



Ministry of the Environment

ANNUAL REPORT

ON THE ENVIRONMENT IN JAPAN 2023



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EFFORTS TO REALIZE SUSTAINABLE SOCIOECONOMIC SYSTEMS

For Japan, achieving the targets of net-zero greenhouse gas (GHG) emissions by 2050 and 46% reduction in FY 2030 (from FY 2013 levels) will not be easy. It is essential to view the period up to 2030 as a “critical decade” and promote the transition to a sustainable socioeconomic system, with decarbonization being one of the most important challenges. Given the numerous social challenges our country faces, we need to work on new avenues for sustainable growth by implementing integrated initiatives, such as the establishment of the Circular and Ecological Economy (see Chapter 2), with the aim of simultaneously achieving net-zero GHG emissions, circular economy, and nature-positive, thus ensuring a high quality of life in the future. Societal changes encompassing the economy, society, politics, and technology are needed to

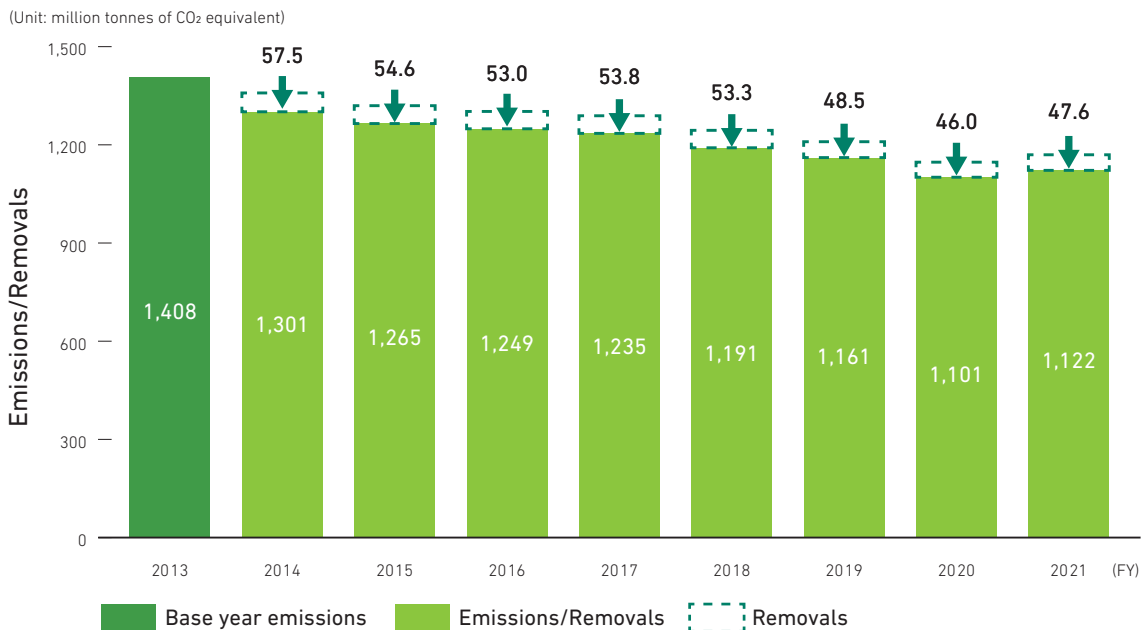
1 achieve nature-positive, halt and reverse biodiversity loss, and put nature on a path to recovery. Advancing toward circular economy will accelerate resource circulation, which in turn will help reduce GHG emissions throughout the entire product lifecycle and contribute to the realization of net-zero GHG emissions. The environment, resource circulation, and biodiversity are intertwined, and a holistic approach is needed to effectively address the related challenges.

1 JAPAN'S GREENHOUSE GAS EMISSIONS AND REMOVALS

Japan's GHG emissions and removals (total emissions less removals) in FY 2021 were 1,122 million tonnes of CO₂ equivalent (Mt CO₂ eq.) (final figures), an increase of 2.0% (21.5 Mt CO₂ eq.) from FY 2020. This was mainly due to an increase in energy consumption that reflected the recovery of the economy, which had been sluggish because of COVID-19. Against the base-year FY 2013, the FY 2021 figure represents a decrease of 20.3% (285.3 Mt CO₂ eq.). The amount of CO₂

absorbed by forests and others in FY 2021 was 47.6 million tonnes. This was the first increase in absorption in four years at 3.6% over FY 2020. This is believed to be mainly due to the steady implementation of forest improvement projects and promotion of wood use. In reporting GHG emissions and removals to the United Nations for FY 2021, for the first time, we included 2,300 tonnes absorbed by mangrove forests, one of the blue carbon ecosystems.

Japan's Greenhouse Gas Emissions and Removals



Source: Ministry of the Environment

2 NET-ZERO GREENHOUSE GAS EMISSIONS

Towards realization of a green transformation

In February 2023, Japan's cabinet approved the Basic Policy for the Realization of Green Transformation (GX) following discussions with the GX Implementation Council. By implementing GX policies, Japan aims to achieve its international commitment of 46% reduction in GHG emissions in FY 2030 and net-zero GHG emissions by 2050. Japan also intends to

transform its energy supply and demand structure, which would lead to a stable and inexpensive energy supply. Japan aims to reform its industrial and social structures and create a society in which all citizens, including future generations, can live with hope. To fulfill Japan's international commitments, improve industrial competitiveness, and simultaneously

realize economic growth, investments are required in many fields. According to one estimate, more than 150 trillion yen for 10 years is required to promote GX. To bring in this enormous GX investment through public-private partnerships, a Pro-Growth Carbon Pricing Concept will be swiftly realized and implemented. The Pro-Growth Carbon Pricing

Concept includes three measures. One of them is bold assistance to initial investments of 20 trillion yen through GX Transition Bonds with other policy supports and regulations. The other two measures are incentives for upfront GX investments through carbon pricing (emissions trading system and GX-Surcharge) and other financial schemes.

Decarbonization Leading Areas

One of the measures based on the Regional Decarbonization Roadmap is the selection of Decarbonization Leading Areas. Decarbonization Leading Areas refer to areas that are committed to achieving net-zero CO₂ emissions associated with the electric power consumption of the consumer sector (residential, commercial, and other sectors) in line with the national goal of net-zero GHG emissions by 2050. They are also committed to achieving other GHG emission reductions, including in the transport sector and heat use, according to their own characteristics and are

consistent with the overall national target for FY 2030. These areas serve as role models for nationwide decarbonization efforts. We plan to select at least 100 areas by FY 2025 and complete the program by FY 2030. In this way, we hope to offer simultaneous solutions to the challenges that exist in many local communities, including farming villages, fishing villages, mountain villages, remote islands, and urban areas, and contribute to their revitalization. By the end of FY 2022, 46 areas have been selected as Decarbonization Leading Areas through two public solicitations.

Support through regional financial institutions: Japan Green Investment Corp. for Carbon Neutrality

Regional financial institutions, which support regional economies financially, can be directly affected by the sustainability of the region. They are expected to explore concrete measures together with their business partners as the socioeconomic structure shifts toward net-zero GHG emissions.

As part of the ESG Regional Finance Promotion Program, the Ministry of the Environment is promoting, in cooperation with leading regional financial institutions, the creation of business models to solve regional issues and better utilize local resources. In addition, we support regional financial institutions that disclose information in compliance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), a framework for the disclosure of climate-related information.

In May 2022, a law was enacted to partially amend the Act on Promotion of Global Warming Countermeasures, and the Japan Green Investment Corp. for Carbon Neutrality (JICN) was established with funds from the fiscal investment and loan program to provide focused and intensive support to private businesses and others who engage in decarbonization projects with enthusiasm. JICN funding will have a pump-priming effect on the inflow of private funds into “blended finance,” which is a combination of public and private funds. We will make the flow of funds required for decarbonization wider and faster and contribute to the socioeconomic development and revitalization of the regions as well as to the creation of new values through the accumulation of knowledge and human resource development.

Needed innovation for the transition to a decarbonized society and startup assistance

Promoting green innovation requires assistance in technological development and other respects to those startups and future entrepreneurs who are pioneering new environmental businesses (“environmental startups”). The Ministry of the Environment extends various types of assistance to environmental startups for green innovation R&D and commercialization depending on their stages of growth. These include R&D assistance specifically designed for environmental startups, the creation of business opportunities through pitch events and commendations, and endorsement by performance demonstration of environmental technologies.

The Greenhouse Gases Observing Satellite (GOSAT), a joint mission project of the Ministry of

the Environment, National Institute for Environmental Studies, and JAXA, has been observing the concentrations of carbon dioxide and methane worldwide since its launch in 2009. GOSAT-2, its successor satellite with enhanced functions for improved observation accuracy, was launched in 2018. Currently, GOSAT-GW, which will progressively succeed the missions of these two satellites, is under development. The data acquired by the GOSAT project are used to identify large emission sources and help ensure the transparency of the emissions data that the countries report under the Paris Agreement. In this way, we are promoting the transition to a decarbonized society.

Best
Practice

CONTRAIL Project, atmospheric observation by aircraft

The CONTRAIL Project was launched in 2005 to observe GHG extensively using two observation instruments, Continuous CO₂ Measuring Equipment (CME) and Automatic air Sampling Equipment (ASE), which are installed on aircrafts serving regular international passenger flights of Japan Airlines (JAL). This was the world's first attempt at regular and continuous observation of GHG using a commercial

aircraft. The observation results obtained from the passenger aircraft are not only used for the direct understanding of the concentration distribution of GHG along the flight route but also to improve the accuracy of the GOSAT observations through comparison and validation. CONTRAIL is an indispensable tool for accurately understanding the global distribution of the concentration and variations in GHG.



CME

Continuous CO₂ Measuring
Equipment

ASE

Automatic air Sampling
Equipment

JAL passenger aircraft and
two types of observation instruments

Source: National Institute for Environmental Studies

Joint Crediting Mechanism and overseas expansion of environmental infrastructure

Japan actively implements the Joint Crediting Mechanism (JCM) to contribute to GHG emission reductions by introducing advanced decarbonization technologies and infrastructure to developing countries. In 2022, the number of JCM partner countries increased to 25 with the addition of eight new countries. To date, more than 240 decarbonization projects have been implemented, including the introduction of renewable energy and energy-saving technologies.

With a view to building up “High Integrity Carbon Markets” that include the JCM and are in line with the provisions of Article 6 of the Paris Agreement, Japan led the launch of the Paris Agreement Article 6 Implementation Partnership at COP27 with the participation of over 60 countries and organizations (64 countries and 27 organizations as of March 23, 2023). We expect that opportunities to utilize the JCM will expand worldwide. We will further enhance international cooperation by increasing the number of participating countries and organizations.

Through these efforts, Japan will also contribute to the realization of the Asia Zero Emission Community, which aims for decarbonization and economic growth, and support the realization of the greatest and earliest possible reductions to limit the temperature rise to 1.5 °C.



Mr. Akihiro Nishimura, the then Minister of the Environment, participating in the launch of the Paris Agreement Article 6 Implementation Partnership

Source: Ministry of the Environment

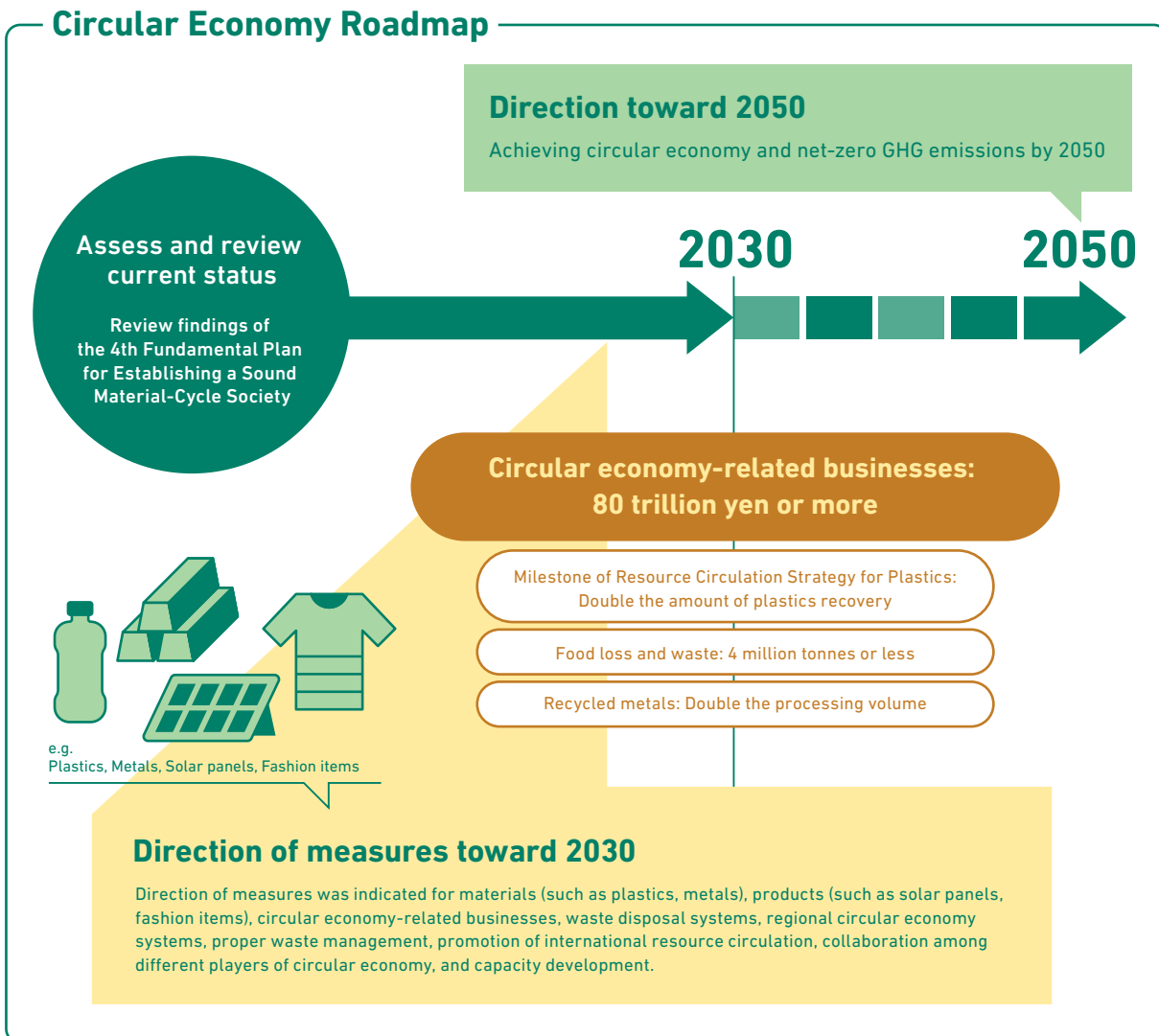
3 CIRCULAR ECONOMY

The second progress review of the 4th Fundamental Plan for Establishing a Sound Material-Cycle Society and formulation of the Circular Economy Roadmap

Based on the results of the second progress review of the 4th Fundamental Plan for Establishing a Sound Material-Cycle Society (approved by the Cabinet in June 2018), the Ministry of the Environment formulated and announced the Circular Economy Roadmap in September 2022, which set the direction toward circular economy for the first time in Japan after the declaration of net-zero GHG emissions by 2050.

The Circular Economy Roadmap sheds light on the direction of the circular economy that should be pursued with a view toward 2050, as well as the directions for measures to be taken toward 2030 in the materials, products, and other fields. Based on this, the public and private sectors will work together to promote decarbonization based on resource circulation throughout the lifecycle.

Overview of the Circular Economy Roadmap



Source: Ministry of the Environment

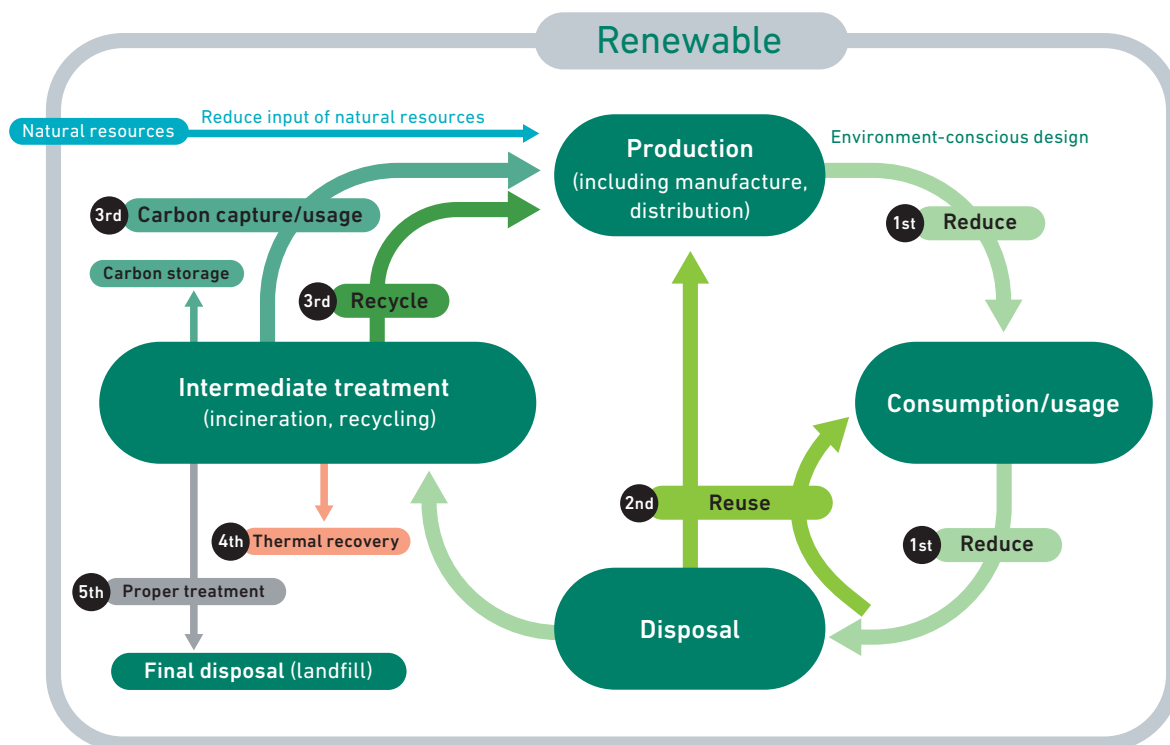
The direction of the circular economy that should be pursued with a view toward 2050

An analysis of Japan's Greenhouse Gas Inventory estimated that approximately 36% of the total emissions correspond to sectors where resource circulation can contribute. The 3Rs + Renewable and other efforts for the transition to the circular economy need to be promoted, especially in the context of achieving net-zero GHG emissions by 2050.

3Rs + Renewable is a policy approach to ensure the widespread practice of the 3Rs and encourage replacement by renewable resources. It is based on the fundamental principles stipulated in the Basic

Act on Establishing a Sound Material-Cycle Society (Act No. 110 of 2000). It not only calls for GHG emission reduction by minimizing incineration and landfilling of carbon-containing substances, but also reducing energy consumption in production processes, increasing use of biomass as feedstock and other material switch-over, and a shift to renewable energy in the processing/treatment steps. 3Rs + Renewable is a foundational approach that will contribute broadly to the realization of a decarbonized society.

Schematic chart of 3Rs + Renewable



Source: Ministry of the Environment

Promotion of plastics resource circulation

The Act on Promotion of Resource Circulation for Plastics (Act No. 60 of 2021), which came into effect in April 2022, provides measures for all parties concerned with promoting plastic resource

circulation based on the 3Rs + Renewable approach over the entire life cycle of plastic-containing products from design to waste disposal.

Revision of the Basic Policy on Waste Management and Formulation of Waste Management Facilities Improvement Plan

In June 2023, we revised the basic policy on waste management to reflect the changing situation surrounding waste management, such as the promotion of decarbonization in waste management toward net-zero GHG emissions by 2050 and intensive resource circulation throughout the life cycle.

In addition, we formulated the Waste Management Facilities Improvement Plan, setting forth the objectives and outlines regarding the implementation of waste management facility improvement projects for the planning period from FY 2023 through FY 2027,

pursuant to the provisions of the Act on Waste Management and Public Cleansing. It was approved by the Cabinet in June 2023. The new plan incorporates enhanced climate change countermeasures from the perspective of decarbonization toward net-zero GHG emissions by 2050. It also provides for further sophistication of recycling, construction of regional circulation systems, supply of renewable materials and other measures from the perspective of promoting the 3Rs, and strengthening resource circulation toward the realization of a sound material-cycle society.

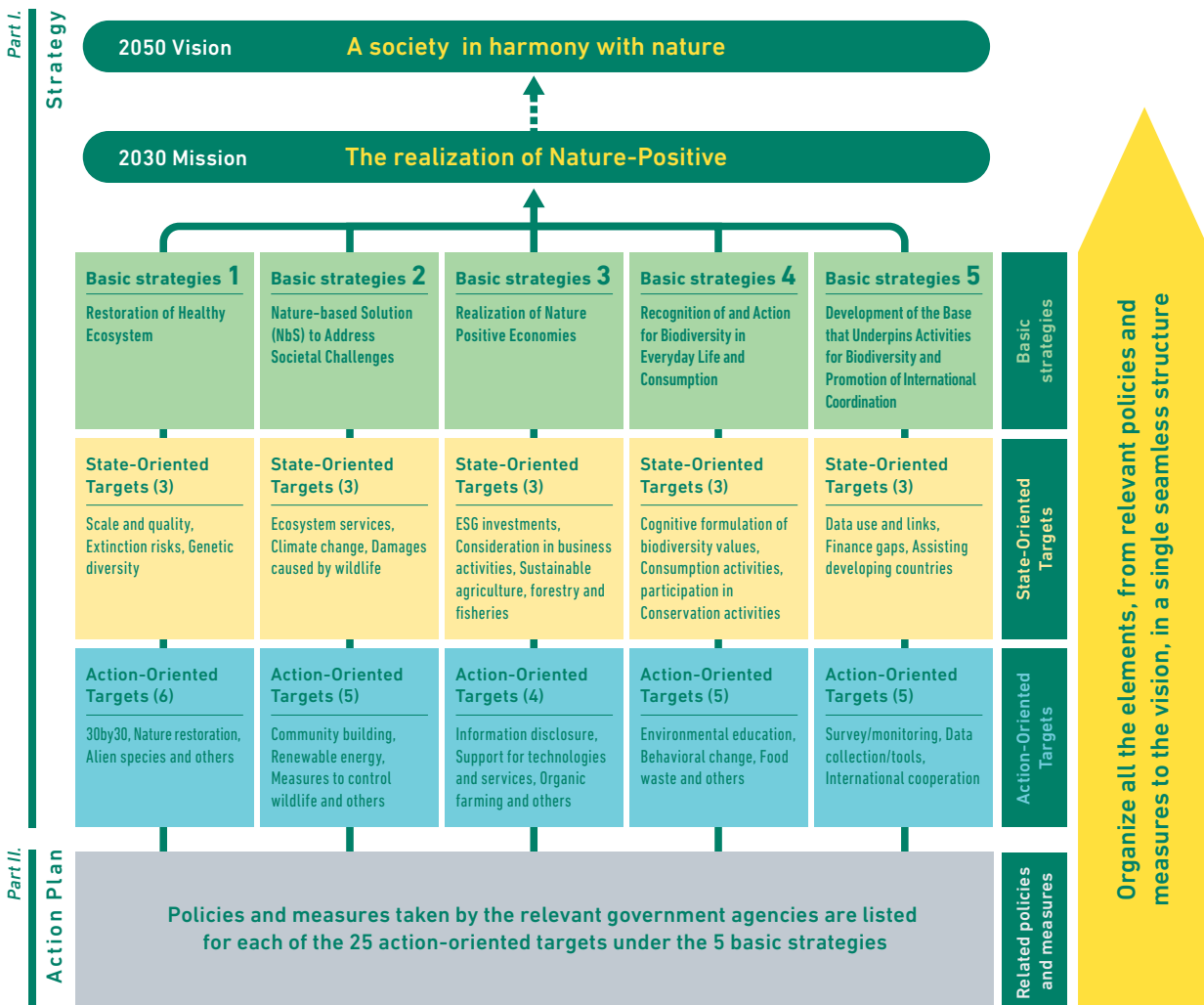
4 NATURE-POSITIVE

Five Basic Strategies for Nature-Positive in 2030

With the adoption of the Kunming-Montreal Global Biodiversity Framework (“KMGBF”) at the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP15) in December 2022 the National Biodiversity Strategy and Action Plan of Japan 2023-2030 (“new NBSAP”) was approved by cabinet in March 2023. Japan’s new NBSAP is aligned with the new framework to achieve nature-positive by 2030. It sets out five basic strategies designed to promote integrated efforts for the “twin environmental crises”,

biodiversity loss and climate change, sustain healthy ecosystems, and maintain and restore the blessings of nature through further efforts, such as achieving the 30by30 target, and promoting socio-economic activities that conserve and use natural capital sustainably. For each basic strategy, the ideal state (State-Oriented Targets) and actions to be taken (Action-Oriented Targets) have been determined. These targets also correspond to the four global goals and 23 global targets of the KMGBF.

Structure of the National Biodiversity Strategy and Action Plan of Japan 2023–2030



Source: Ministry of the Environment

Promotion of countermeasures against invasive alien species

Through the May 2022 enactment of the Act for Partial Amendment of the Act on the Prevention of Adverse Ecological Impacts Caused by Designated Invasive Alien Species (Act No. 42 of 2022) (“Revised Invasive Alien Species Act”), we have strengthened the management regime by stepping up measures against fire ants and other invasive alien species

unintentionally introduced to Japan, improving regulatory tools for invasive species such as red swamp crayfish that had not been regulated and are widely bred, and clarifying the sharing of management responsibilities with local governments and other parties concerned.

Column

Preventing the release of red swamp crayfish and red-eared slider turtle —Raising public awareness

The Revised Invasive Alien Species Act has opened the way for designation of designated invasive alien species with conditions (designation with exemption of certain regulatory provisions). Accordingly, red swamp crayfish and red-eared slider turtles have been designated as designated invasive alien species with conditions in June 2023. This designation prohibits the release of these two species while allowing the general public to continue keeping them at home. To prevent the release of these species into the open, it is important for the general public to not only deepen their understanding about the regulations themselves but also the serious adverse impacts that would be caused on aquatic ecosystems as well as the importance of keeping pets until the end (lifelong rearing).



Video calling for lifelong rearing of red-eared slider turtles



1st video



2nd video

Source: Ministry of the Environment

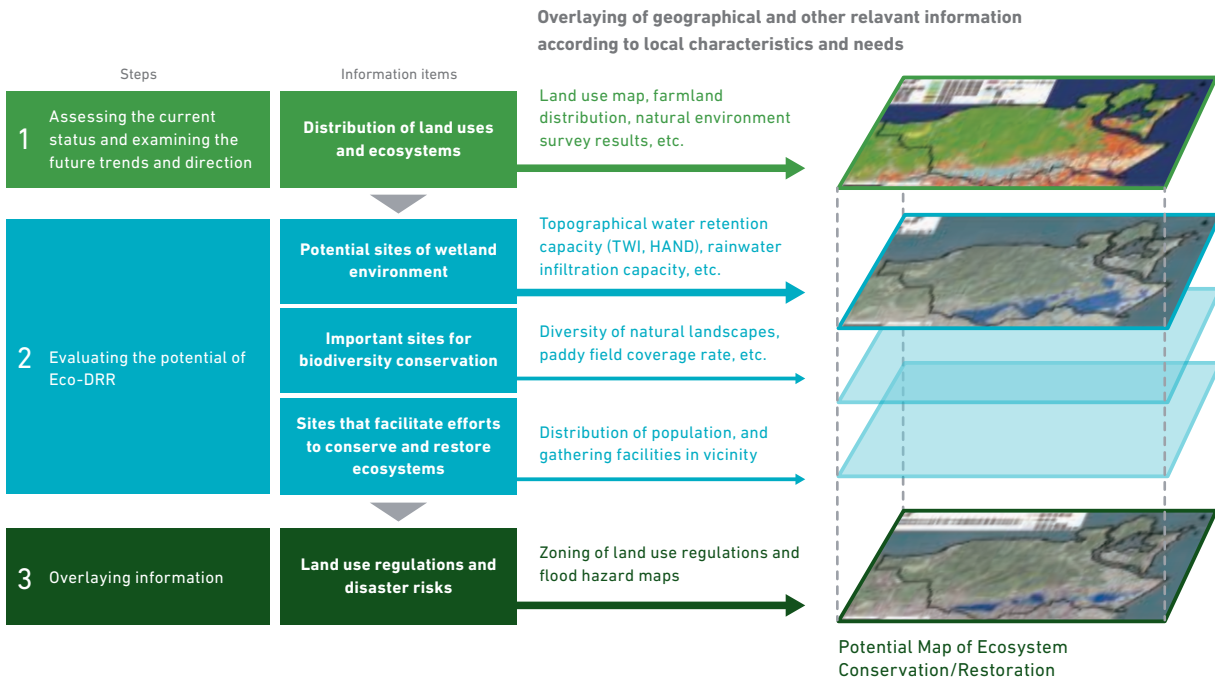
Nature-based Solutions

Nature-based Solutions (Nbs) are a relatively new inclusive concept, it includes Ecosystem-based Disaster Risk Reduction (Eco-DRR), such as mitigating flood damage by securing and strengthening the rainwater storage and infiltration functions of wetlands, and Ecosystem-based Adaptation (EbA), such as mitigating urban heat islands and reducing the risks of heat illness by creating forests and grasslands in urban areas. It has drawn attention as an approach to address multiple societal challenges, such as climate change, biodiversity loss, stagnation of socioeconomic systems, natural disasters, and food problems. It is also expected to have a positive ripple effect on

the healing power of nature and human health.

In March 2023, the Ministry of the Environment released a guidebook for the creation and use of the “Potential Map of Ecosystem Conservation/Restoration” to geographically identify and visualize areas that have the potential to implement Eco-DRR. The release was accompanied by a nationwide base map that will serve as a reference material. Through these initiatives, the Ministry promotes the development of disaster-resilient and nature-friendly communities by implementing green infrastructure and Eco-DRR.

Potential Map of Ecosystem Conservation/Restoration



Source: A Guide to Eco-DRR Practices for Sustainable Community Development

Towards Nature Positive Economies

The Ministry of the Environment has established the Nature Positive Economies Study Group to discuss challenges to realizing a nature positive economies, business opportunities arising from its realization, and the respective roles of different actors, among other actions.

In November 2021, the Japan Conference for the 2030 Global Biodiversity Framework (J-GBF) was inaugurated as the successor organization of Japan Committee for the United Nations Decade on Biodiversity. This Conference seeks to promote the participation and mutual cooperation of the government, local governments, businesses, citizens, NGOs, youth groups, and all other sectors of Japan, and encourage efforts for the conservation and

sustainable use of biodiversity, with a view to achieving the Post-2020 Framework for Biodiversity (now the KMGBF), which includes the 30by30 target, other international targets, as well as the new NBSAP and other domestic strategies.



The First Meeting of TNFD Consultation Group of Japan (kickoff event)

Source: MS&AD Insurance Holdings

5 INTERNATIONAL TRENDS

Outcomes of the G7

In April 2023, the G7 Ministers' Meeting on Climate, Energy and Environment was held in Sapporo as Japan

had the G7 Presidency. The participants recognized that they are facing the unprecedented triple global

crisis of climate change, biodiversity loss and pollution, as well as energy crisis, food security challenges, economic disruptions, and health threats. They agreed to advance and promote green transformation globally, working together to realize the transformation of their

economies to reach net-zero GHG emissions, circular economy, and nature-positive in an integrated manner, while ensuring inclusive, socially, and environmentally sustainable economic growth and energy security.

The 27th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27)

Following the cover decision “Glasgow Climate Pact” and other outcomes of the COP26 in 2021, the COP27 was held in Sharm el-Sheikh, Egypt, in November 2022, directed more toward full “implementation” of the goals of the Paris Agreement in addition to rulemaking.

Representing Japan, Mr. Akihiro Nishimura, the then Minister of the Environment, participated in the conference and stated Japan’s determination at the high-level segment. He emphasized the importance of including mitigation, i.e. reduction of GHG emissions, in the cover decision of the COP27, and called on the Parties to adopt a “mitigation work program” to scale up ambition and implementation for emissions reduction in this decade. Furthermore, he announced “Assistance



Mr. Akihiro Nishimura, the then Minister of the Environment, stated Japan’s determination at the high-level segment

Source: Ministry of the Environment

Package by the Government of Japan for Averting, Minimizing and Addressing Loss and Damage,” to provide comprehensive assistance for losses and damages, as part of dissemination of Japan’s efforts for addressing climate change.

The road to the adoption of the Kunming-Montreal Global Biodiversity Framework

Part two of the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP15) held in Montreal, Canada, in December 2022 adopted the KMGBF as the successor to the Aichi Biodiversity Targets which had been the global framework for biodiversity up to 2020.

At CBD COP15 Part Two, discussions continued on several important agenda including benefit sharing concerning Digital Sequence Information (DSI) on genetic resources. Before dawn on the final day, the KMGBF, resource mobilization, DSI, and other key decisions were agreed upon as a package agreement. Prior to this adoption, Mr. Akihiro Nishimura, the then Minister of the Environment of Japan, attended the meeting as a representative of the Government of Japan. In his statement at the high-level segment and speeches at three side events, he announced Japan’s pledge of 117 billion yen for the support of biodiversity in developing countries

over the 2023–2025 period. He also introduced Japan’s efforts and position, including the launch of the second phase of the Japan Biodiversity Fund (JBF2) (a total of 17 million US dollars) and support for the 700 million yen for the program of Community Development and Knowledge Management for the Satoyama Initiative (COMDEKS) in cooperation with the Keidanren Committee on Nature Conservation.



Mr. Akihiro Nishimura, the then Minister of the Environment, delivered his statements at the high-level segment of CBD COP15

Source: Ministry of the Environment

6 FY 2030 TARGETS

For integrated realization of net-zero, circular economy, and co-existence with nature positive economies in an integrated manner

As Japan works toward reducing its greenhouse gas emissions to net-zero by 2050, it aims to reduce its greenhouse gas emissions by 46% in FY 2030 from its FY2013 levels, furthermore, it will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emissions by 50%, and thus, the 10-year period leading up to 2030 is regarded as the “critical decade.” Japan has also set goals for 2030 for activities such as biodiversity conservation and resource recycling, which are closely related to climate change. Now is the time for government, businesses, and each and every citizen to confirm and share these goals for 2030, and to work toward achieving them by taking collective action that goes beyond the mere extension of what we have done so far.

Decarbonization

46 %
reduction

Reduce greenhouse gas emissions by 46% from FY 2013 levels, and continue strenuous efforts in its challenge to meet the lofty goal of cutting its emissions by 50%

Exemplary action

**Create at least 100
Decarbonization Leading
Areas**

Progress and specific actions in FY2022

**46 Decarbonization
Leading Areas certified**



Harmony with nature

30by30

Effectively conserve and manage at least 30% of terrestrial and inland water areas, and at least 30% of marine and coastal areas

Exemplary action



Expand protected areas such as national parks and improve quality of management

Certify at least 100 sites where biodiversity conservation is being promoted through private-sector initiatives and register them as OECM by the end of 2023

Progress and specific actions in FY2022

Follow-up findings announced for the Comprehensive Assessment of National and Quasi-national Parks

- Japan's 30by30 Roadmap announced
- 30by30 Alliance for Biodiversity launched 419 members (March 2023)
- Trial implementation of a scheme to certify sites where biodiversity conservation is being promoted through private-sector initiatives and to register them as OECM at 56 sites
- National Biodiversity Strategy and Action Plan of Japan 2023–2030, which includes the Japan's 30by30 Roadmap, approved by the national Cabinet

Resource recycling

At least **80** trillion yen

Aim for a market size of 80 trillion yen or more for businesses related to circular economy

Exemplary action

Double the amount of plastic resources collected
Double the amount of metal recycling raw materials processed

Halving food loss and waste



Progress and specific actions in FY2022

Promote recovery of plastic resources including plastic products, based on the Plastic Resource Circulation Act that was implemented in April 2022

Assist demonstration experiment and equipment introduction of CO₂-saving processes for recycling of plastic, metal, and renewable energy-related products

Estimated food loss and waste in FY2020 was approx. 5.22 million tons. (Target: 4.89 million tons, half of the level in 2000.) Promote food loss reduction through creation of Zero Food Loss and Waste Areas, etc.

REALIZATION OF SUSTAINABLE COMMUNITIES AND LIFESTYLES

2

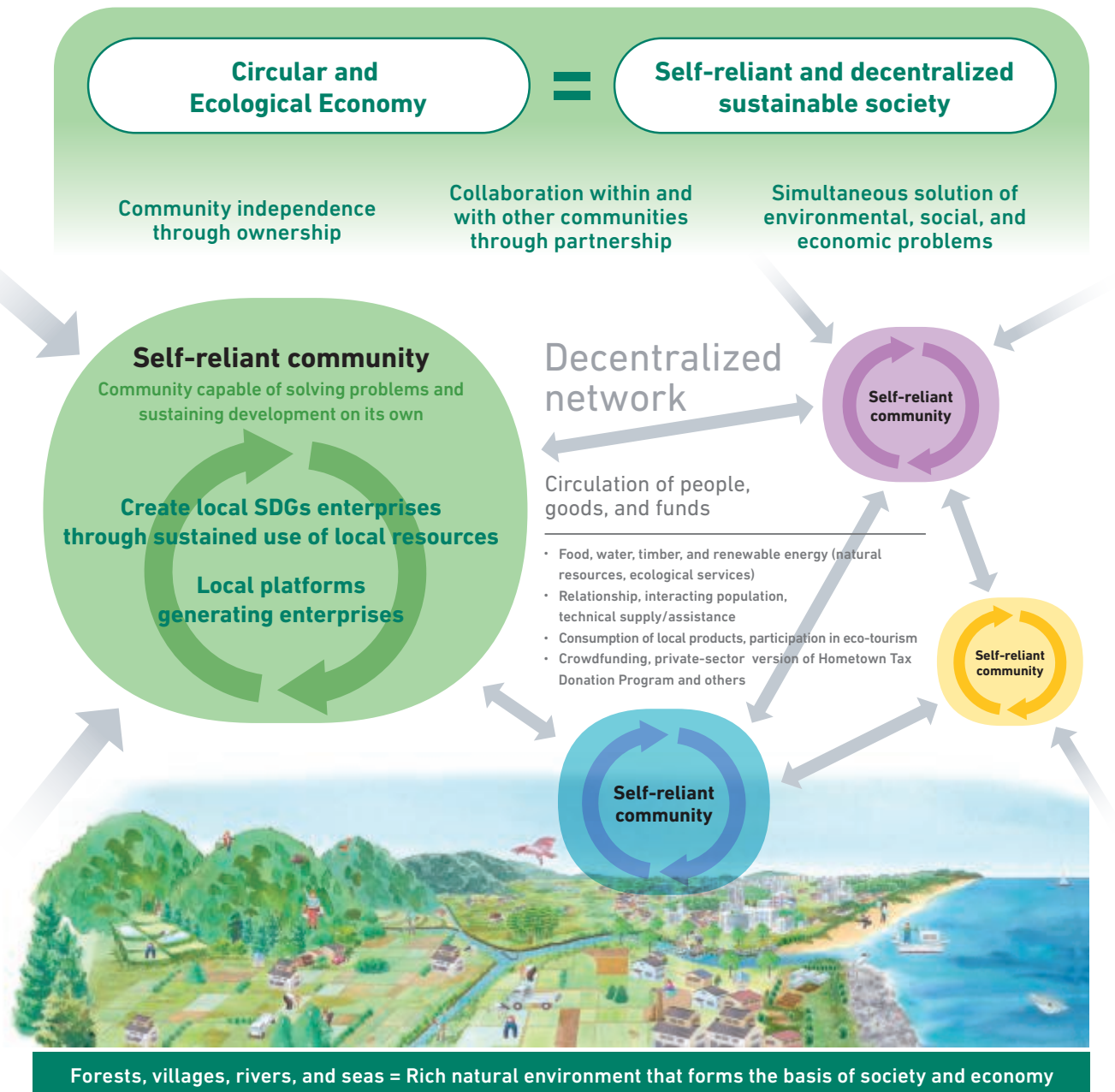


1 FURTHER DEVELOPMENT OF THE CIRCULAR AND ECOLOGICAL ECONOMY

The Circular and Ecological Economy is the concept of a “self-reliant and decentralized society” wherein each local community solves its own challenges self-reliantly through continuous creation of enterprises using local resources and improving the environment, economy, and the society (“local SDGs enterprises”), while making best use of its unique characteristics to network with other

communities and help each other. As the Circular and Ecological Economy represents an approach to solve local environmental, social, and economic challenges in an integrated manner primarily based on the independence of the local communities and in partnership with others, it may also be called local SDGs.

Concept of Circular and Ecological Economy



Best Practice

PaperLab circulates local resource, connects people, and contributes to regional revitalization (Seiko Epson Corporation/Epson Sales Japan Corporation)

Seiko Epson Corporation/Epson Sales Japan Corporation contributes to resource upcycling and the creation of a sustainable society through its PaperLab, a dry-process office papermaking system, which produces new paper from used paper in an almost waterless process. The city government of Shiojiri, Nagano Prefecture, turns its used office paper into resident certificate application and other forms. Several PaperLab machines are placed in the city hall building and other locations in a way that is easily visible to visiting citizens. Some are now included in tour courses in elementary and junior high school social studies lessons, thus serving as tools for environmental education. The city also creates new employment by outsourcing PaperLab-related work to people with disabilities. The collection of used paper and distribution of recycled paper has created a new opportunity for workers to interact more with city officials, resulting in a stronger sense of satisfaction in their work. Miura CO., LTD., a Matsuyama, Ehime-based manufacturer of boilers and other machinery, has introduced PaperLab for the purposes of recycling and information security of its internal documents and for providing jobs to

people with disabilities. Workers created upcycled products, including business cards and novelties. With the aim of going beyond internal efforts to realize a sound material-cycle society, Miura has also launched the KAMING BACK PROJECT®, a project of upcycling used paper in local junior high schools into correspondence notebooks in cooperation with a local printing company and the local J-League professional football team. The project is contributing to regional vitalization through cooperation among industry, academia, and the government.



A lesson on environmental education in social studies class (Shiojiri city, Nagano prefecture)

Source: Seiko Epson

Best Practice

Shizuoka Prefecture SDGs Business Award (Shizuoka Prefecture)

Starting in FY 2021, Shizuoka Prefecture hosts the “Shizuoka SDGs Business Award—Commendation of Future-Oriented Environmental Businesses” every year. To promote environmental businesses and expand the use of ESG financing, the prefectural government invites, fosters, and commends outstanding business ideas and plans for resolving environmental issues.

The prefecture calls for the entry of business ideas, regardless of industry type or category, that are conducive to decarbonization, living with nature, resource circulation, and other environmental challenges in Shizuoka. Applying organizations that pass the screening receive mentoring (side-by-side assistance) from environment and business management experts arranged by the prefecture to improve the business idea.

A unique feature of the program is the involvement of financial institutions (all local banks and shinkin banks in the prefecture), and many other organizations and businesses as collaborating partners. This award helps build business networks and supports the growth of environmental businesses.



FY2022 Kick-off Meeting (Members of the selected groups, mentors, and cooperation partners)

Source: Shizuoka Prefecture

Deepening of the Circular and Ecological Economy

As described above, regional platforms are growing in many parts of the country, where local people are taking the initiative and collaborating in partnership

with and beyond departments and organizations inside and outside the region to solve environmental, social, and economic challenges in an integrated manner.

The continued creation of local SDGs enterprises by regional platforms will make the regions more self-reliant and bring them closer to becoming sustainable societies. Through further development of the Circular and Ecological Economy and its spread nationwide, we will work to contribute to the new

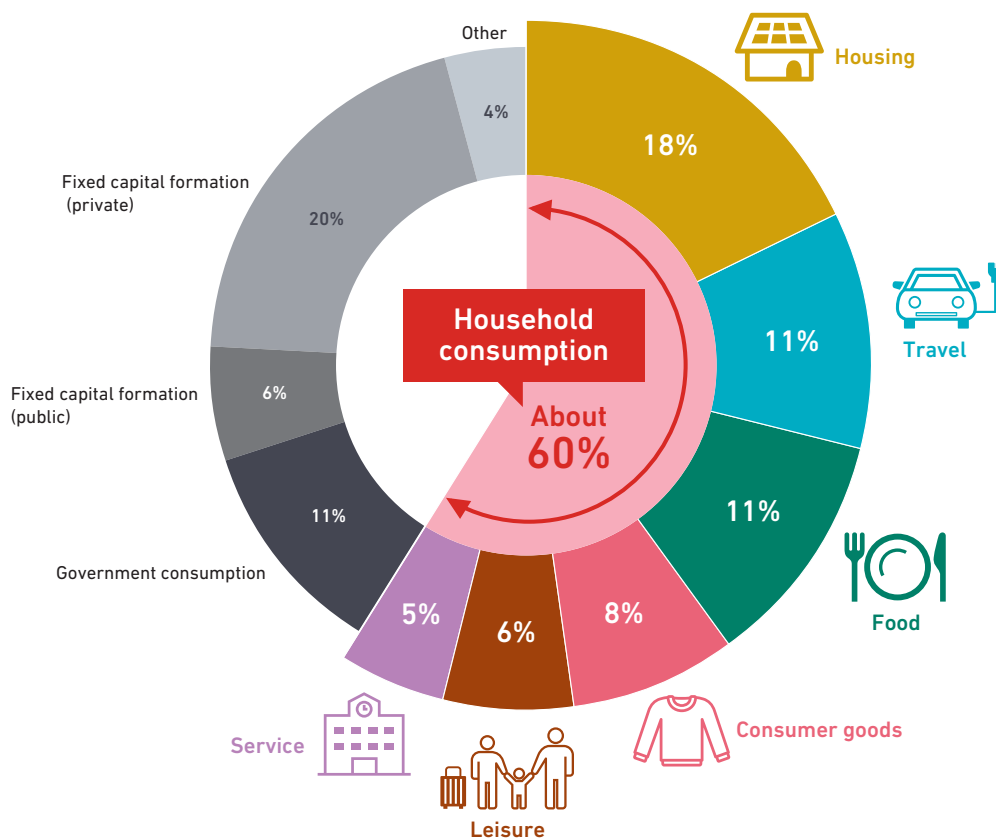
form of capitalism by simultaneously solving sustainability-related social challenges and achieving economic growth, thus trading new avenues for growth that can bring a high quality of life for the future.

2 LIFESTYLE SHIFT

Japan has declared that by 2050, it will realize net-zero GHG emissions; that is, the amount of GHG emissions less the amount of removal by forests and other carbon sinks will be zero. To realize net-zero, not only national and local governments, companies, and other constituent units, but also all ordinary citizens need to change their familiar lifestyle. The need for this change is obvious: if one looks at Japan's GHG emissions on a consumption basis, approximately 60% of the total is reportedly due to households.

The conventional “mass-production, mass-consumption, mass-disposal” type of lifestyle is deteriorating “ecosystem services,” which are the various blessings that nature provides to support us with food, clothing, and shelter. To realize a green society, we need to change our lifestyles from the aspects of housing, travel, food, and fashion to reduce GHG emissions, reduce waste, and place value on resource recycling and natural resources through the 3Rs + Renewable.

Japan's Life cycle Greenhouse Gas Emissions on a consumption basis



Source: Estimated by National Institute for Environmental Studies and Institute for Global Environmental Strategies (IGES) based on: Keisuke Nansai, "Embodied Energy and Emission Intensity Data for Japan Using Input-Output Tables (3EID)" (National Institute for Environmental Studies, 2019); Nansai et al. Resources, Conservation & Recycling 152 104525 (2020); and Ministry of Internal Affairs and Communications, "Input-output Table 2015"

*Each item represents the calculated total amount of greenhouse gas emissions (carbon footprint) throughout the life cycle (i.e., resource extraction, material processing, product manufacturing, distribution, retail, use, disposal) of each consumption/ fixed capital formation product or service in Japan (numbers do not match direct emissions based on domestic production).

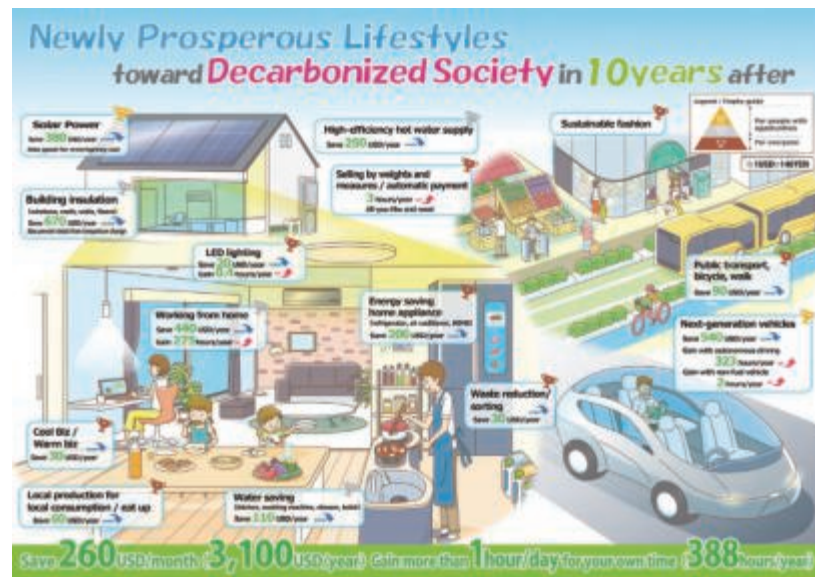
National Movement for New and Prosperous Lifestyles toward Decarbonization and the Public-Private Partnership Council for New National Movement

Substantial CO₂ reductions are needed in our daily lives and lifestyles to achieve net-zero GHG emissions by 2050 and reduction targets for 2030. While 90% of Japanese people know the term “decarbonization,” they do not know what to do about it, and hence, their awareness has not been translated into concrete actions. To encourage people and consumers to change their behavior and lifestyles, the Ministry of the Environment launched the National Movement for New and Prosperous Lifestyles toward Decarbonization in October 2022.

As one of the specific initiatives of the new national movement, a special website has been opened for the new national movement, posting information provided by businesses, municipalities, and organizations neatly sorted into four different categories: (1) information on diverse and comfortable ways of working and living that fully utilize digital technology; (2) information on decarbonization-oriented products and services; (3) information that will support behavioral change through incentives and effective information dissemination; and (4) information on proposed new lifestyles based on the unique characteristics of the region. In this way, we are supporting the creation of new and prosperous lifestyles for the people.

In addition, the Public-Private Partnership Council for New National Movement, which was inaugurated in conjunction with the launch of the new national movement, is undertaking concerted and timely programs and campaigns in cooperation with the national government, local governments, companies, organizations, and consumers. As of March 2023, more than 550 local governments, companies, and organizations are participating in public-private campaigns and projects in many fields, including energy-efficient housing, sustainable fashion, work-from-home and other digital work styles, and electric power saving. The aim is not just to inform the general public about specific products and services designed for decarbonization, but also to provide opportunities and platforms for them to actually feel and experience the products and services first-hand.

For example, regarding energy-efficient of houses, we are running a campaign to promote



Proposed Features of Newly Prosperous Lifestyles

Source: Ministry of the Environment

heat-insulation retrofitting of houses, which will lead to a healthy and comfortable life. House retrofitting, such as these, will contribute to achieving the target of approximately 70% CO₂ emissions reduction from households by FY 2030 (from the FY 2013 levels) and help ensure that the average stock level of energy-saving performance is equivalent to the level of Net Zero Energy House (ZEH) in 2050. 90% of houses in Japan do not meet the current energy-saving standards. It is very important to support energy-efficient retrofitting of residential houses. The Ministry of the Environment, Ministry of Economy, Trade and Industry, and Ministry of Land, Infrastructure, Transport and Tourism have each established new subsidy programs for energy-efficient retrofitting of houses. The ministries will cooperate with each other to establish a single point of contact and strengthen one-stop support for existing programs. In particular, the Ministry of the Environment and the Ministry of Economy, Trade and Industry support the replacement of windows with thermally insulated models with higher energy efficiency. This is expected to improve the average heat insulation performance of houses in Japan in a short period. The New National Movement will make a strong appeal to the public and consumers in general regarding these subsidy programs by collaborating

with various media, including social media, and private-sector crowd-attracting events, while calling for the cooperation of a wide range of related trade

associations. The New National Movement will also cooperate in the initiatives and activities of the organizations involved in the subsidy programs.

3 PROTECTING HUMAN LIFE AND THE ENVIRONMENT

The Ministry of the Environment was created to prevent industrial pollution and protect the natural environment. The fundamental services protecting human life and the environment are of crucial to us

and are our mission. Our roots remain unchanged, and we are working on policies tailored to the times, social changes, and people's lifestyles.

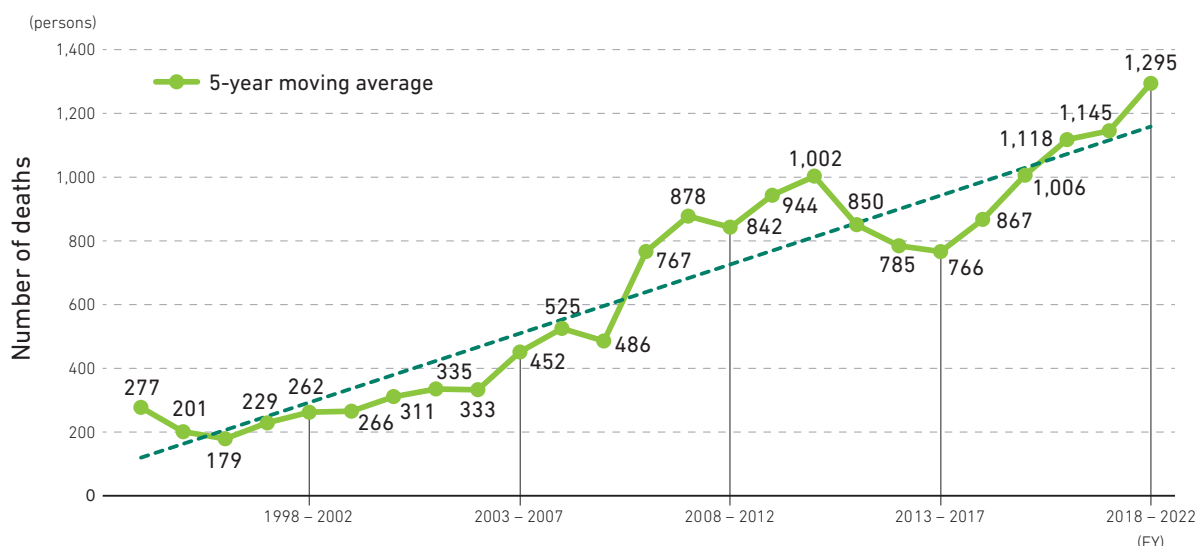
The aggravating heat illness problem and fundamentally stepping-up countermeasures

In recent years in Japan, the numbers of ambulance transports and deaths due to heat illness have been alarmingly high. Between May and September 2022, approximately 71,000 people were transported to emergency hospitals. The annual fatality on a 5-year moving average basis has been over 1,000 for years, exceeding the number of victims of natural disasters. As global warming progresses, the risk of extremely high temperatures is expected to increase. As such, countermeasures against heat illness are an urgent issue in Japan.

With a view to strengthen the measures against heat illness, we had a Bill to Partially Amend the

Climate Change Adaptation Act and the Act on the Environmental Restoration and Conservation Agency, Independent Administrative Agency, approved by the Cabinet in February 2023, and submitted it to the 211th Session of the Diet. The bill creates a reinforced framework of heat illness prevention measures that include: the formulation of a statutory Heat Illness Prevention Action Plan that will set forth the government's countermeasures against heat illness, establishment of a higher level of special Heat Stroke Alert Information, and opening designated heat shelters (cooling shelters) during a special alert.

Heat illness fatalities (5-year moving average)



Note: 2022 data provisional

Source: Ministry of the Environment, based on Ministry of Health, Labour and Welfare, "Vital Statistics"

EFFORTS FOR RECONSTRUCTION AND REVITALIZATION AFTER THE GREAT EAST JAPAN EARTHQUAKE AND NUCLEAR POWER PLANT ACCIDENT

On March 11, 2011, a magnitude 9.0 earthquake occurred off the coast of Japan. It was the most powerful earthquake ever recorded around Japan.

It generated a tsunami that caused massive damage across a wide swath of northeastern Japan, particularly along the Pacific coast. Simultaneously, the accident at the Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station released a large volume of radioactive materials into the environment, forcing many residents to evacuate to other areas. The Ministry of the Environment has been engaged in the efforts aimed at the reconstruction and revitalization of the affected areas, including the decontamination and construction of Interim Storage Facilities, the disposal of specified wastes, and the administration of the Specified Reconstruction and Revitalization Bases (SRRBs) in the Restricted Areas.

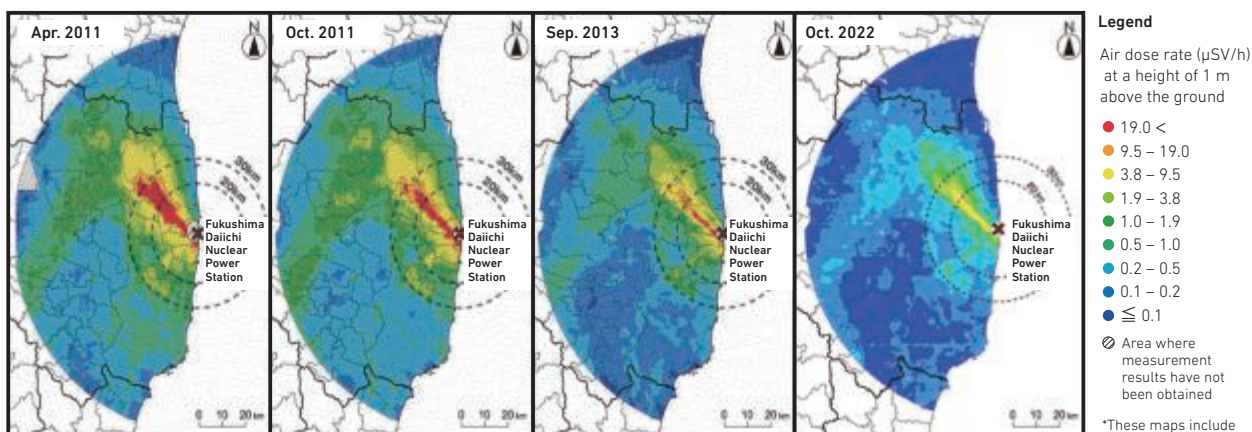
3

1 STATUS OF ENVIRONMENTAL RESTORATION FROM RADIOACTIVE CONTAMINATION

Airborne monitoring within the 80-km zone around the Fukushima Daiichi Nuclear Power Station has shown that the average air dose rate of radioactivity at a height of 1 meter above the ground continues to decline as of October 2022. In addition, according to monitoring in Fukushima Prefecture and

surrounding areas conducted by the Ministry of the Environment, no radioactive cesium has been detected in rivers, coastal area water, or groundwater in recent years. Further, in lakes, radioactive cesium has been detected in only 3 out of 164 spots in FY 2021.

Distribution of air dose rates within 80 km radius of TEPCO Fukushima Daiichi Nuclear Power Station



Note: The April 2011 chart was mapped using a different method than is used now.
Source: Secretariat of the Nuclear Regulation Authority

2 INITIATIVES FOR RESTORING THE ENVIRONMENT IN AFFECTED AREAS

Decontamination measures for soil contaminated by radioactive materials

By the end of March 2018, whole area decontamination of 100 cities, towns, and villages in eight prefectures was completed, excluding Restricted Areas. In addition, decontamination work and the demolition of houses and other buildings in SRRBs have been progressing since December 2017. By the end of February 2023, the progress rate for decontamination was over 90%, while that for demolition in relation to the number of applications received was approximately 86% in the SRRBs.

As a result of these efforts, evacuation orders for the SRRBs were lifted for Katsurao Village and Okuma Town in June 2022, Futaba Town in August 2022, Namie Town in March 2023, Tomioka Town in April 2023, and Iitate Village in May 2023.

Regarding areas outside the SRRBs, the Nuclear Emergency Response Headquarters and the Reconstruction Promotion Council issued a document titled “Consideration on the Lifting of Evacuation Orders to Facilitate Return to and Residence in Areas Outside Specified Reconstruction and Revitalization Bases” in August 2021. Accordingly, efforts will be made to decontaminate necessary locations and lift evacuation orders so that residents who wish to return home may do so over the course of the 2020’s. To implement this government policy, we had a draft law to partially amend the Act on Special Measures for the Reconstruction and Revitalization of Fukushima approved by the Cabinet in February 2023 and submitted it to the 211th Session of the Diet.

Efforts toward final disposal of removed soil and waste within Fukushima Prefecture

Regarding removed soil and waste generated by decontamination work within Fukushima Prefecture, necessary measures are to be taken to complete the final disposal outside Fukushima Prefecture within 30 years of the start of interim storage.

To achieve final disposal outside the prefecture, it is important to reduce the amount of final disposal. To this end, demonstration projects to convert removed soil into recycled soil and to confirm its safety, and the development of technologies for volume reduction and recycling have been carried out. In FY 2022, a new demonstration project for road embankment was launched to investigate the possible use of recycled

soil for road construction. In addition, preliminary coordination with related organizations has been started to conduct demonstration projects outside Fukushima Prefecture.

Following FY 2021, to foster an understanding throughout Japan of soil recycling and final disposal outside the prefecture, various initiatives have been implemented, including dialogue forums around the country on the necessity and safety of volume reduction and recycling of soil, site tours of demonstration projects for the general public, lectures on environmental restoration projects for university students, and others.

Future-oriented initiatives for a new stage of reconstruction

In response to local needs in Fukushima Prefecture, the Ministry of the Environment has promoted environmental restoration initiatives and initiatives for a new stage of reconstruction by identifying Fukushima's strengths from an environmental viewpoint, such as decarbonization, resource circulation, and natural symbiosis. Based on the

“Cooperation Agreement on Promotion of Future-oriented Environmental Measures for the Reconstruction of Fukushima” concluded with Fukushima Prefecture in August 2020, the Ministry of the Environment is working with Fukushima Prefecture and relevant local governments to implement various measures.

Sea area monitoring and countermeasures against adverse impacts on reputation relating to ALPS treated water

At the Inter-Ministerial Council for Contaminated Water, Treated Water, and Decommissioning Issues held in April 2021, regarding the handling of water treated by the Advanced Liquid Processing System (ALPS) and other facilities, it was decided as a basic policy to aim for the discharge of ALPS treated water into the sea after a two-year period based on the premises of assured safety and full measures against adverse impacts on reputation.

Following up to this basic policy, the national government's Comprehensive Radiation Monitoring Plan was revised in March 2022. The Ministry of the Environment commenced sea area monitoring of the concentrations of tritium and other radioactive nuclides in seawater, fish, and seaweed in FY 2022

in advance of the planned discharge of the ALPS treated water. The discharge of ALPS treated water into the sea has been scheduled for FY 2023. The Ministry of the Environment plans to increase the frequency of analysis after the discharge.

In November 2022, experts from the International Atomic Energy Agency (IAEA) and other countries visited Japan to conduct joint sampling as part of an interlaboratory comparison program. Regarding interlaboratory comparisons made since 2014, the IAEA's report for the 2021 results confirmed that Japanese analytical institutions participating in the sea area monitoring program continued to demonstrate their capabilities for accurate and precise measurements.

3 PROMOTING RISK COMMUNICATION RELATED TO RADIATION HEALTH EFFECTS

As a countermeasure against anxieties regarding radiation in Fukushima Prefecture, technical support is being provided to counselors and local government staff to help them respond to consultations from residents, including providing training and dispatching experts. Additionally, for residents who have returned or are considering returning, risk communication is being carried out through round-table discussions and other efforts regarding concerns and questions about radiation that may arise in life after returning. Furthermore, Workshops and seminars are being conducted in response to requests from local governments and educational institutions outside Fukushima Prefecture.

Regarding the health effects of the TEPCO Fukushima Daiichi Nuclear Power Station accident, the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) assessed that “Future health effects directly related to radiation exposure are unlikely to be discernible.” In addition,

the assessment of the Prefectural Oversight Committee for the Fukushima Health Management Survey is that: “At present, no causal relationship between thyroid cancer detected during the first Full-Scale Survey (the second-round survey) and radiation exposure can be identified.” In principle, the Thyroid Ultrasound Examination (TUE) program is conducted for each subject once every two years, and the first Full-Scale Survey (the second-round survey) was conducted from FY 2014 to FY 2015.

Public ignorance of accurate scientific knowledge regarding the health effects of radiation may generate anxiety and rumors, which in turn may lead to discrimination and prejudice. For this reason, the GuGuRu Project was launched in July 2021 to help people develop sound judgment and avoid being misled by rumors; the project is promoting efforts to disseminate accurate information on the health effects of radiation throughout the country in an easy-to-understand manner.

Best
Practice

GuGuRu Project

Under the GuGuRu Project, seminars have been organized in many parts of the country. A major theme of these seminars is the importance of not believing everything one hears but rather perusing it on one's own and developing the ability to make correct judgments. We also provide opportunities for people to think about and send messages against discrimination and prejudice by learning to improve their self-expression capability by trying to make presentations and writing drama lines. Starting in FY2022, we have been carrying out strategic public relations activities from the perspective of behavioral economics, such as tailoring content according to the attributes of different audiences (those with scientific knowledge and no anxiety, those with scientific knowledge and anxiety, those indifferent to radiation, and so on).

The spread of false or misinterpreted information can lead to discrimination and prejudice. The GuGuRu Project also provides opportunities to learn about academic papers, such as the process of publishing a paper and the differences between papers and official reports issued by international organizations. Thus, the methodology of critical thinking related to the reliability and interpretation of scientific knowledge, including the health effects of radiation exposure, is shared with the audience.



Poster for raising awareness



Seminar for students



Publicly soliciting lines to create a drama



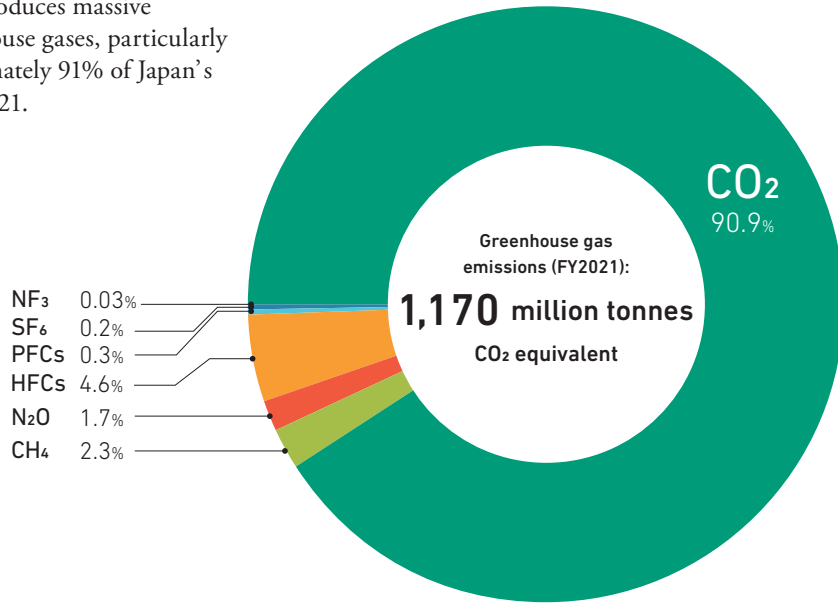
Open lecture for the media

ADDITIONAL MATERIALS

FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2023

Breakdown of Japan's Greenhouse Gas Emissions (FY2021)

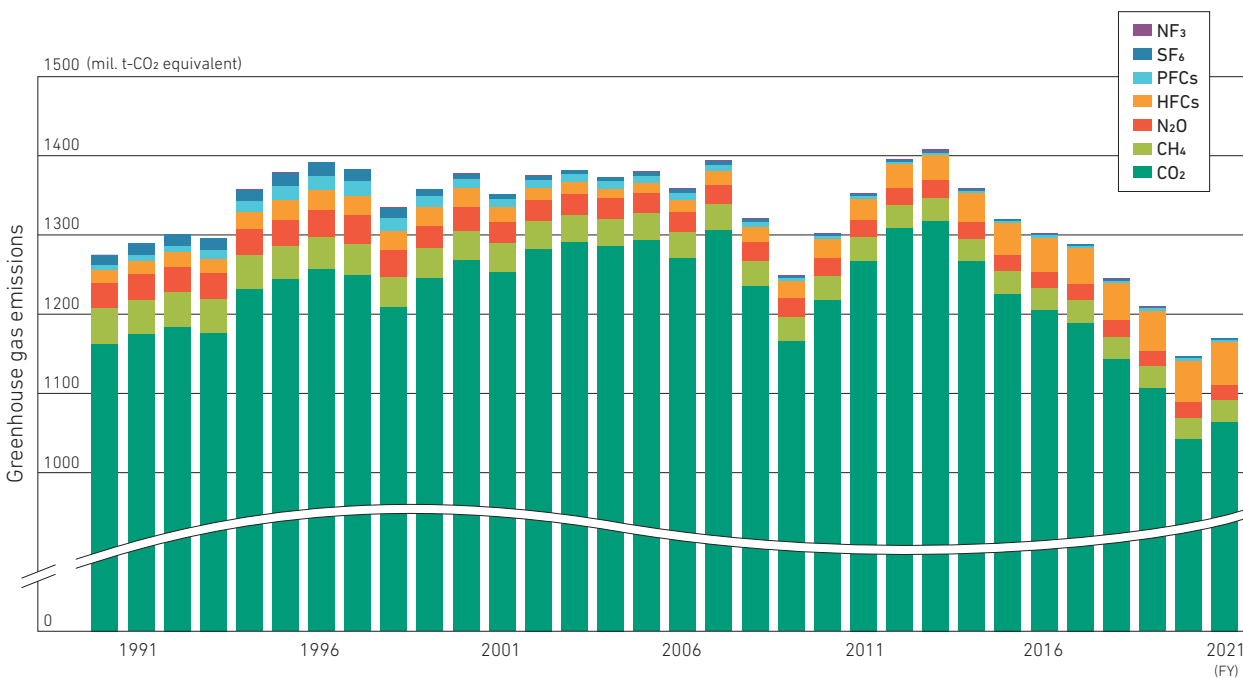
Globally, fossil fuel combustion produces massive amounts of anthropogenic greenhouse gases, particularly CO₂, which accounts for approximately 91% of Japan's greenhouse gas emissions in FY 2021.



Source: Ministry of the Environment

Japan's Greenhouse Gas Emissions

In Japan, the greenhouse gas emissions in FY2021 were equivalent to 1,170 million tonnes of CO₂. Economic recovery from the slowdown caused by COVID-19, including increased manufacturing and energy consumption due to an increase in cargo transport, contributed to a 2.0% increase over the previous fiscal year.



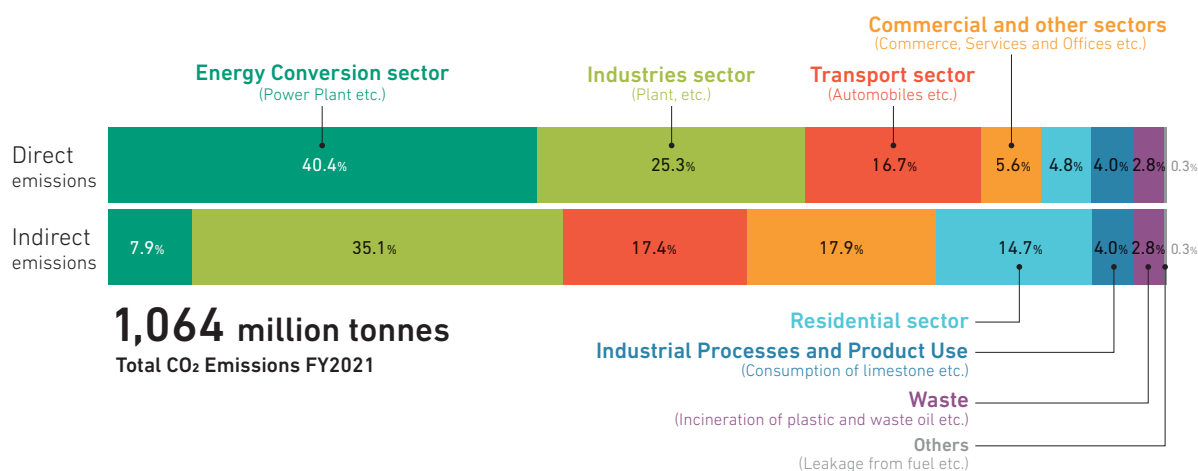
Source: Ministry of the Environment

Japan's GHG Emissions

Additional materials provide more details about the Japan's GHG Emissions

Breakdown of CO₂ Emissions by Sector

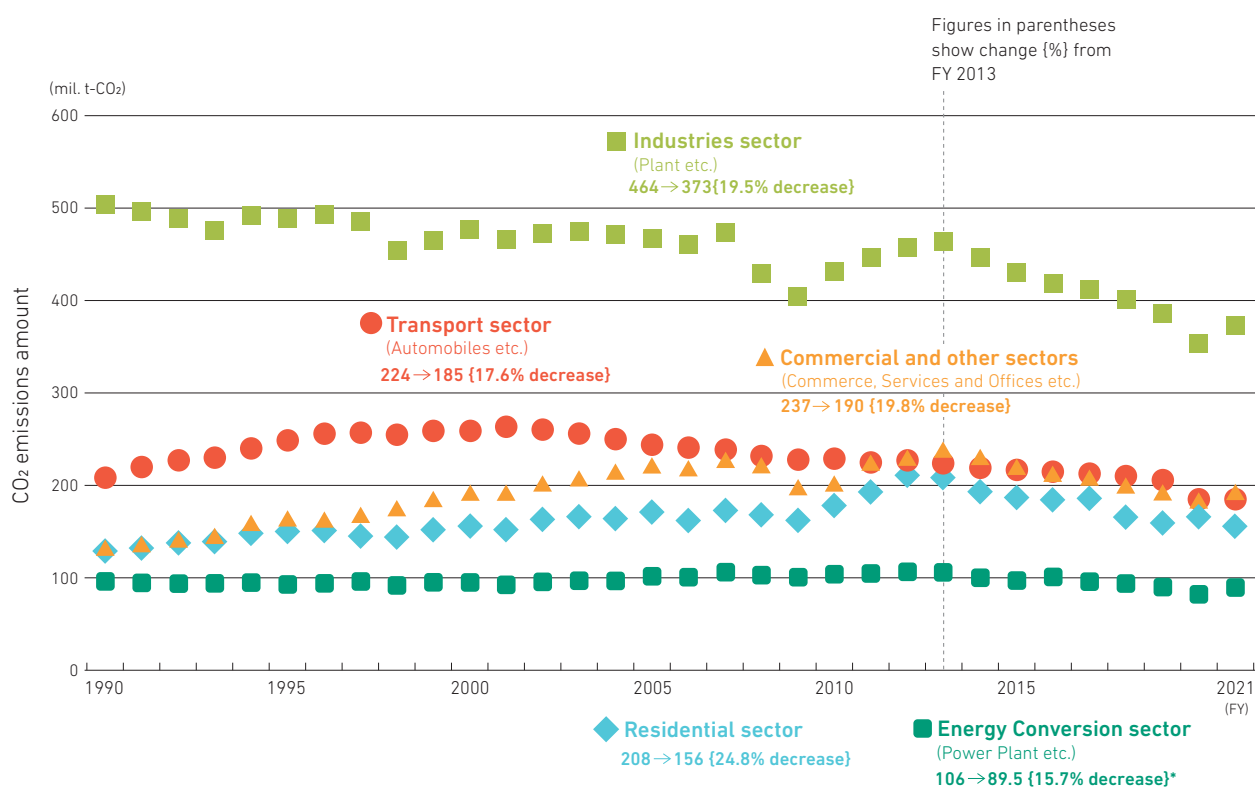
The sector with the largest CO₂ emissions in indirect emissions in FY 2021 was industries sector, accounting for approximately 35.1% of Japan's total.



Source: Ministry of the Environment

Energy-related CO₂ Emissions by Sector (Indirect Emissions)

Plotting energy-related CO₂ emissions by sector reveals that emissions in every sector decreased from FY 2013.



* Excluding statistical discrepancy from power and heat allocation.

Source: Ministry of the Environment

ADDITIONAL MATERIALS

FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2023

Threatened Species in Japan

With an increasing number of species being put on the Red List, which publicizes threatened species, it is clear that the circumstances of wild fauna and flora in Japan continue to be severe.

(Reported in March 2020)

Taxon	Species Targeted for Evaluation	Extinct EX	Extinct in the Wild EW	Threatened Species			Near Threatened NT	Data Deficient DD	Total of listed species	Endangered Local Population LP	
				Endangered Class I		Endangered Class II VU					
				Class IA CR	Class IB EN						
Fauna	Mammals	160 (160)	7 (7)	0 (0)	34(33)			17 (18)	5 (5)	63 (63)	26 (23)
					25(24)		9(9)				
					12(12)	13(12)					
	Birds	Approx. 700 (Approx. 700)	15 (15)	0 (0)	98(98)			22 (21)	17 (17)	152 (151)	2 (2)
					55(55)		43(43)				
					24(24)	31(31)					
	Reptiles	100 (100)	0 (0)	0 (0)	37(37)			17 (17)	3 (4)	57 (58)	5 (5)
					14(14)		23(23)				
					5(5)	9(9)					
Amphibians	91 (76)	0 (0)	0 (0)	47(29)			19 (22)	1 (1)	67 (52)	0 (0)	
				25(17)		22(12)					
				5(4)	20(13)						
Brackish water and freshwater fish	Approx. 400 (Approx. 400)	3 (3)	1 (1)	169(169)			35 (35)	37 (37)	245 (245)	15 (15)	
				125(125)		44(44)					
				71(71)	54(54)						
Insects	Approx. 32,000 (Approx. 32,000)	4 (4)	0 (0)	367(363)			351 (350)	153 (153)	875 (870)	2 (2)	
				182(177)		185(186)					
				75(71)	107(106)						
Shellfish	Approx. 3,200 (Approx. 3,200)	19 (19)	0 (0)	629(616)			440 (445)	89 (89)	1177 (1169)	13 (13)	
				301(288)		328(328)					
				39(33)	28(16)						
Other invertebrates	Approx. 5,300 (Approx. 5,300)	1 (0)	0 (0)	65(65)			42 (42)	44 (44)	152 (151)	0 (0)	
				22(22)		43(43)					
				0(0)	2(2)						
Subtotal of Fauna		49 (48)	1 (1)	1446(1410)			943 (950)	349 (350)	2787 (2759)	63 (60)	
				749(722)		697(688)					
Flora	Vascular plants	Approx. 7,000 (Approx. 7,000)	28 (28)	11 (11)	1790(1786)			297 (297)	37 (37)	2163 (2159)	0 (0)
					1049(1045)		741(741)				
					529(525)	520(520)					
	Bryophytes	Approx. 1,800 (Approx. 1,800)	0 (0)	0 (0)	240(241)			21 (21)	21 (21)	282 (283)	0 (0)
					137(138)		103(103)				
	Algae	Approx. 3,000 (Approx. 3,000)	4 (4)	1 (1)	116(116)			41 (41)	40 (40)	202 (202)	0 (0)
					95(95)		21(21)				
Lichens	Approx. 1,600 (Approx. 1,600)	4 (4)	0 (0)	63(61)			41 (41)	46 (46)	154 (152)	0 (0)	
				43(41)		20(20)					
Fungi	Approx. 3,000 (Approx. 3,000)	25 (26)	1 (1)	61(62)			21 (21)	51 (50)	159 (160)	0 (0)	
				37(39)		24(23)					
Subtotal of Flora		61 (62)	13 (13)	2270(2266)			421 (421)	195 (194)	2961 (2956)	0 (0)	
				1361(1358)		909(908)					
Total of thirteen taxonomic groups		110 (110)	14 (14)	3716(3676)			1364 (1371)	544 (544)	5748 (5715)	63 (60)	
				2110(2080)		1606(1596)					

* Numerals within parentheses indicate the respective numbers of species (including subspecies, variety (only for flora) and form (only for algae and fungi)) from the Red List 2019. The numbers in the LP column are the numbers of local population. ** The number of species excluding those that cannot be evaluated by the naked eye.

The categories are considered as follows:

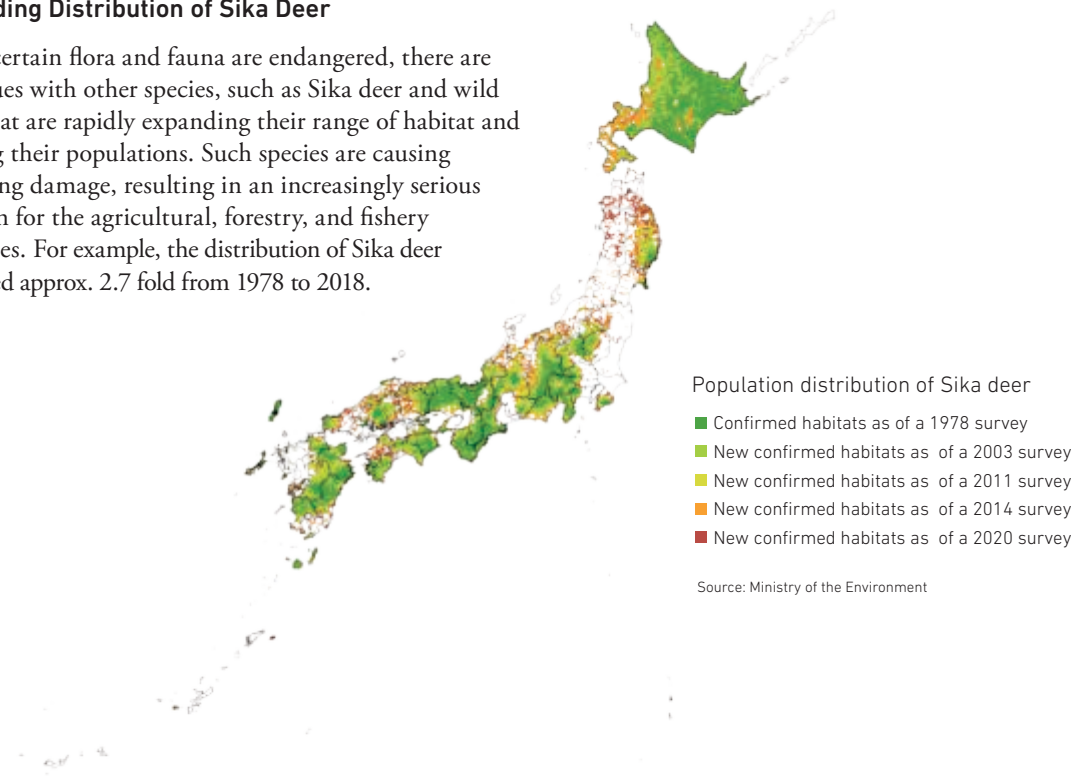
Extinct [EX]: Species that are likely to already be extinct / Extinct in the Wild [EW]: Species that exist only in captivity or as a naturalized population outside its natural habitat / Endangered Class I (Critically Endangered + Endangered) [CR+EN]: Species that are threatened to extinction / Endangered Class I A (Critically Endangered) [CR]: Species that are facing an extremely high risk of extinction in the wild in the near future / Endangered Class I B (Endangered) [EN]: Species that are facing a high risk of extinction in the wild in the near future / Endangered Class II (Vulnerable) [VU]: Species with and increasing risk of extinction / Near Threatened [NT]: Species that are not currently endangered, but may possibly qualify for "endangered" status with changes in their habitat conditions / Data Deficient [DD]: Species with data insufficient for adequate evaluation / Endangered Local Population [LP]: Species with a population isolated regionally, and face a high risk of extinction

Biodiversity

Additional materials provide more details about biodiversity in Japan.

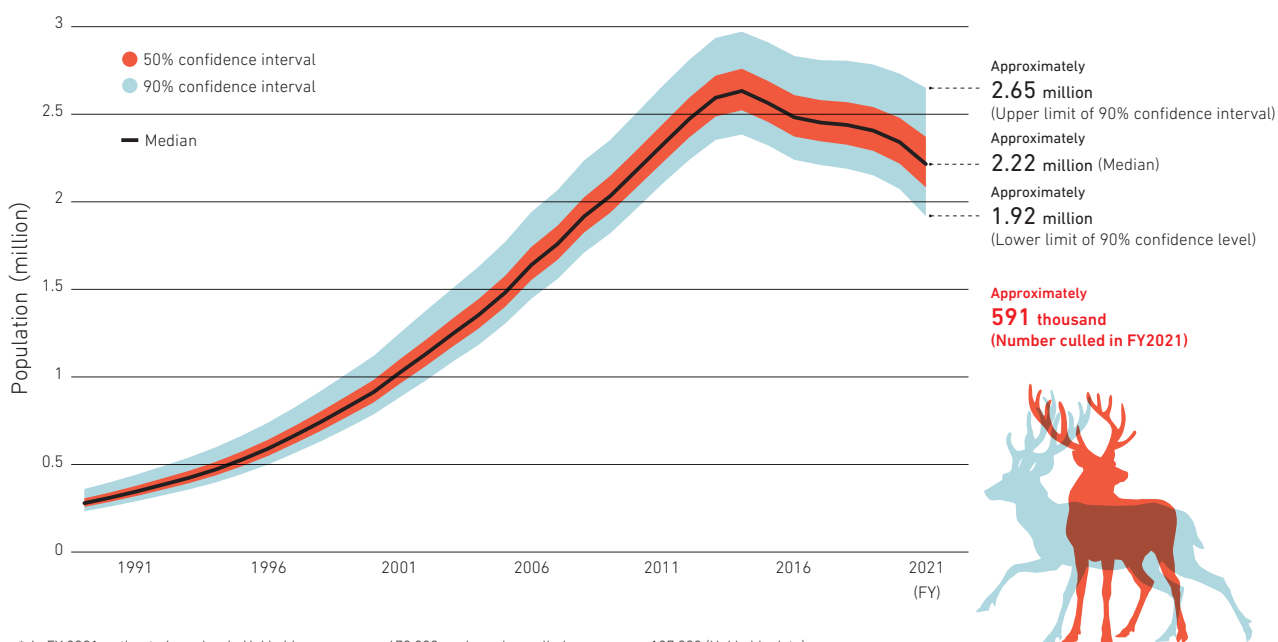
Expanding Distribution of Sika Deer

While certain flora and fauna are endangered, there are also issues with other species, such as Sika deer and wild boar, that are rapidly expanding their range of habitat and growing their populations. Such species are causing increasing damage, resulting in an increasingly serious situation for the agricultural, forestry, and fishery industries. For example, the distribution of Sika deer expanded approx. 2.7 fold from 1978 to 2018.



Estimated Number of Sika Deer in Japan (excluding Hokkaido prefecture*)

By implementation of various approaches, the number of capturing of sika deer increases, and the estimated number of individuals tends to decrease.



*: In FY 2021, estimated number in Hokkaido was approx. 670,000, and number culled was approx. 107,000 (Hokkaido data).

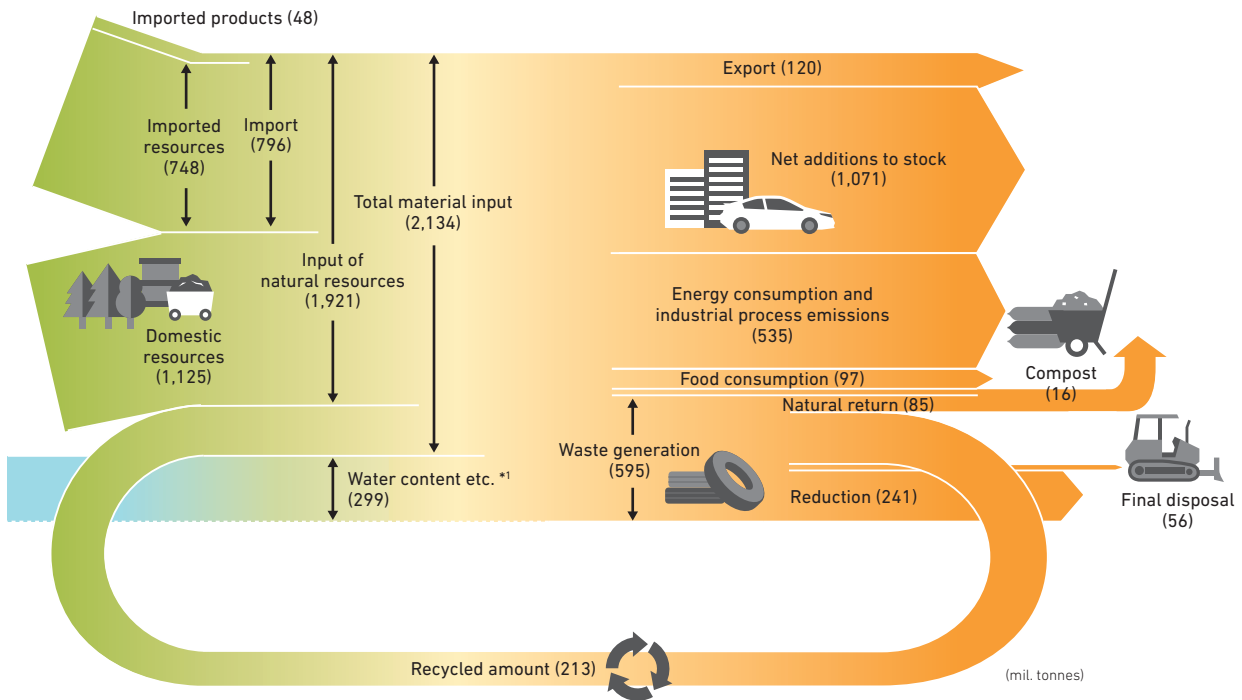
Source: Ministry of the Environment

ADDITIONAL MATERIALS FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2023

Material Flow in Japan

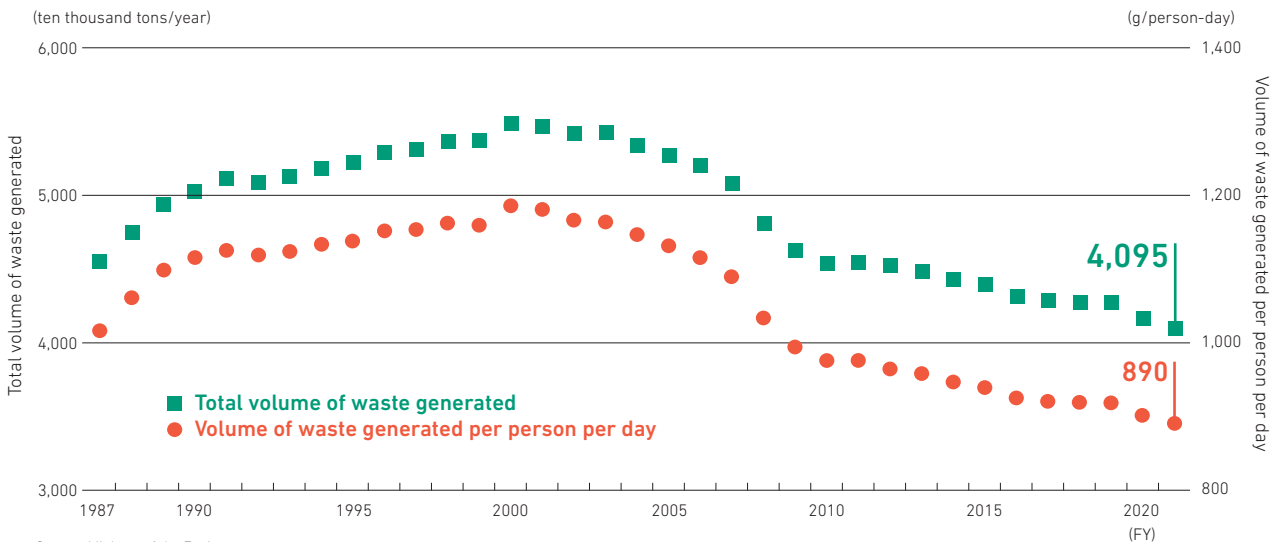
In order to establish a sound material-cycle society, it is necessary to comprehend material flows (or substance flows) to understand the extent of material extraction, consumption, and disposal in Japan. Japan uses material flows to determine targets for the four indicators of resource productivity, cyclical use rate(resource base), cyclical use rate (waste base), and final disposal amount.

FY2000 (for reference)



Total Volume of Waste Generation and Waste Volume Per Person Per Day

Total generated waste and waste generated per person per day are declining year by year.

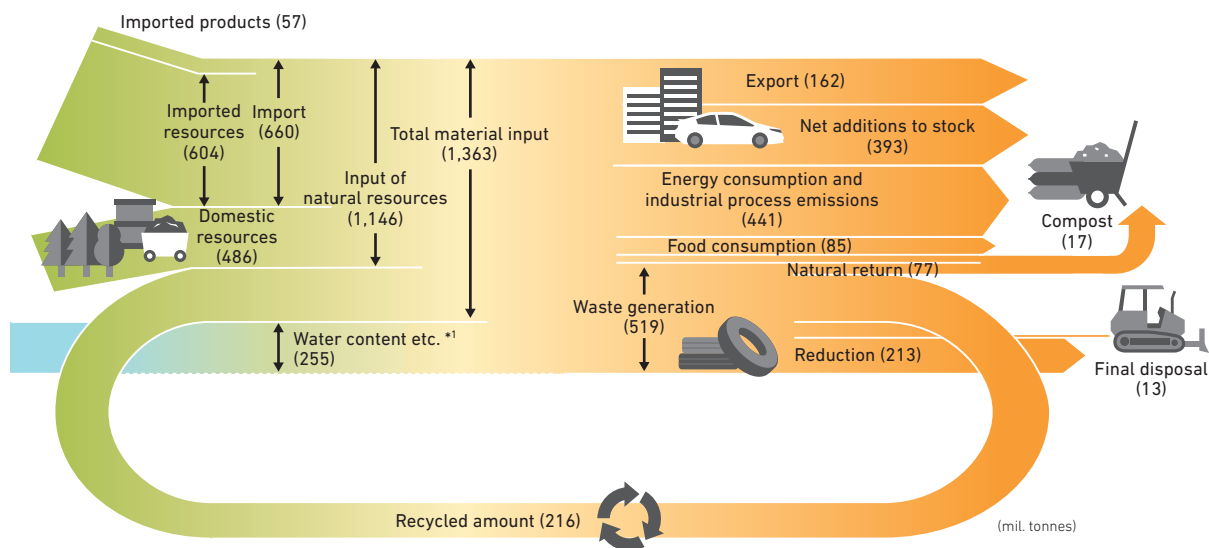


Sound material-cycle society

Additional materials provide more information about current efforts to form a sound material-cycle society.

*1 Water content: water contents of wastes (sludge, livestock waste, night soil, waste acid, waste alkali) and sediments dumped in association with the process of economic activities (sludge in mining, construction and in waterworks as well as slag)

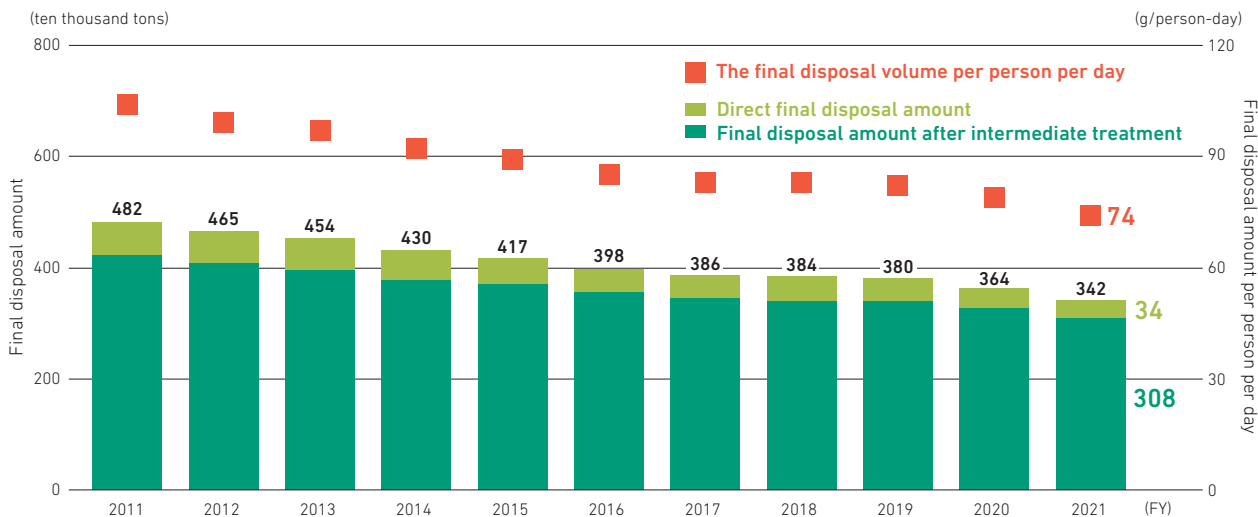
FY2020



Source: Ministry of the Environment

Final Disposal Amount and Final Disposal Amount Per Person

Final disposal amount of waste and final disposal amount per person per day are trending downwards.



Source: Ministry of the Environment

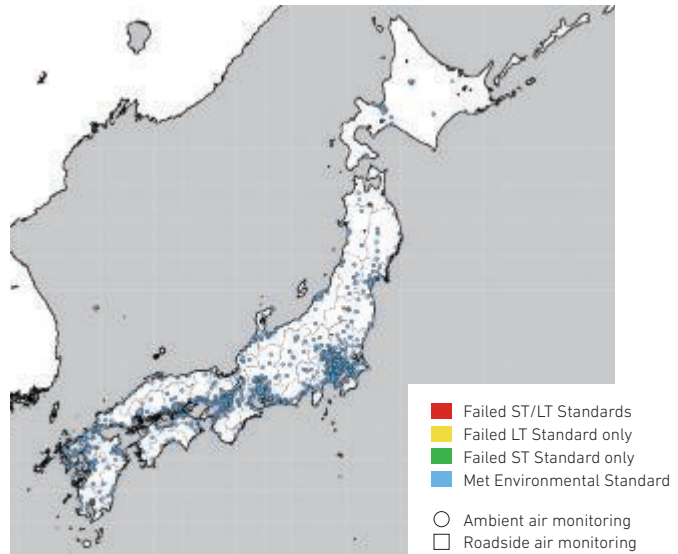
ADDITIONAL MATERIALS FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2023

Fine particulate matter (PM2.5)

In FY2021, the rate of compliance with ambient air quality standards for fine particulate matter (PM2.5) was 100% for ambient air pollution monitoring stations and 100% for roadside air pollution monitoring stations throughout Japan. The annual average was 8.3 µg/m³ for ambient air pollution monitoring stations and 8.8 µg/m³ for roadside air pollution monitoring stations.

Fiscal year	2016	2017	2018	2019	2020	2021
No. of valid stations						
Ambient	785	814	818	835	844	858
Roadside	223	224	232	238	237	240
No. of valid stations compliant with ambient air quality standards						
Ambient	696	732	765	824	830	858
	88.7%	89.9%	93.5%	98.7%	98.3%	100%
Roadside	197	193	216	234	233	240
	88.3%	86.2%	93.1%	98.3%	98.3%	100%

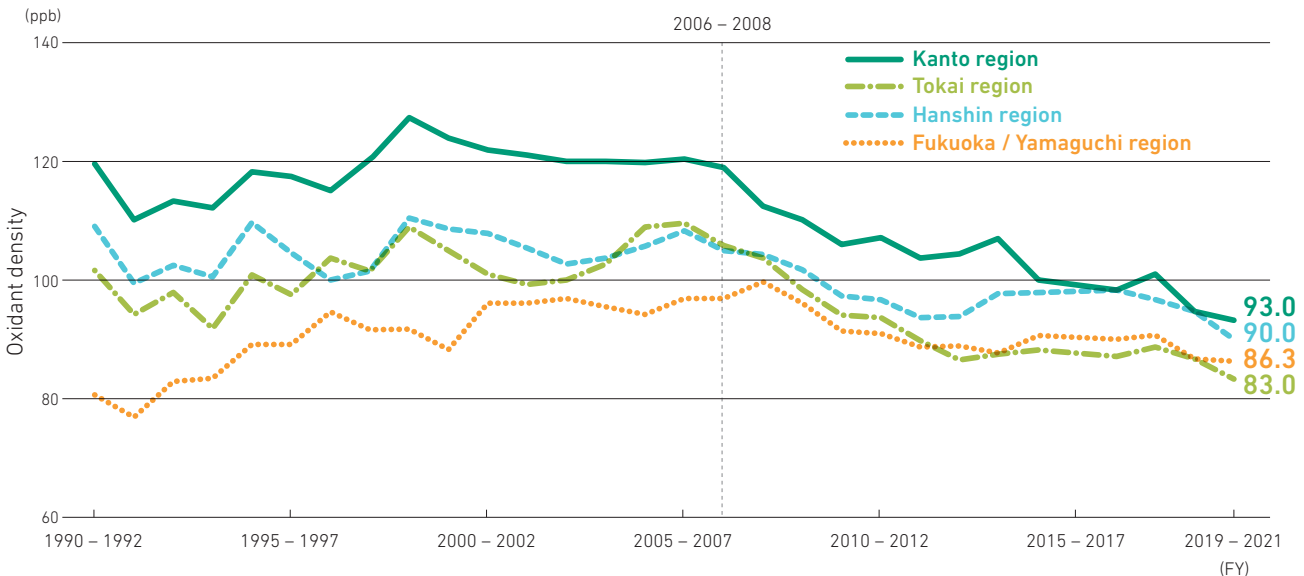
Source: Ministry of the Environment



Source: Ministry of the Environment

Photochemical oxidants

Photochemical oxidant concentrations (the highest value within a region of the 3-year average of the 99th percentile values of highest 8-hour daily values) had been tending to decline since around FY2006 to FY2008, but in recent years they have tended to be almost flat.



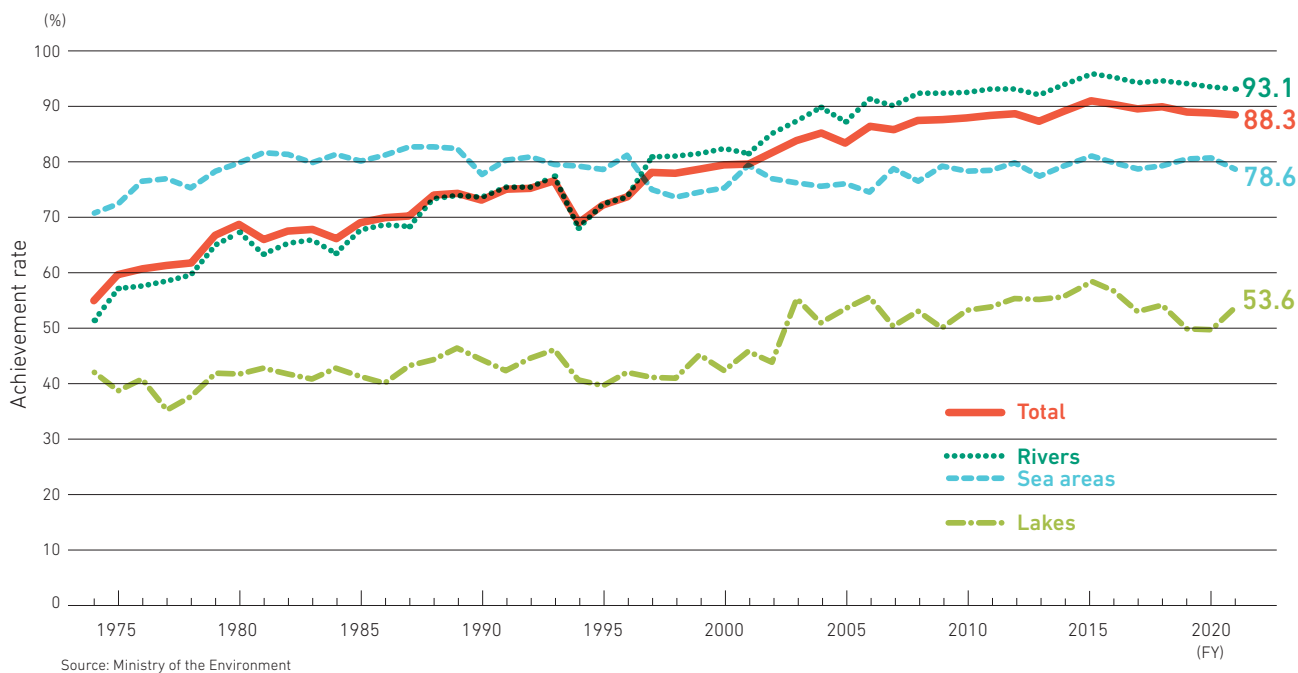
Source: Ministry of the Environment

Atmospheric and water environments

Additional materials provide more details about biodiversity in Japan.

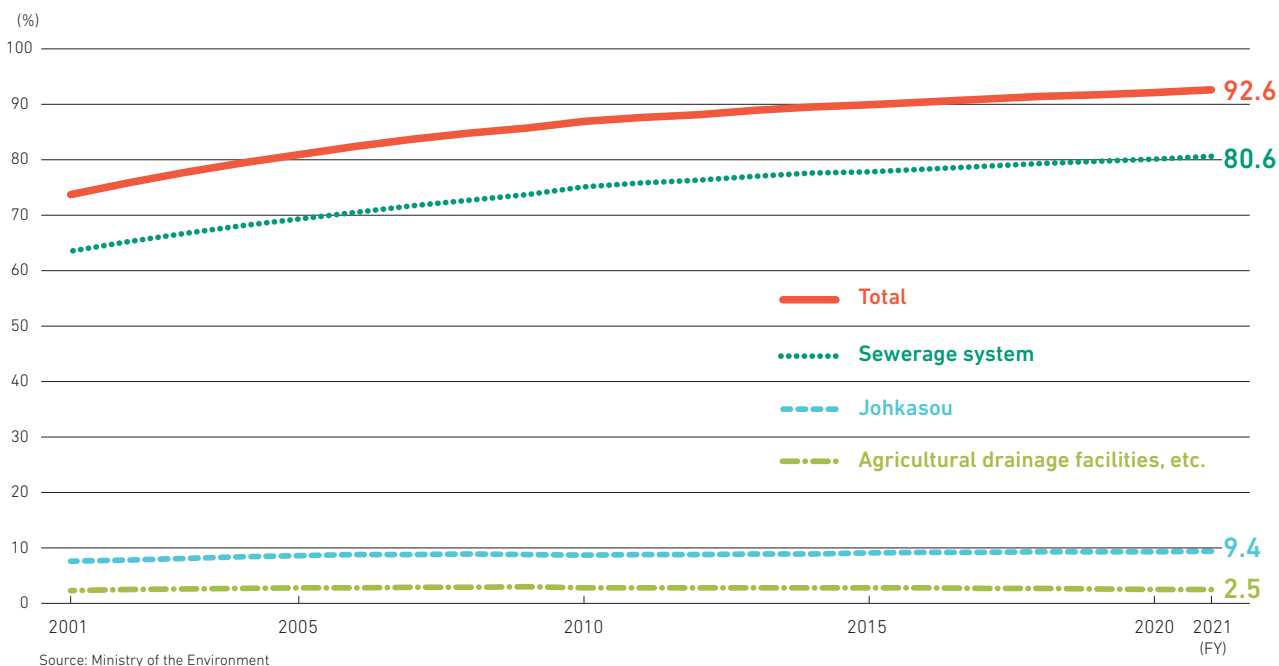
Achievement of Environmental Standards (BOD or COD)

An overall level of 88.3% has been achieved for the biochemical oxygen demand (BOD) and chemical oxygen demand (COD) environmental standards relating to the maintenance of living environments. BOD and COD are leading indicators of water quality in respect of organic pollution.



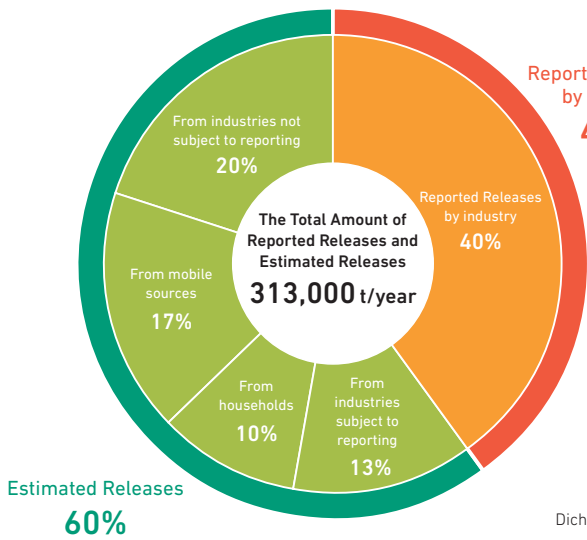
Coverage of Population Served by Wastewater Treatment System

The population coverage of wastewater treatment systems in Japan is 92.6%. Wastewater treatment facilities are being installed to cover the population not yet served by the wastewater treatment systems.



ADDITIONAL MATERIALS FROM THE ANNUAL REPORT ON THE ENVIRONMENT IN JAPAN 2023

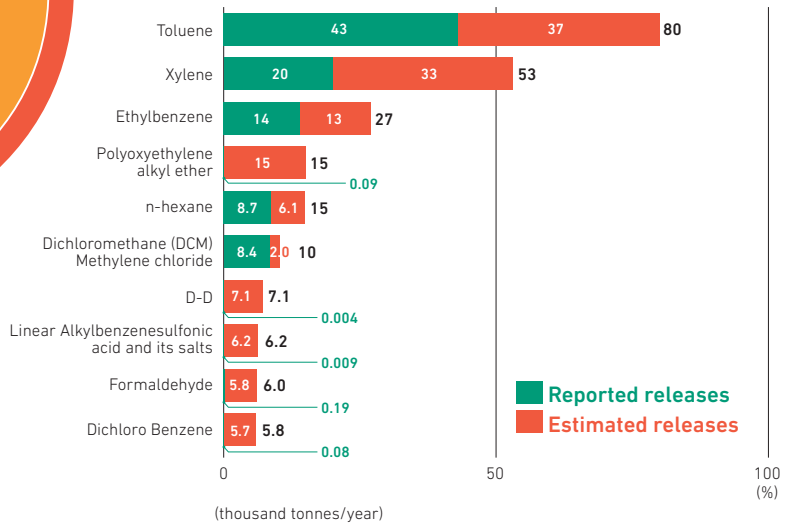
Breakdown of Reported Releases by Industry and Estimated Releases of Chemical Substances in FY 2021



Notes: The reported releases are from the business entities categorized as subjected to reporting. Releases are estimated for businesses that do not meet the reporting requirements, such as number of employees, annual handling quantity, etc., and are exempted from reporting.

Source: Ministry of Economy, Trade and Industry and Ministry of the Environment

Top 10 Chemicals with High-volume of Reported Releases and Estimated Releases (FY 2021)



Source: Ministry of Economy, Trade and Industry and Ministry of the Environment

In March 2023, the government compiled data reported from businesses concerned on release and transfer of chemical substances complying with the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Law). Releases that were not subject to reporting were estimated.



Chubusangaku National Park

Established in 1934 as one of the first national parks, Chubusangaku National Park is a mountainous park that represents the nation with a string of mountains dominating the entire Northern Alps. The park consists of some of Japan's most famous mountains rising 3,000 m above sea level from north to south, including the Ushiro-Tateyama Mountain Range with Mt. Shiroumadake as the highest peak, the Tateyama Mountain Range with Mt. Tsurugidake and Mt. Tateyama, the Hotaka Mountain Range with Mt. Yarigatake, and Mt. Norikuradake located at the south end of the park.

In terms of landscape, steep rock cliffs, deep and precipitous valleys, alpine belts, rock ptarmigans, a blanket of snow over the valleys that lingers till summer months, glacier-eroded U-shaped valleys, and lakes and lava plateaus formed by volcanoes all create a richly diverse mountain landscape that captivates many climbers and visitors.

This photo of Mt. Goryudake was taken from Mt. Shiratake in August. In the afternoons, mountain fogs rise to accentuate the ridge line.

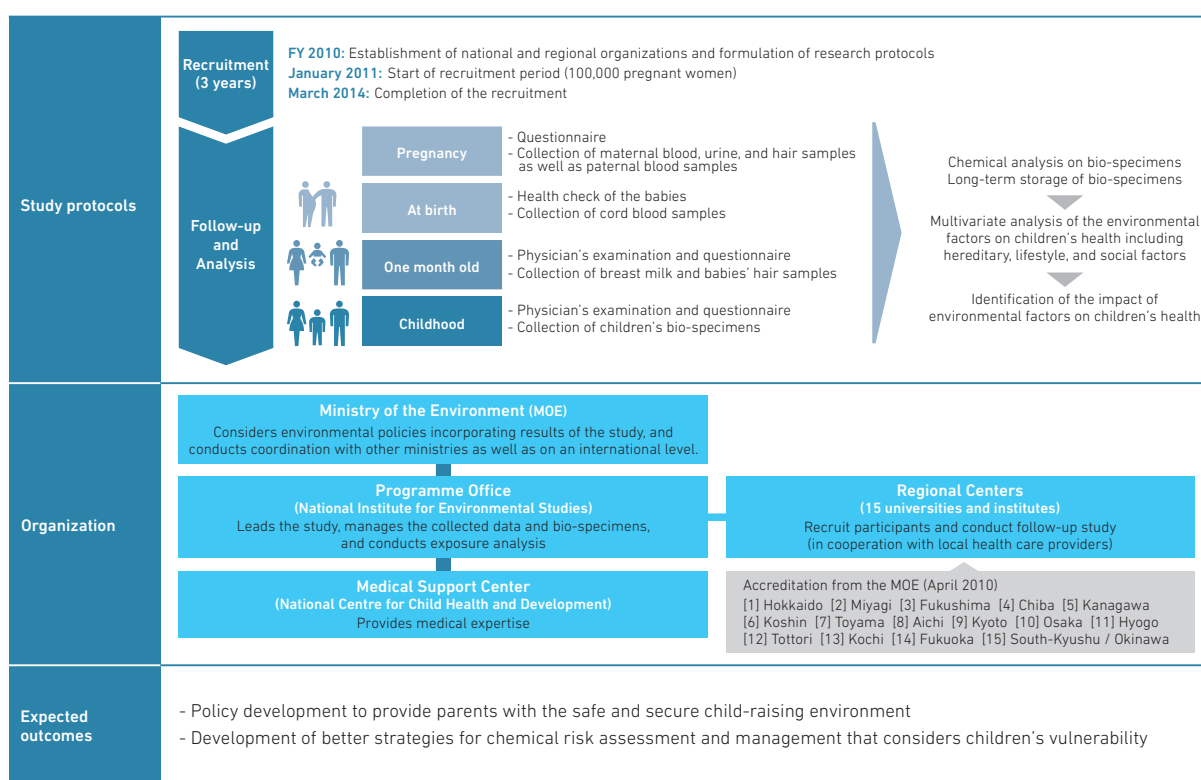
Environmental risks of chemicals

The following data provides information on action regarding chemical substance emissions into the environment and initiatives for children's environmental health.

The Japan Environment and Children's Study (JECS)

The Japan Environment and Children's Study (JECS), a large-scale, long-term national birth cohort study involving 100,000 mother-child pairs, was launched in FY 2010. The Sub-cohort study, which includes home visits for environmental measurements, medical examinations and children's bio-specimen collection, began in November 2014, involving 5,000 participants selected from the Main Study. In FY2022, a conceptual plan was formulated to conduct the follow-up study on the participants of ages 13 and higher in FY2024.

JECS is a large-scale, long-term prospective cohort study to examine the impact of the exposure to chemicals during pregnancy and childhood on children's health.



Source: Ministry of the Environment



Rock Ptarmigan

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