition risk scenario analysis adopts version 2 of the NGFS scenario published in 2021. Of the three NGFS models, we analyze scenarios using the values of the REMIND-MAgPIE model. These values were also used in the Pilot Scenario Analysis Exercise on Climate-Related Risks Based on Common Scenarios by the Financial Services Agency and the Bank of Japan, the results of which were published in August 2022.

Overview of NGFS Scenarios Analyzed

	NetZero 2050	Delayed Transition	Current Policies
Overview	Limits rise in global temperatures to 1.5˚C through strict climate policies and technological innovation, reaching net zero CO_2 emissions by 2050	Assumes annual CO_2 emissions will not decrease until 2030, followed by strict policies	Assumes that only current policies will be retained
Rise in temperature (by 2100)	Less than 1.5℃	Approx. 1.8℃	Approx. 3℃

Each NGFS scenario analyzes from different forecasted perspectives. The Net Zero 2050 scenario assumes that countries implement immediate, strict climate change policies and regulations, thereby reducing corporate CO_2 emissions. On the other hand, the Current Policies scenario assumes that CO_2 emissions will not be curbed, while the Delayed Transition scenario assumes rapid decline in CO_2 emissions starting in 2030 after implementation of strict measures and policies.

A carbon price refer to the price assigned to CO_2 emitted from companies and others entities. Each scenario assumes that governments would impose taxes on carbon based on the amount of CO_2 emitted. For example, Japan introduced a restrictive carbon tax to address global warming, which the Current Policies scenario assumes will be maintained. While tax per ton of CO_2 emissions is assumed to be limited, the Net Zero 2050 and Delayed Transition scenarios assume significant introductions of carbon tax. The Bank assumes the introduction of a carbon tax in our scenario analysis, and we reflect impacts on corporate earnings and other factors in the analysis results.

The Net Zero 2050 and Delayed Transition scenarios aim for carbon neutrality by 2050. In these scenarios, solar power, wind power, and other renewable energy sources serve as the main energy sources to reduce CO_2 emissions. At the same time, power generation that emits large amounts of CO_2 using coal and natural gas is reduced in these scenarios.

● 2 Climate Change: Physical Risk (Acute Risk) Scenario Analysis for Flood Damage

Physical Risk (Acute Risk) Scenario Analysis Method

Flooding has caused significant damage around the globe in recent years. In response, we conducted a scenario analysis of flood damage, analyzing impacts up to the year 2100. This analysis targets global key locations of domestic and overseas borrowers, as well as impacts of flooding on real estate collateral pledged to the Bank. Targets also include assets (buildings and fixtures) of Bank group locations in the analysis. Our analysis is based on the Intergovernmental Panel on Climate Change (IPCC) scenario. We analyzed risks, referring to the methodology stipulated in *A Guide to Flood Risk Assessments for Enhanced TCFD Disclosures* by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

We first narrowed down target industries, as certain borrower businesses are insusceptible to flooding. Next, we identified locations in each industry sector that would be affected by flooding and reduce company sales. After identifying these locations, we surveyed the impact on the key global locations of the borrower and analyzed supply chains for acute risk.

We also analyzed real estate collateral pledged to the Bank, as flooding affects credit costs through impacts to assessed values of such collateral. Impact on our portfolios is analyzed by factoring in impact on the borrower and real estate collateral.

Flooding causes damage and asset deterioration, affecting assets (buildings and fixtures) of Bank group domestic and overseas locations. The Bank analyzed these assets and calculated the final addition loss.

Physical Risk (Acute Risk) Analysis

We estimate the total acute risk impact to be a cumulative additional loss of approximately 23 billion yen by 2100 (sum of credit costs and the amount of damage to the Bank group assets), with limited impact of the additional losses. The percentage of key global locations with deeper estimated flood depths is relatively higher in Japan compared with domestic and overseas borrowers by region (Japan, the Americas, Europe/Middle East, and Asia/Oceania). Moreover, no overseas regions indicated outstanding percentages, with minimal regional differences.

● 3 Climate Change: Physical Risk (Chronic Risk) Scenario Analysis on the Agriculture Sector
(Reprinted From Sustainability Report 2022)

We conducted a scenario analysis of chronic risks in the agricultural sector, a sector of importance to the bank. Under the TCFD recommendations, the agricultural sector is considered vulnerable to the impacts of climate change. We believe climate change in the agricultural, fishery and forestry industries will have a significant impact on the continuity of the Bank's business, which is why we conducted this analysis. Note that scenario analysis for the agricultural sector is based on multiple assumptions and hypotheses due to the many limitations of the model: (1) no internationally accepted methods have been established, (2) the data is incomplete, and (3) the impact pathways are diverse and complex. Also note that the analysis targets revenue, not income (i.e., revenue minus expenses, etc.), and thus may differ from the actual impact on agricultural operations.

Our analysis covered rice cultivation and livestock production (milk and beef cattle), which has the largest number of farmers engaged and the greatest production volume. Our analysis estimated the impact of rising temperatures and other factors associated with climate change on the production volume and prices of the commodities analyzed. Finally, we estimated the impact on producer revenue.

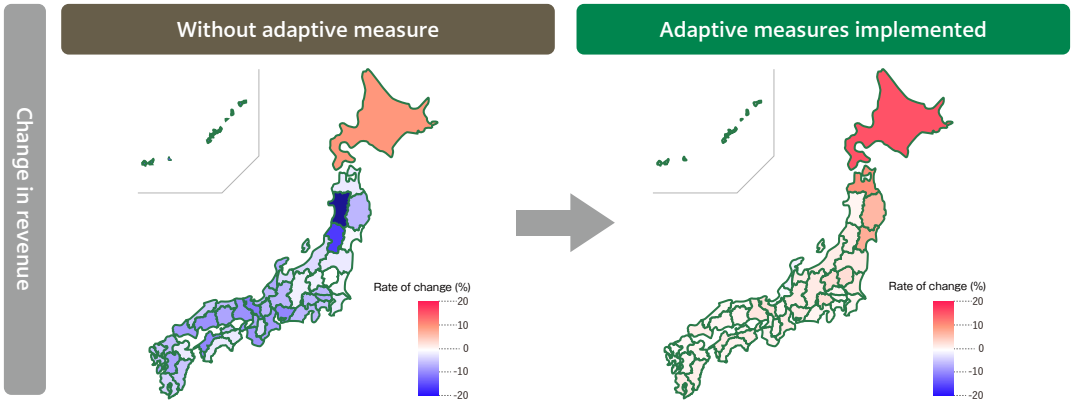
For beef cattle, we conducted separate analyses, assuming that Japanese Wagyu and other domestic cattle have different heat tolerances.

This analysis estimated the change in revenue as of the end of the 21st century compared to the end of the 20th century in two scenarios: (1) one in which no measures are taken to adapt to rising temperatures and (2) one in which measures are taken to adapt to rising temperatures.

Item	Scenario	Impact on Production Volume	Price Impact	Revenue (No Adaptation Measures Taken)	Revenue (Adaptation Measures Taken)
Rice crop	4℃ increase	Nationwide production decreases by -6.4% as the optimum temperature for rice cultivation is exceeded across nearly the entirety of the country.	Rice quality (first-class rice ratio) deteriorates, but prices rise by +1.4% due to lower production.	By the end of the 21st century, revenue may decrease by 5.0% due to lower production volumes and quality compared to the end of the 20th century.	Nationwide revenues increase by 3.5% (+8.5% if measures are taken) due to the introduction of (1) rice varieties tolerant to high temperatures and (2) measures such as postponing rice transplant dates by one to two months.
	2℃ increase	Nationwide production increases by +3.3% as a wide range of regions, particularly in eastern Japan, experience more suitable temperatures for rice cultivation.	Prices decrease -1.6% due to increased production and a slight deterioration in quality.	Revenue from rice cultivation would increase with greater amounts of land suitable for rice cultivation, resulting in a +1.7% increase in revenue by the end of the 21st century.	—
Raw Milk	4℃ increase	Seasonal differences become significant throughout the year. While there is no significant impact in winter, in summer, the hot environment affects milk production, resulting in a decrease of -4.0% during summer, with a decrease of -1.1% in annual production nationwide.	Milk prices are likely to increase due to a decrease in milk production as a result of higher temperatures, resulting in a +0.9% rise in prices for a 4°C increase.	Milk production revenue decreases by no more than 0.1% by the end of the 21st century compared to the end of the 20th century. This result is due to an increase in prices to offset the impact of lower production volume.	We conducted our analysis assuming the adoption of and advancements in fine misting equipment used as an adaptation measure in raw milk production. The analysis shows that adaptation measures should limit the impact of increasing temperatures and ensure that revenues remain flat.
	2℃ increase	There is essentially no precipitation factor and a slight decrease in annual production of -0.2% due to rising temperatures. While production remains unchanged from winter to spring, summer production will decrease by roughly -1.0% across all regions.	Milk prices are likely to increase due to a decrease in milk production as a result of higher temperatures, resulting in a +0.2% rise in prices for a 2℃ increase.	Milk production revenue remains steady at a maximum of ± 0.0% at the end of the 21st century compared to the end of the 20th century. This result is due to an increase in prices to offset the impact of lower production volume.	—
Beef Cattle	4℃ increase	The rise in temperature affected cattle fattening, resulting in a decrease of -0.8% in Wagyu beef carcass production and a decrease of -1.6% in the beef carcass production of domestic cattle, resulting in a -1.2% decrease in the beef carcass production nationwide.	Prices are expected to increase by 0.6% due to supply and demand factors, as well as subsidies from the Beef Marukin system.	Revenue decreases by a maximum of 0.6% at the end of the 21st century compared to the end of the 20th century. While wagyu revenue will increase slightly, domestic beef revenue may decrease by 1.4%, mainly due to lower production volumes.	We conducted our analysis assuming the adoption of and advancements in fine misting equipment used as an adaptation measure, similar to that used in raw milk production. As with raw milk production, our analysis indicates that adaptive measures can ensure flat or modest increases in revenue.
	2℃ increase	Japanese Wagyu cattle, domestic cattle, and national production experienced minor decreases at -0.2%, -0.4%, and -0.3%, respectively.	Prices are expected to increase by +0.2% due to supply and demand factors, as well as subsidies from the Beef Marukin system.	Revenue decreases by a maximum of 0.2% at the end of the 21st century compared to the end of the 20th century. While wagyu revenue will increase slightly, domestic beef revenue may decrease by 1.4%, mainly due to lower production volumes.	—

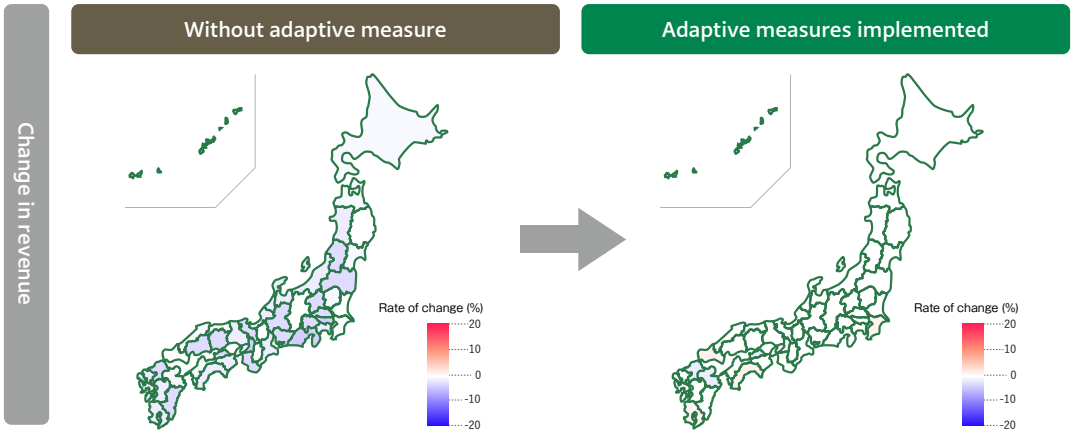
We examined the effects of adaptation measures used in previous studies, etc., as well as measures for which the technology has been established and adopted in real-world practice. We analyzed the effects of these technologies on climate change, particularly temperature increase, within the model, referencing previous studies. We did not take into account the cost of adaptation measures in terms of revenue impact. Cost effectiveness must be considered when introducing adaptation measures in the real world.

Rice Crop Analysis Results (4° C Increase (RCP8.5))



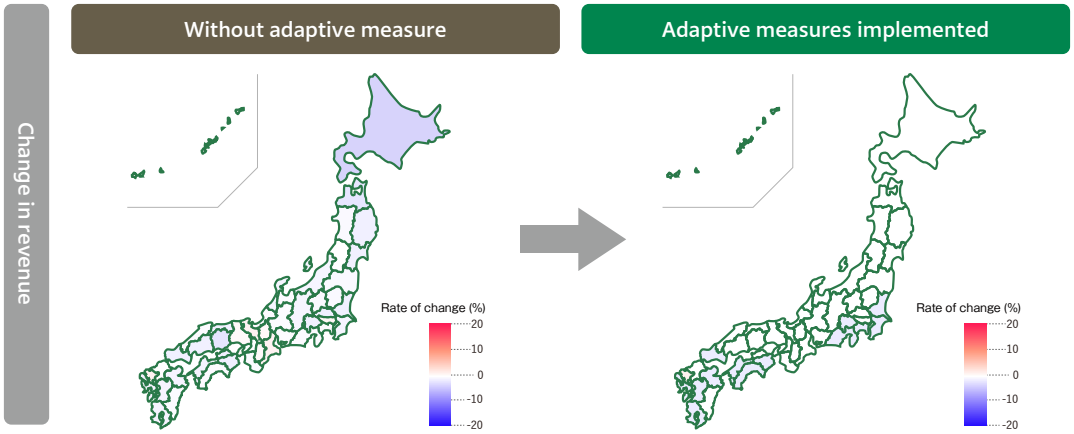
4In the case of a 4℃ increase, nationwide revenues increase by 3.5% (+8.5% if measures are taken) due to the introduction of (1) rice varieties tolerant to high temperatures and (2) measures such as postponing rice transplant dates by one to two months. The Bank omitted costs of adaptive measures at this time due to difficulties in calculation (for both dairy and beef cattle). Note that revenues may decline in the income phase, during which expenses are subtracted from income.

Raw Milk Analysis Results (4° C Increase (RCP8.5))



We conducted our analysis assuming the adoption of and advancements in fine misting equipment used as an adaptation measure in raw milk production. The analysis shows that adaptation measures should limit the impact of increasing temperatures and ensure that revenues remain flat. Note that revenues may decline in the income phase.

Beef Cattle Analysis Results (4° C Increase (RCP8.5))



Both beef cattle and milk production analyses are based on the assumption that measures include the uptake and enhancement of fine mist equipment. As with raw milk production, our analysis indicates that adaptive measures can ensure flat or modest increases in revenue. Note that revenues may decline in the income phase.

・Analysis Details

We referred to previous studies to develop and analyze a climate change assessment model for rice and livestock farming. The details are as follows.

Item	Climate Change Scenarios	Analytical Model and Climate Variables	Analysis Results and Implications	Analytical Data
Rice Cultivation	We evaluated multiple climate change scenarios and adaptation measures to identify and analyze the long-term impacts of climate change from multiple perspectives. The Climate Change Scenario utilized IPCC RCP8.5 and RCP2.6 to analyze climate change impacts by prefecture in Japan.	Using time series data, we constructed a model to explain production volume in terms of cropland area, temperature, rainfall, and sunshine hours. We incorporated the Climate Change Scenario into our model to estimate changes in production. In addition, we estimated the supply-demand factor based on price elasticity with respect to production volume, using consumer price index data. We estimated the quality factor based on changes in the ratio of first-class rice (the ratio of first-class rice to the inspected quantity of unpolished rice) due to climate change.	In the case of a 4℃ increase, the rate of change in revenue without adaptation measures resulted in large differences in the range of change in revenue among prefectures. This result suggests a factor related to temperatures during the maturation period and regional differences in crop varieties.	We obtained data mainly using published sources from government agencies such as the Ministry of Agriculture, Forestry and
Raw Milk		We constructed a model to explain production volume in terms of the number of cattle raised, temperature, rainfall, and hours of sunlight We used monthly data since cattle are produced throughout the year. We incorporated the Climate Change Scenario into our model to estimate changes in production. We excluded the impact on reproduction due to data constraints and other factors. We estimated price elasticity using milk prices and other statistical data.	We noted widening differences in production volume by season and by region. This result suggests the possibility of a summer/winter supply-demand gap and the need to address interregional transport further.	
Beef Cattle		We constructed a model to explain production volume in terms of the number of livestock, integral temperature, cumulative rainfall, and cumulative hours of sunlight. We used monthly data since cattle are produced throughout the year. We incorporated the Climate Change Scenario into our model to estimate changes in production. We excluded the impact on reproduction due to data constraints and other factors. We estimated price elasticity using milk prices and other statistical data, and incorporated the Beef Cattle Marukin system into our model.	Japanese Wagyu and other domestic cattle differed in heat tolerances, suggesting that Wagyu cattle are more tolerant to heat. This result suggests that the Beef Cattle Marukin system is effective in reducing the revenue impact of production fluctuations, etc., due to climate change.	

Model Limitations and Notes

Our analysis is based on the business revenue factors related to production volume and price. Our analysis did not cover business expenditures (expenses) such as feed costs in the livestock industry, nor did we address fluctuations in demand.

Our analysis was based on the best information available. However, we do not claim that the data was complete and the data used was subject to uncertainties. In addition, our analysis was based on multiple assumptions and hypotheses, reflecting a variety of complex impact paths.

Therefore, the Bank recognizes that the results of this analysis reflect results only to the extent possible at this time. We recognize that we must improve and refine the information inputs while improving the analytical models themselves.

In addition, our analysis was of the impact on producer revenue. The Bank recognizes that further study is required to build an analytical model to analyze the impact on the Bank's finances, as we must identify highly probable paths among a number of complex impact paths.

● 4 Climate Change: Physical Risk (Chronic Risk) Scenario Analysis on the Fisheries Sector

The Bank analyzed scenarios for chronic risks in the fisheries sector. The TCFD recommendations refer to the fisheries sector as an industry vulnerable to climate change, similar to the agriculture sector. We believe climate change risk in the agriculture, fishery, and forestry industries will have a significant impact on the continuity of the Bank's business, which is why we conducted this analysis The Bank made several assumptions and hypotheses, as scenario analysis of the fisheries sector also poses numerous model limitations. These limitations include 1) the lack of available methodologies established globally, 2) imperfect or poor data, and 3) diversified and complicated impact channels. Also note that the analysis targets revenue, not income (i.e., revenue minus expenses, etc.), and thus may differ from the actual impact on fishely operations.

The Bank decided to analyze skipjack tuna from the perspective of selecting species that have significant impact on the revenues of fishermen throughout Japan. Japan catches large amounts of skipjack tuna, with shares dispersed well among prefectures. We estimated the impact of rising ocean surface temperatures resulting from climate change on catches and prices of analysis targets. Next, we estimated the provisional final impact on fisherman revenues.

Marine Fishery Catches and Output by Prefecture

Order	Item	Catch (Hundred tons)	HHI	Output (Millions of yen)
1	Sardines	8,559	1,047	64,476
2	Japanese scallops	3,400	9,976	71,799
3	Mackerel	3,159	956	44,421
4	Codfish	2,177	7,292	19,311
5	Skipjack tuna	1,816	1,468	51,528

Order	Item	Catch (Hundred tons)	HHI	Output (Millions of yen)
6	Horse mackerel	1,148	2,471	22,834
7	Tuna	1,094	854	123,576
8	Japanese amberjack	928	655	22,613
9	Salmon and trout	912	9,589	50,318
10	Squid	577	957	43,179

Note: HHI refers to the Herfindahl-Hershman Index. This index measures the degree of oligopoly and is the sum of the squares of the shares (%) of each prefecture. A 100% share in a prefecture equals ten thousand, with figures closer to zero indicating sufficient share distribution.

Source 1: *2022 Fishery and Aquaculture Production Statistics*, the Ministry of Agriculture, Forestry and Fisheries (Japanese Only)
https://www.maff.go.jp/j/tokei/kekka_gaiyou/gyogyou_seisan/gyogyou_yousyoku/r4/

Source 2: *2021 Fishery Production* , the Ministry of Agriculture, Forestry and Fisheries (Japanese Only)
https://www.maff.go.jp/j/tokei/kouhyou/gyogyou_seigaku/index.html

Fishing Grounds for Skipjack Tuna

Previous studies indicate that skipjack tuna tend to inhabit a broad belt of waters in the Pacific, Atlantic, and Indian Oceans. These waters range from 40°N to 40°S and have surface water temperatures of 15℃ or higher. Japan fishes most of its skipjack tuna in the Midwest Pacific Ocean. Given this trend, the Bank analyzed inshore fisheries in the coastal waters of Japan (bordering the Pacific Ocean) and the deep sea fisheries in the Midwest Pacific Ocean.

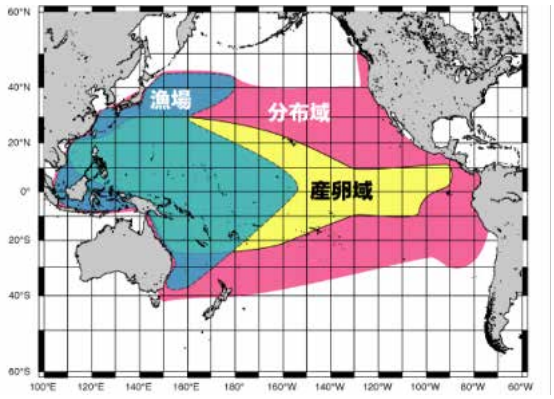


Figure 5. Skipjack Tuna Distribution Areas, Spawning Area, and Fishing Grounds in the Pacific Ocean

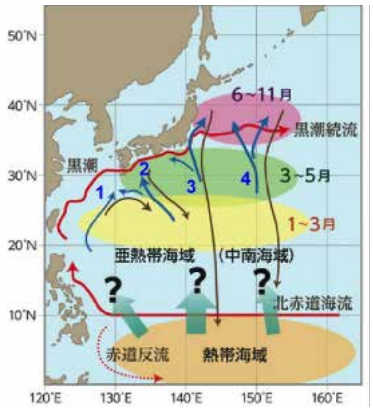
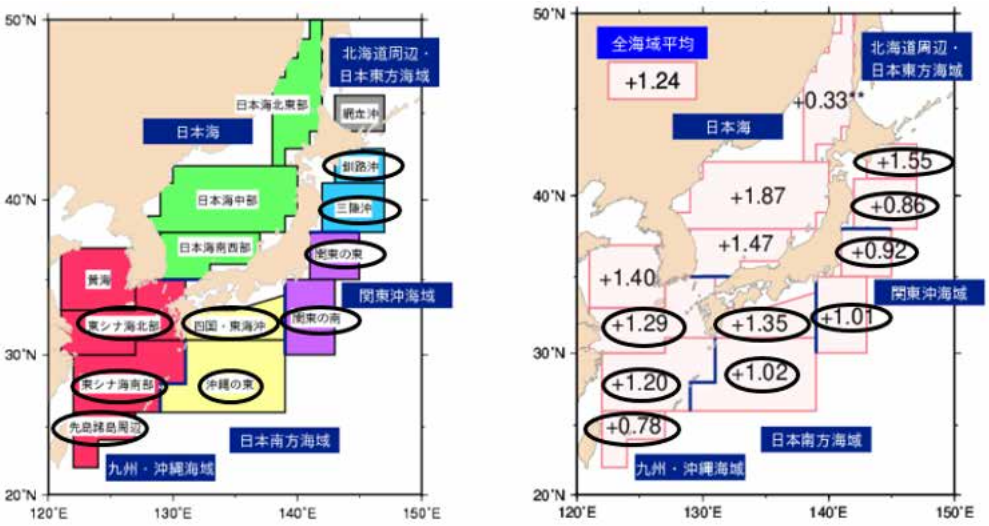


Figure 7. Estimated Northward Path of Skipjack Tuna, the Kuroshio Current, and the North Equatorial Current

Source: *FY2022 International Fishery Resources Status,* Fisheries Agency and the National Research and Development Agency Japan Fisheries Research and Education Agency (Japanese Only)
https://kokushi.fra.go.jp/index-2.html

Changes in Sea Surface Temperatures (℃) in the Coastal Waters of Japan (Bordering the Pacific Ocean)

The Japan Meteorological Agency announced that annual average sea surface temperatures (SST) of the coastal waters of Japan increased at a rate of +1.24℃ per century over the 100 years ending in 2022. This rate is higher than the global average increase rate of SST (+0.60℃ /100 years), ranking close to the increasing rate of air temperature in Japan (+1.30℃ /100 years).

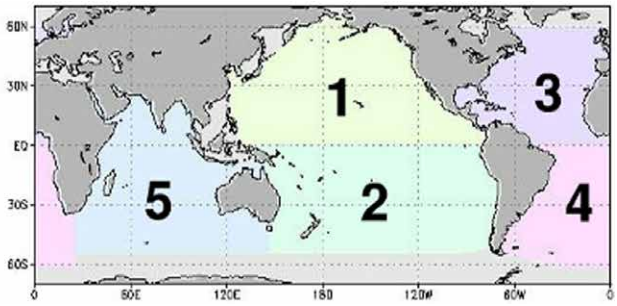


Source: *Long-Term Trends in Sea Surface Temperatures（Japan）*, Japan Meteorological Agency（Japanese Only）
https://www.data.jma.go.jp/gmd/kaiyou/data/shindan/a_1/japan_warm/japan_warm.html

Changes in Sea Surface Temperatures by Area (℃)

The Japan Meteorological Agency announced that changes to annual average sea surface temperatures (global average) result from a combination of oceanic and atmospheric fluctuations, global warming, and other factors. These fluctuations happen over periods of several years to several decades, with the long-term trends increasing 0.60℃ per 100 years. The Midwest Pacific Ocean, the fishing ground for deep sea skipjack tuna, is increasing at the same rate.

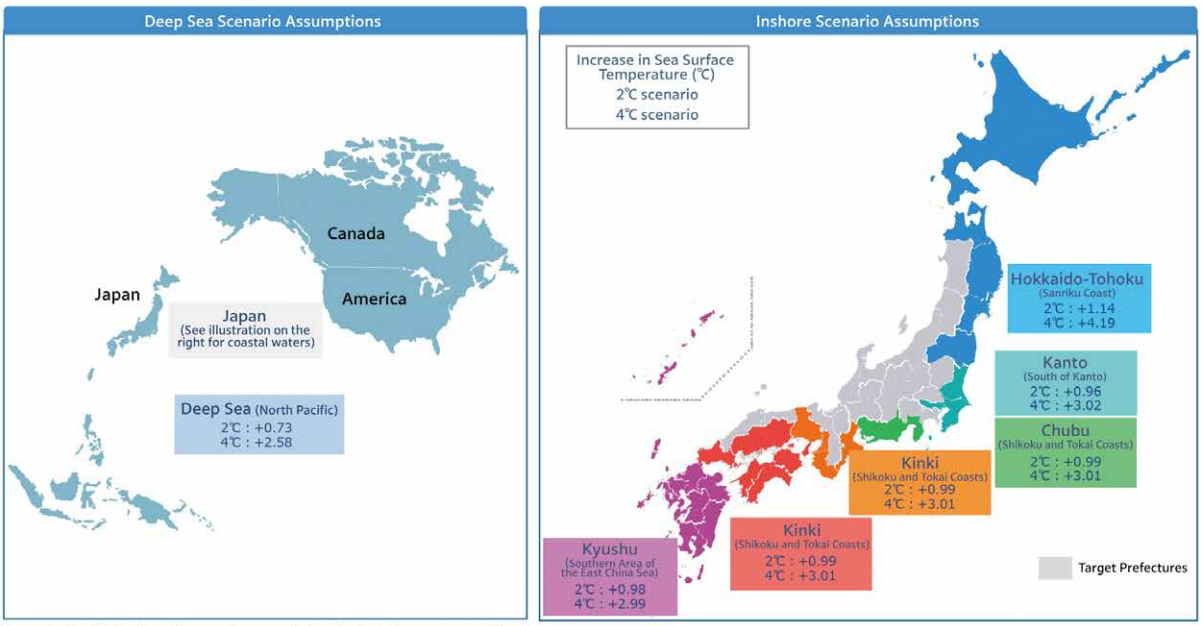
Area	Long-Term Trends
1 ： North Pacific	0.62℃/100年
2 ： South Pacific	0.54℃/100年
3 ： North Atlantic	0.66℃/100年
4 ： South Atlantic	0.82℃/100年
5 ： Indian Ocean	0.70℃/100年



Source: *Long-Term Trends in Sea Surface Temperatures (Global Averages)*, Japan Meteorological Agency（Japanese Only）
https://www.data.jma.go.jp/gmd/kaiyou/data/shindan/a_1/glb_warm/glb_warm.html

This analysis estimates the change in revenue as of the end of the 21st century compared to the end of the 20th century in two scenarios: (1) one in which no measures are taken to adapt to rising temperatures and (2) one in which measures are taken to adapt to rising temperatures. For the scenarios used in our analysis, we adopted the IPCC RCP 2.6 ("2℃ increase") and RCP 8.5 ("4℃ increase"), conducting a total of four different analyses. Previous studies indicate sea surface temperatures in the coastal waters of Japan are likely to increase by about 3.6℃ under the 4℃ scenario by the end of the 21st century, compared to the end of the 20th century.

Increase in Sea Surface Temperature From the End of the 20th Century to the End of the 21st Century by Area and Scenario



*Areas depicted in the above figure are images and do not indicate the exact extent of each area.
Source: Japan Climate Change 2020 (jma.go.jp)

Sea surface temperatures and other climate change effects differ by habitat areas and fishing grounds for skipjack tuna. Given this assumption, we conducted separate analyses for inshore fisheries in the coastal waters of Japan (bordering the Pacific Ocean) and deep sea fisheries in the Midwest Pacific Ocean. In the inshore fisheries analysis, we divided the coastal waters of Japan bordering the Pacific Ocean into six regions: Hokkaido-Tohoku, Kanto, Chubu, Kinki, Chugoku-Shikoku, and Kyushu.

Fish Species		Scenario	Impact on Catch	Impact on Price*Note 1	Revenue (Without Measures)	Revenue (With Measures)
Skipjack tuna Marine Fisheries	Inshore Fisheries	4℃ increase	Rising sea temperatures are likely to cause fluctuations in ocean currents, including the Black Current, which in turn affects skipjack tuna habitats and catches. Skipjack tuna caught by inshore fisheries increases by 1.3% to 4.7% in Kanto and Chubu, while catches decrease by 2.7% to 9.2% in Kinki and Kyushu.	Prices of fresh skipjack tuna in the Kanto and Chubu regions decrease by 0.1% to 0.6%, while prices in Kinki and Kyushu rise 0.3% to 1.3%.	Regional differences are likely to emerge, ranging from an 8.0 decrease to a 4.0% increase in revenue at the end of the 21st century, compared to the end of the 20th century. While revenue may increase in Kanto and Chubu, located near the Black Current and the Oyashio Current, revenue may decrease in Kinki and Kyushu due to decreased catches caused by faster currents.	Analysis indicates that changing fishing seasons will reduce impacts of rising surface water temperatures and mitigate future declines in revenue.
		2℃ increase	Skipjack tuna caught by inshore fisheries increases by +1.1% to 9.5% in Kanto and Chubu, while catches decrease by 2.6% to 9.2% in Kinki and Kyushu.	Prices of fresh skipjack tuna in the Kanto and Chubu regions decrease by 0.1% to 1.2%, while prices in Kinki and Kyushu rise 0.3% to 1.3%.	Regional differences are likely to emerge, ranging from an 8.0 decrease to an 8.1% increase in revenue.	
	Deep Sea Fisheries	4℃ increase	Expected increase of 1.6% in deep sea fisheries.	Expected decline of 0.4% in frozen skipjack tuna prices.	Expected increase of 1.2% in deep sea fishery revenues due to larger catches.	–
		2℃ increase	Expected increase of 0.5% in deep sea fisheries.	Expected decline of 0.1% in frozen skipjack tuna prices.	Expected increase of 0.4% in deep sea fishery revenues.	

Note 1: We conducted separate analyses of fresh and frozen prices due to differences in price levels of skipjack tuna. We analyzed fresh and frozen fish prices based on inshore fishery catches and deep sea fishery catches, respectively. We expect the price sensitivity (price elasticity) per 1% reduction in catch to be 0.14% for fresh fish prices and 0.24% for frozen fish prices, with frozen fish prices likely to be more elastic.

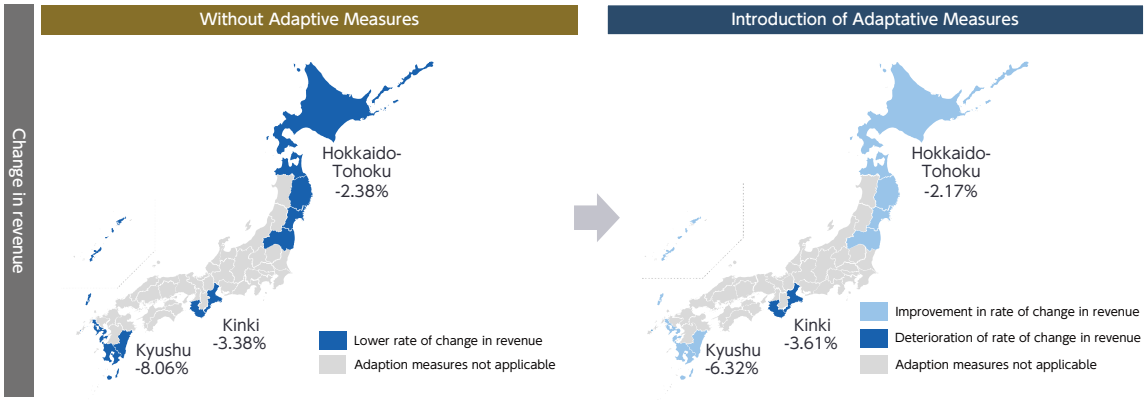
We examined the effects of adaptation measures used in previous studies, etc., as well as measures for which the technology has been established and adopted in real-world practice.

This analysis assumes the implementation of measures to change fishing seasons. The Bank referenced previous studies and analyzed these measures within the model, determining how these changes would impact climate change and rising sea surface temperatures, in particular. Results indicate these measures would curb impacts of rising temperatures and mitigate future declines in revenue. The Bank did not consider the costs of introducing adaptive measures when analyzing impacts on revenue. We must first consider cost-effectiveness when introducing actual adaptive measures.

We expect other adaptation measures to mitigate future declines in revenue, including shifts in target fish species and fishing methods, and various government initiatives. Government initiatives include increasing the accuracy of fishing ground forecasting and resource assessment, maintaining fishing grounds in response to climate change, monitoring sea temperature regularly, and improving fishing ground exploration systems.

Analysis Results for Fisheries (4℃ Increase (RCP8.5))

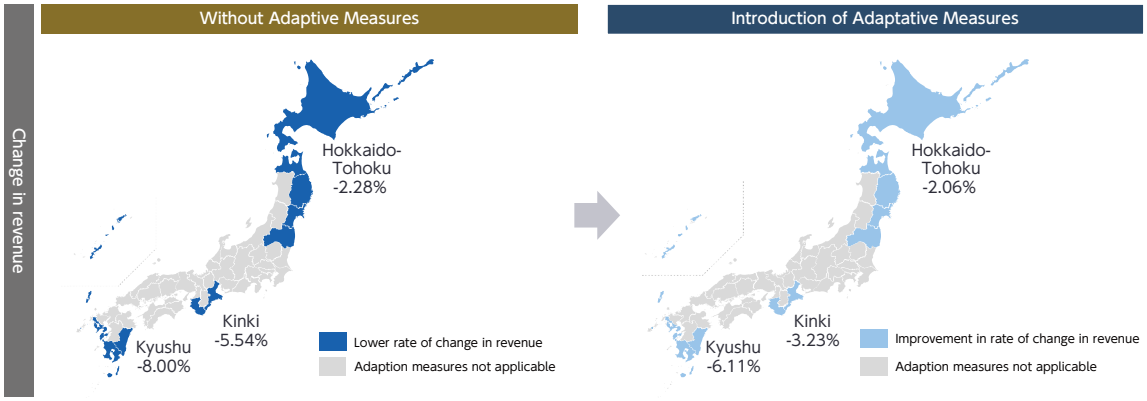
Adaptive Measures	The following indicates changes to fishing seasons in regions (Hokkaido-Tohoku, Kinki, Kyushu) facing a lower rate of change in revenues as sea surface temperatures rise. Hokkaido-Tohoku: Summer→Autumn Kinki: Spring → Winter Kyushu: Spring → Winter



Adaption Measure Effectiveness	In Hokkaido-Tohoku and Kyushu, changes in fishing seasons are likely to mitigate declines in revenue by 0.21% and 1.74%, respectively. On the other hand, changes to the fishing season in Kinki resulted in lower sea surface temperatures and faster currents, resulting in worsening revenue declines.

Analysis Results for Fisheries (2℃ Increase (RCP2.6))

Adaptive Measures	The fishing seasons in regions (Hokkaido-Tohoku, Kinki, Kyushu) where the rate of revenue decreases as sea surface temperature rises will change as follows. Hokkaido-Tohoku: Summer→Autumn Kinki: Spring → Winter Kyushu: Spring → Winter



Adaption Measure Effectiveness	Measures will mitigate the decline in revenue due to the changing of fishing seasons in all regions (Hokkaido-Tohoku, Kinki, and Kyushu) by +0.22%, +2.31%, and +1.89%, respectively.

・Analysis Details

We referred to previous studies to develop and analyze a climate change assessment model for skipjack tuna fisheries. The details are as follows.

Fish Species		Climate Change Scenarios	Analytical Model and Climate Variables	Analysis Results and Implications	Analytical Data
Skipjack tuna Marine Fisheries	Inshore Fisheries	We evaluated various climate change scenarios and measures to understand and analyze the long-term impacts of climate change from multifaceted perspectives. Analysis targeted climate change impacts in the coastal waters of Japan (six regions bordering the Pacific Ocean) and the Midwest Pacific Ocean, based on IPCC RCP 8.5 (4℃ increase) and RCP 2.6 (2℃ increase). We utilize data from the end of the 20th century for variables without future climate change scenarios, such as the number of approaching typhoons and fishing vessels.	The Bank developed the inshore fishery model and the deep sea fishery model in reference to previous studies and literature. These two models analyze catches in terms of water temperature, zooplankton concentration, water level deviation, current velocity, rapid tide intensity, and number of fishing vessels. For inshore fisheries, we applied the fishing seasons in line with the target region, using spring (April to June) or summer (July to September) data. For deep sea fisheries, we used either monthly data from all seasons or annual data. Using this model, we introduced several climate change scenarios, estimating changes in the volume of fish caught. Excluding the variables explained above, we assume no impact on catches. Analysis does not include cost items such as fuel prices, the impact of climate change on stock levels, international resource management, and fishing trends in other countries. For prices, we estimated the price elasticity against catch volume statistical data, including fresh or frozen fish prices, and factored in export volume, export prices, skipjack tuna prices, and other factors into the model.	Skipjack tuna follow ocean currents (mainly the Black Current) northward. Rising sea surface temperatures inflict changes in these ocean currents, resulting in changes in habitats and regional differences in the volume of skipjack tuna caught in the coastal waters of Japan. In southern Japan, catches are likely to decrease as current velocity increases. At the same time, catches are likely to increase in Kanto and Chubu due to their close proximity to the Black Current and the Oyashio Current.	Data is primarily from government agencies, including the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Japan Meteorological Agency, as well as from data published by the Western and Central Pacific Fisheries Commission (WCPFC). Our analysis omits data from 2020 onward, taking into account impacts from COVID-19. We obtained data from each prefecture, summing data for inshore and deep sea fisheries. The Bank did not use regional data on the number of fishing vessels due to data limitations.
	Deep Sea Fisheries				

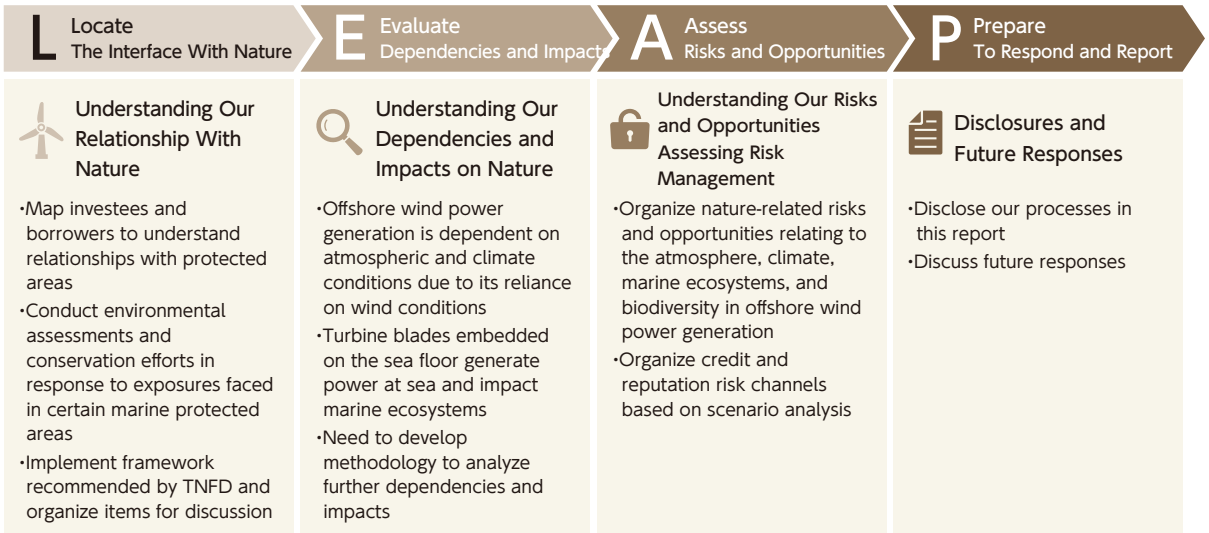
Model Limitations and Notes

The Bank recognizes that the results of this analysis reflect results only to the extent possible at this time. We recognize that we must improve and refine the information inputs while improving the analytical models themselves.

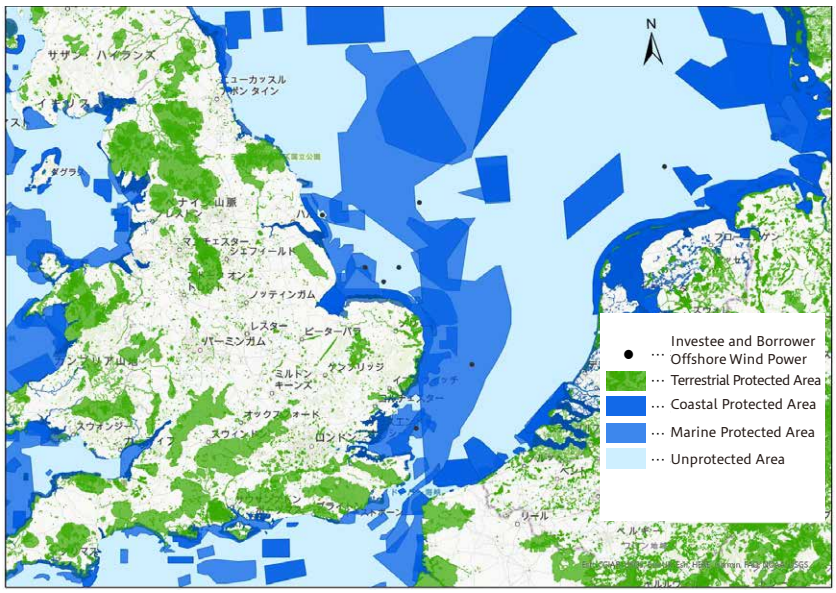
In addition, our analysis was of the impact on producer revenue. The Bank recognizes that further study is required to build an analytical model to analyze the impact on the Bank's finances, as we must identify highly probable paths among a number of complex impact paths.

Analysis Target
This analysis targets business income components of catches and prices. Analysis does not include business expenditures (expenses), such as fuel and human resources costs in fishery industries, or fluctuations in demand and exchange rates.
Information and Assumptions (Hypotheses) Used in the Analysis
The analysis was conducted within the scope of information available to The Norinchukin Bank. However, this data is not exhaustive and is subject to uncertainty. We analyzed models solely within the scope of information available as of 2023. We did not take into account resource management, other potential future regulations, or changes in catches, etc., within other countries. The analysis also contains complex impact channels and was based on several assumptions and hypotheses. Due to the nature of chronic risk analysis, short-term changes in future catches are unlikely to impact revenue, and we do not anticipate any supplemental revenue for fishermen through fishery mutual aid programs or other means.
Model Selection
We select a model using the standard Akaike Information Criterion (AIC) and coefficient of determination (R2). However, certain selected inshore fisheries catch models have low accuracy (low R2) as a result of our wide range of selected variables related to climate change. As a result, models that analyze the coefficient of determination (R2) as an indicator present gaps in accuracy between local and offshore models.
Analysis Results
Rates of change in revenue and catch and other results are obtained from a statistical perspective, and do not guarantee future changes in fishery revenue or catch.

● 5 Natural Capital and Biodiversity: Implementing the LEAP Approach for Investments in Offshore Wind Power



The Bank used the LEAP approach recommended by the TNFD to analyze offshore wind power generation in light of the portfolio analysis. Offshore wind power generation presents significant exposures in the critical sector of utilities. Our project financing of offshore wind power generation faces a certain degree of exposure. In response, we analyzed nature-related risks and opportunities, taking project financing into account as a significant asset in terms of both quality and quantity.



The TNFD Recommendations require the Bank to verify if the active areas of our investees and borrowers qualify as protected areas. We recognize that environmental assessments of future risk of offshore wind power generation in protected areas may advance further going forward. On the other hand, non-protected areas have may face higher transition risks than protected areas due to stricter future regulations.

Weak Dependency Strong Dependency

Natural Capital Assets	Dependencies							
	Water Resources				Atmosphere	Land		Biodiversity
Ecosystem Services	Surface Water	Underground Water	Water Cycle	Water Quality	Climate Regulation	Flood and Storm Responses	Soil and Substrate Stabilization	Derived Material
Offshore Wind Power Generation*								
Onshore Wind Power Generation								
Solar Power Generation								
Biomass Power Generation								
Hydroelectric Power Generation								

*It is difficult to analyze special characteristics of floating turbines, fixed-based turbines, and other projects in offshore wind power generation using the tool (ENCORE)

Results indicate that offshore windpower, in which we have a high degree of investment and loan exposure, is dependent on the atmosphere and land (seabed). Offshore windpower is also highly dependent on high-quality airflow (i.e., climate regulation in terms of ecosystem services), a factor crucial to ensuring the wind speed and air volume to power wind turbines.

We analyzed multiple climate change scenarios of risk to the Bank in areas of exposure near the North Sea. These scenarios indicated no potential significant physical risk events or spillover to financial risk of the Bank in the near future. We will continue to monitor future developments closely.

Weak Dependency Strong Dependency

Impact Driver	Impact Driver							
	Impact on Ecosystem			Pollution		Overuse	Emission Sources	Biodiversity
Target	Terrestrial Ecosystem	Aquatic Ecosystem	Marine Ecosystem	Water Quality	Soil	Water Resources	GHG	Living Things
Offshore Wind Power Generation*								
Onshore Wind Power Generation								
Solar Power Generation								
Biomass Power Generation								
Hydroelectric Power Generation								

*It is difficult to analyze special characteristics of floating turbines, fixed-based turbines, and other projects in offshore wind power generation using the tool (ENCORE)

Offshore wind power generation poses a relatively low impact on nature compared to other renewable energy sources. There major impacts include those on marine ecosystems, water quality, and interference with living organisms. Installation and operation of offshore wind turbines is said to pose the significant impact of altering ecosystems home to fish, algae, birds, mammals, and other species. Two major impacts on living organisms include negative impacts of noise made during construction and the concern of birds colliding with the turbine blades. Depending on the location of the turbines, these two impacts may lead to the destruction of bird habitats in the area.

The Bank recognizes the need to expand our assessment of the environment and on impacts to living organisms within our analysis of offshore wind power generation in protected areas and areas home to rare species. We will continue to aim for further improvement of our analyses and risk management.

● 6 Risk Management: Policy on Environmental and Social Considerations in Financing and Investment Activities

1. Positioning of the Policy

■ The Policy has been formulated to set out the Bank's policy on environmental and social considerations in financing and investment activities based on the Environmental Policy and the Human Rights Policy, which clarify our fundamental approach to resolving environmental issues and respecting human rights.

2.Transactions Subject to the Policy

■ The Policy applies to all financing and investment activities that we will provide for our clients.

3.Details of the Policy

■ Taking into consideration severity and nature of impacts on the environment and society, we have established the "Transactions for which the Bank prohibits financing and investment" and "Transactions for which the Bank restricts financing and investment" as follows. Each of the transaction categories is further classified into "Cross-sector items" and "Sector specific items" to organize the contents of the Policy. We will not provide financing or investment to any transactions listed in the "Transactions for which the Bank prohibits financing and investment." When considering whether to provide financing or investment to any transactions listed in the "Transactions for which the Bank restricts financing and investment," we will confirm the client's consideration for and response to environmental and social issues, and then make cautious decisions on whether to provide financing or investment after discussion at the management level as necessary.

(1) Transactions for which the Bank prohibits financing and investment

A. Cross-sector items

In recognition of the serious risks to have significant adverse impacts on the environment and society, we refuse to engage in transactions related to the following types of projects:

- Projects with an adverse impact on UNESCO World Heritage sites
- Projects with an adverse impact on wetlands designated as Wetlands of International Importance under the Ramsar Convention
- Projects involving in child labor and forced labor

B. Sector specific items

(A) Cluster munitions manufacturing

Civilian populations have been greatly affected by cluster munitions and are recognized by the international community as inhumane weapons. Based on such recognition, we will not provide financing or investment to any cluster munition manufacturers

(2) Transactions for which the Bank restricts financing and investment

A. Cross-sector items

In recognition of the potential to have significant adverse impacts on the environment and society in relation to the following types of projects, we will confirm the client's consideration for and response to environmental and social issues, and then make cautious decisions on whether to provide financing or investment:

- Projects with adverse impacts on high conservation value areas (IUCN Category I-IV)
- Projects with adverse impacts on indigenous peoples' communities
- Projects involving in land expropriation leading to involuntary resettlement

B. Sector specific items

(A) Coal-fired power generation

Coal-fired power generation has a risk of adverse impacts on the environment and society primarily due to the emission of more greenhouse gases compared to other types of power generation. Based on such recognition, in principle, we will not provide financing or investment to companies whose main business is coal-fired power generation and with which we have no prior business dealings including financing or investment. In principle, we will also not provide financing or investment to new construction of coal-fired power plants or the expansion of

existing facilities unless it is required to respond to disasters and other emergencies. Meanwhile, we will continue to support technologies and initiatives that support the transition to a decarbonized society, such as Carbon Dioxide Capture and Storage technology (CCS), which will contribute to reduction in the emission of greenhouse gases.

(B) Coal mining

With regard to coal mining, we assume a risk of coal becoming stranded assets due to the transition to a low-carbon society. In addition, improper management of coal mining operation may pose a risk of adverse impacts on the environment and society, such as the occurrence of occupational injuries caused by coal mining accidents, pollution of water systems (rivers and oceans) caused by mining waste, and destruction of ecosystems. We are also aware of the importance of consideration for human rights issues such as infringement of the rights of indigenous peoples and communities, health problems, and forced and child labor. Based on such recognition, we will assess the implementation status of environmental and social considerations by our clients when considering whether to provide financing or investment to clients who operate the coal mining business. In principle, we will not provide financing or investment to companies whose main business is thermal coal mining and related infrastructure development, and with which we have no prior business dealings including financing or investment. We will also not provide financing or investment to thermal coal mining projects, new infrastructure development and expansion projects related to thermal coal mining projects, as well as coal mining projects in the U.S. Appalachian areas using the mountaintop removal (MTR) method (a type of surface mining), which have severe impacts on the natural environment.

(C) Oil and gas

Oil and gas drilling and pipeline installation could pose the risk of adversely impacting the environment and society, through the pollution of the seas and rivers as a result of oil and gas spill accidents as well as the infringement of the rights of the indigenous people and communities. Arctic petroleum and gas drilling projects (in the region north of 66°33' north), in particular, not only raise concerns over the potential destruction of the ecosystem and marine pollution through oil and gas spill accidents but also require the protection of rare species and the consideration for the livelihood of the indigenous people. Furthermore, the production of oil sands uses massive volumes of hot water and steam, which leads to the generation of greenhouse gases, while shale oil and gas development causes groundwater quality contamination and other forms of pollution due to the massive volumes of water used and the injection of chemical substances in the hydraulic fracturing process. We recognize the immensity of the environmental burden posed by these developments and the potential infringement of the rights of the indigenous people and communities resulting from these developments. Based on such recognition, when considering whether to provide financing or investment to oil and gas drilling and pipeline installation projects, we will assess the implementation status of the environment and social considerations by our clients and thereupon make an appropriate decision on the financing or investment to avert any significant adverse impact.

(D) Large-scale hydropower generation

Large dams* contribute to the social infrastructure by strengthening resilience (flood control) toward natural disasters caused by climate change and through food production based on the use of agricultural water (water utilization), as well as supplying clean energy as sustainable energy. On the other hand, we recognize that dam construction may entail risks including adverse impact on biodiversity along the river basin and infringements of the rights of indigenous peoples and communities, due to making the people relocate.

Based on such recognition, when considering whether to provide financing or investment to large scale hydropower generation projects, we will assess the implementation status of the environment and social considerations by our clients and thereupon make an appropriate decision on the financing or investment to avert any significant adverse impact. Furthermore, we will recommend our clients undergo environmental and social assessments based on the Hydropower Sustainability Assessment Protocol.

*The construction of new hydropower generation dams with dam walls of over 15 meters tall and output of 30MW or greater.

(E) Palm oil

Palm oil is used in a variety of consumer products, such as chocolate, margarine, snacks and soaps, making it an important ingredient indispensable for people's lives. On the other hand, we recognize that the development of palm plantations may cause conflicts over indigenous land rights; various environmental issues such as forests fires and smoke pollution (haze) caused by the development of peatlands, deforestation of tropical rain forests and slash and burn agriculture, and damage to biodiversity; and human rights issues such as child labor and low wage labor. Based on such recognition, we will assess the implementation status of environmental and social considerations by our clients when considering whether to provide financing or investment to clients who operate the plantation and oil extraction business for palm oil production. In addition, when we provide financing or investment to the palm oil business described above, we will verify whether the client complies with the Bank's policy regarding its intended use of funds and has certified relevant operations according to RSPO (Roundtable on Sustainable Palm Oil). Furthermore, we will request clients in this sector to announce their respect of Free, Prior and Informed Consent (FPIC) to indigenous people and their commitments to No Deforestation, No Peat and No Exploitation (NDPE). If the client has yet to be eligible for RSPO certification or has yet to announce its respect for FPIC or commitment to NDPE, we will examine its action plans to do so and achieve certification.

(F) Forestry

Forests play a significant role in mitigating global warming by absorbing and storing carbon dioxide and are valuable resources that contribute to biodiversity conservation. Deforestation has severe impacts on the global environment. Based on such recognition, we will assess the implementation status of environmental and social considerations by our clients and aim to contribute to environmental conservation. In addition, when we provide financing or investment to clients who are engaged in logging business in emerging countries, we will verify whether the client complies with the Bank's policy regarding its intended use of funds and has certified relevant operations according to internationally recognized certification organizations: Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC). Furthermore, we will request clients in this sector to announce their respect of Free, Prior and Informed Consent (FPIC) to indigenous people and their commitments to No Deforestation, No Peat and No Exploitation (NDPE). If the client has yet to be eligible for FSC or PEFC certification or has yet to announce its respect for FPIC or commitment to NDPE, we will examine its action plans to do so and achieve certification.

(G) Large-scale agriculture

We recognized that the development and the operation of large-scale agriculture projects* may cause various environmental issues such as deforestation and damage to biodiversity due to cutting down and the controlled burnout of natural forests; and human rights issues such as the infringement of the rights of indigenous people and child labor. Based on such recognition, when considering whether to provide financing or investment to plantation projects, we will assess the implementation status of the environment and social considerations by our clients and thereupon make an appropriate decision on the financing or investment to avert any significant adverse impact. Furthermore, we will request clients in this sector to announce their respect of Free, Prior and Informed Consent (FPIC) to indigenous people and their commitments to No Deforestation, No Peat and No Exploitation (NDPE). If they have yet to announce their respect for FPIC and their commitment to NDPE, we will examine their action plans to do so.

*Agricultural projects covering 10,000 hectares or larger for raising grains such as soybeans or fruit such as cacao and coffee, as well as using the land as grazing land.

(H) Inhumane weapons

Nuclear weapons, biological and chemical weapons, and anti-personnel mines, which have indiscriminate and serious effects on civilians, are internationally accorded to have entailed risks that cannot be ignored for humanitarian concerns, along with cluster munitions. Based on such recognition, we will not provide financing or investment for the manufacturing of nuclear weapons, biological and chemical weapons, or anti-personnel mines.

4.Review of the Policy

■ Considering the results of implementation of the Policy and trends in Japan and overseas regarding initiatives to address environmental and social issues, we will regularly review the appropriateness and sufficiency of the Policy at the management level, and then revise the Policy and enhance its implementation as necessary.

5.Education and Training

■ In order to enhance officers' and employees' knowledge on environmental and social issues, and deepen their understanding of the Environmental Policy and the Human Rights Policy, as well as the Policy, the Bank continuously conducts education and training for all officers and employees. We also ensure that officers and employees will fully comply with the rules and procedures related to the Policy.

6.Stakeholder Communication

■ We continuously engage in dialogue with stakeholders on a variety of sustainability-related topics, including environmental and social issues handled in the Policy. We believe that those initiatives will be helpful to properly and timely identify environmental and social issues which we must address through the revisions of the Policy to further increase its effectiveness.

■ Based on these continuous dialogues with stakeholders, we will promote the Policy on Environment and Social Considerations in Financing and Investment Activities and make efforts to provide and support solutions to address the issues that our clients face.

(The Policy has been applicable on April 1, 2024)

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