



Chapter 3 Passing on the Life of the Earth to the Future



In order to preserve the healthy condition of the Earth, which is the basis of human existence, conservation and sustainable use of biodiversity, along with the measures against global warming, are essential. The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10), which was held in Nagoya City, Aichi Prefecture in October 2010, was a historic conference that left significant results such as adoption of the “Aichi Biodiversity Targets,” new global targets

related to biodiversity, and the “Nagoya Protocol,” which relates to Access to Genetic Resources and Benefit-Sharing (ABS). In addition, international society is beginning to make big strides in aiming to realize a “world living in harmony with nature” by 2050. In this chapter we will discuss the results of COP10, the future direction of efforts within and outside Japan based on those results, and efforts by private sector and households.

Section 1 The Results of COP10 and COP-MOP5, and Future Development

1. The Background of Holding COP10

The Convention on Biological Diversity was opened for signature along with the United Nations Framework Convention on Climate Change, at the United Nations Conference on Environment and Development (Earth Summit) that was held in Rio de Janeiro, Brazil, and entered into force the following year 1993. Indeed there had been various conventions prior to that with the objectives of conserving specific areas or rare species of wildlife, such as the Ramsar Convention (The Convention on Wetlands of International Importance especially as Waterfowl Habitat) and CITES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora), but such specific conventions did not cover the topic about the importance of a comprehensive framework to preserve biodiversity.

The Convention on Biological Diversity has following three objectives: 1) conservation of biological diversity, 2) sustainable use of its components, and 3) the fair and equitable sharing of benefits arising from the utilization of genetic resources. There are many topics, ranging from issues that are deeply related to conservation, such as “protected areas,” “forests,” “marine and coasts” and “invasive alien species,” to those such as “climate change,” “businesses” and “financial mechanism.” They are expanding in reflection of the trends of international biodiversity issues (Table 3-1-1: Major Themes of the Convention on Biological Diversity).

192 states and the European Union are the Parties to the Convention on Biological Diversity, which means that most of the countries in the world are participating (as of March 2011 (The U.S. has not yet accepted.)). The Conference of the Parties (COP), which is the highest decision-making body of Convention on Biological Diversity, is held about

every two years (Table 3-1-2: Background of the COPs). In addition to the governments that are Parties to the Convention, various players such as non-party countries, the United Nations organizations, local municipalities, NGOs, organizations of indigenous peoples and local communities, corporations and educational organizations can also participate at the COP as observers. The number of participants in the COP increases every time, and what was

Table 3-1-1 Major Themes of the Convention on Biological Diversity

Thematic Programs	Cross Cutting Issues
<ul style="list-style-type: none"> • Agricultural Biodiversity • Dry and Sub-humid Lands Biodiversity • Forest Biodiversity • Inland Waters Biodiversity • Inland Biodiversity • Marine and Coastal Biodiversity • Mountain Biodiversity 	<ul style="list-style-type: none"> • 2010 Biodiversity Targets • Access to Genetic Resources and Benefit Sharing (ABS) • Biodiversity for Development • Climate Change and Biodiversity • Communication, Education, & Public Awareness (CEPA) • Economic, Trade, and Incentive measures • Ecosystem approach • Global Strategy for Plant Conservation Strategy for preserving the world's plants • Global Taxonomy Initiative • Impact Assessment • Identification, Monitoring, Indicators, and Assessment • Invasive Alien Species • Liability and Redress (Article 14.2) • Protected Areas • Biodiversity and Sustainable • Tourism and biodiversity • Traditional Knowledge, Innovations, and Practices (Article 8 (j)) • Technology Transfers and Cooperation

Source: Created by the Ministry of the Environment, based on the information on the Convention on Biological Diversity Secretariat website

Table 3-1-2 Background of the Conference of the Parties to the Convention on Biological Diversity (COP)

Conference of the Parties	Date / Venue	Overview
COP1	November 28 – December 9, 1994 Bahamas (Nassau)	<ul style="list-style-type: none"> • Adoption of rules of procedure for the Conference of the Parties • Designation of a standing secretariat, and establishment of Subsidiary Bodies for Scientific, Technical and Technological Advice (SBSTTA) • Designation of the Global Environment Facility (GEF) as an interim financial mechanism • Decisions related to organizational matters for the secretariat and the Conference of the Parties, etc.
COP2	November 6 – 17, 1995 Indonesia (Jakarta)	<ul style="list-style-type: none"> • Decision on the location of the secretariat (Montreal, Canada) • Establishment of an ad hoc group of experts on biosafety • Adoption of guidelines related to marine and coastal biodiversity (Jakarta Mandate)
COP3	November 4 – 15, 1996 Argentina (Buenos Aires)	<ul style="list-style-type: none"> • Conclusion of a memorandum of understanding with the GEF • Reconsideration of Implementing Agenda 21, etc.
COP4	May 4 – 15, 1998 Slovakia (Bratislava)	<ul style="list-style-type: none"> • Adoption of program of work for inland water ecosystems, forest biodiversity and marine and coastal biodiversity • Establishment of a working group related to traditional knowledge, etc.
Extraordinary Meeting of the Conference of the Parties (ExCOP)	February 22 – 23, 1999 Colombia (Cartagena) January 24 – 28, 2000 Canada (Montreal)	<ul style="list-style-type: none"> • Adoption of the Cartagena Protocol on Biosafety
COP5	May 15 – 26, 2000 Kenya (Nairobi)	<ul style="list-style-type: none"> • Adoption of a programme of work for agricultural biodiversity, dry and sub-humid lands biodiversity, and traditional knowledge • Establishment of a working group for access and benefit sharing (ABS) of genetic resources, etc.
COP6	April 7 – 19, 2002 The Netherlands (The Hague)	<ul style="list-style-type: none"> • Adoption of a strategic plan for the convention (2010 Target) • Adoption of the Bonn Guidelines related to ABS, etc. ※Announcement of Global Biodiversity Outlook 1 (GBO1) (November, 2001)
COP7	February 9 – 20, 2004 Malaysia (Kuala Lumpur)	<ul style="list-style-type: none"> • Establishment of a working group for protected areas, and a working group for implementation of the convention • Decision to consider an "ABS International Regime" as a mandate for the ABS working group
COP8	March 20 – 31, 2006 Brazil (Curitiba)	<ul style="list-style-type: none"> • Decision to have the ABS working group conclude consideration of the ABS International Framework by COP10 • Announcement of Global Biodiversity Outlook 2 (GBO2), etc.
COP9	May 19 – 30, 2008 Germany (Bonn)	<ul style="list-style-type: none"> • Confirmation of strengthening the efforts aimed at achieving the 2010 Target • Consideration of revising the new strategic plan for the convention
COP10	October 18 – 29, 2010 Japan (Nagoya City, Aichi Prefecture)	<ul style="list-style-type: none"> • Adoption of a new strategic plan for the convention (post-2010 targets (Aichi Biodiversity Targets)) • Adoption of the Nagoya Protocol on ABS, etc. ※Announcement of Global Biodiversity Outlook 3 (GBO3) (May 2010)

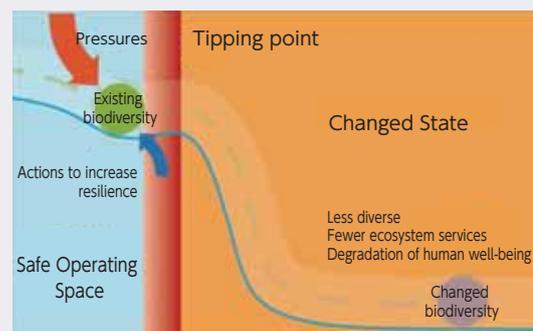
Source: Ministry of the Environment

approximately 700 people at COP1 in 1994 surpassed 7,000 people at COP9 in 2008 and came to surpass 13,000 people at COP10 in 2010 (the numbers of participants in COP9 and COP10 include media local staff). In addition, since the G8 Environment Ministers Meeting held in 2007 in Bonn, Germany, the issue of biodiversity has become important topic at G8 process and thus global attention is increasing every year. The COP10, which was held in 2010, had significant meaning on the following three points above all.

Firstly, 2010 was the target year for the “2010 Biodiversity Targets”. At COP6 in 2002, a “Strategic Plan for the Convention on Biological Diversity” (hereinafter referred to as the “Strategic Plan”), which included that “2010 Biodiversity Targets” to “significantly reduce the current rate of biodiversity loss by 2010,” was adopted, and efforts aimed at achieving the target were undertaken throughout the world. However, the “Global Biodiversity Outlook 3 (GBO3)”, which was published in May 2010 by the Secretariat of the Convention on Biological Diversity, underlined that nine out of the fifteen assessment indicators showed negative trend, and concluded that “the 2010 biodiversity target has not been met” and “the state of biodiversity continues to decline” (Figure 3-1-2: Trends Shown by Agreed Indicators of Progress towards the 2010 Biological Target). It was also pointed out that if the loss continues as it is, it is possible that the “tipping point,”

which is the point of limit up to which ecosystems can recover on their own, will be crossed, and serious damage for the future generations will be caused (Figure 3-1-1: Tipping Points - an Illustration of the Concept). Moreover, it was pointed out that the question of whether or not the relatively stable environment conditions that humans have relied on for the past 10,000 years could continue into the next centuries would be determined by the actions of the next ten to twenty years. Amid this sense of crisis, COP10

Figure 3-1-1 Tipping Point an illustration of the concept



Source: Secretariat of the CBD Secretariat, “Global Biodiversity Outlook 3 (GBO3)”

was expected to agree a “New Strategic Plan” that includes new global targets for 2011 and beyond, and to immediately proceed with renewed efforts aimed at conservation of biodiversity and its sustainable use without interruption.

Secondly, consideration of an international regime on “ABS” was expected to be completed before COP10. “ABS” is a mechanism by which, for example, when a pharmaceutical company in a user country (mainly developed

Figure 3-1-2 Trends of Indicators Related to 2010 biodiversity Target

Status and trends of biodiversity components		
	Extent of selected biomes, ecosystems, and habitats	Most habitats are declining in most parts of the world. Forest area expands in some regions. Loss of mangroves has slowed, except in Asia. **
	Abundance and distribution of selected species	Most species with limited population size and distribution are reduced. *** (only limited number of taxa assessed)
	Changes in status of threatened species	While some species have shown recovery, extinction risk increases for many threatened species. *** (for those species assessed)
	Genetic diversity of domesticated animals, cultivated plants, and fish species	Genetic variety of cultivated species may be declining. * (but many cases with high certainty also exist)
	Coverage of protected areas	Coverage of both terrestrial and marine protected areas shows increase. Many ecological regions, particularly marine ecosystems, remain under-protected. Protected areas' management effectiveness remains variable. ***
Ecosystems integrity and ecosystem goods and services		
	Marine Trophic Index (Mean Trophic Level)	Despite intense pressure, the Marine Trophic Index has modestly increased globally since 1970, with substantial regional variation. ***
	Connectivity-fragmentation of ecosystems	Fragmentation is advancing in most terrestrial and aquatic ecosystems, despite an increased recognition of the value of corridors and connections. ***
	Water quality of aquatic ecosystems	Most parts of the world may be suffering from water quality declines. In some areas it has improved through pollution control. **
Threats to biodiversity		
	Nitrogen deposition	Reactive nitrogen creation rate on the planet's surface has doubled. Effect of nutrient pollution is also increasing. ***
	Trends of invasive alien species	Alien species is increasing in all ecosystems. ** (but many cases with high certainty also exist)
Sustainable use		
	Areas of sustainably-managed forest, agricultural and aquaculture ecosystems	Despite considerable efforts underway, major efforts are further required to increase the areas. *
	Ecological footprint and related concepts	The ecological footprint of humanity is increasing. Resource efficiency efforts are compensated by consumption increase by a growing prosperous population. ***
Status of traditional knowledge, innovations, and practices		
	Linguistic diversity and numbers of indigenous-language speakers	Many minority languages are in danger of disappearing, and linguistic diversity is very likely declining. * (but many cases with high certainty also exist)
Status of access and benefit-sharing		
	Development of ABS indicator	The need and options for additional indicators are being examined by ABS Working Group.
Status of resources transfers		
	Official development assistance (ODA) provided to support the Convention	ODA for biodiversity has increased in the past few years. ***

Negative changes Positive changes No clear global trend. Positive and negative changes are occurring depending on the region or biome considered. ? No information to reach a definitive conclusion
Level of certainty: Low * Medium ** High ***

Source: Secretariat of the CBD, “Global Biodiversity Outlook 3 (GBO3)”



Figure 3-1-3 Overview of the Framework of Access to Genetic Resources and Benefit Sharing (ABS)

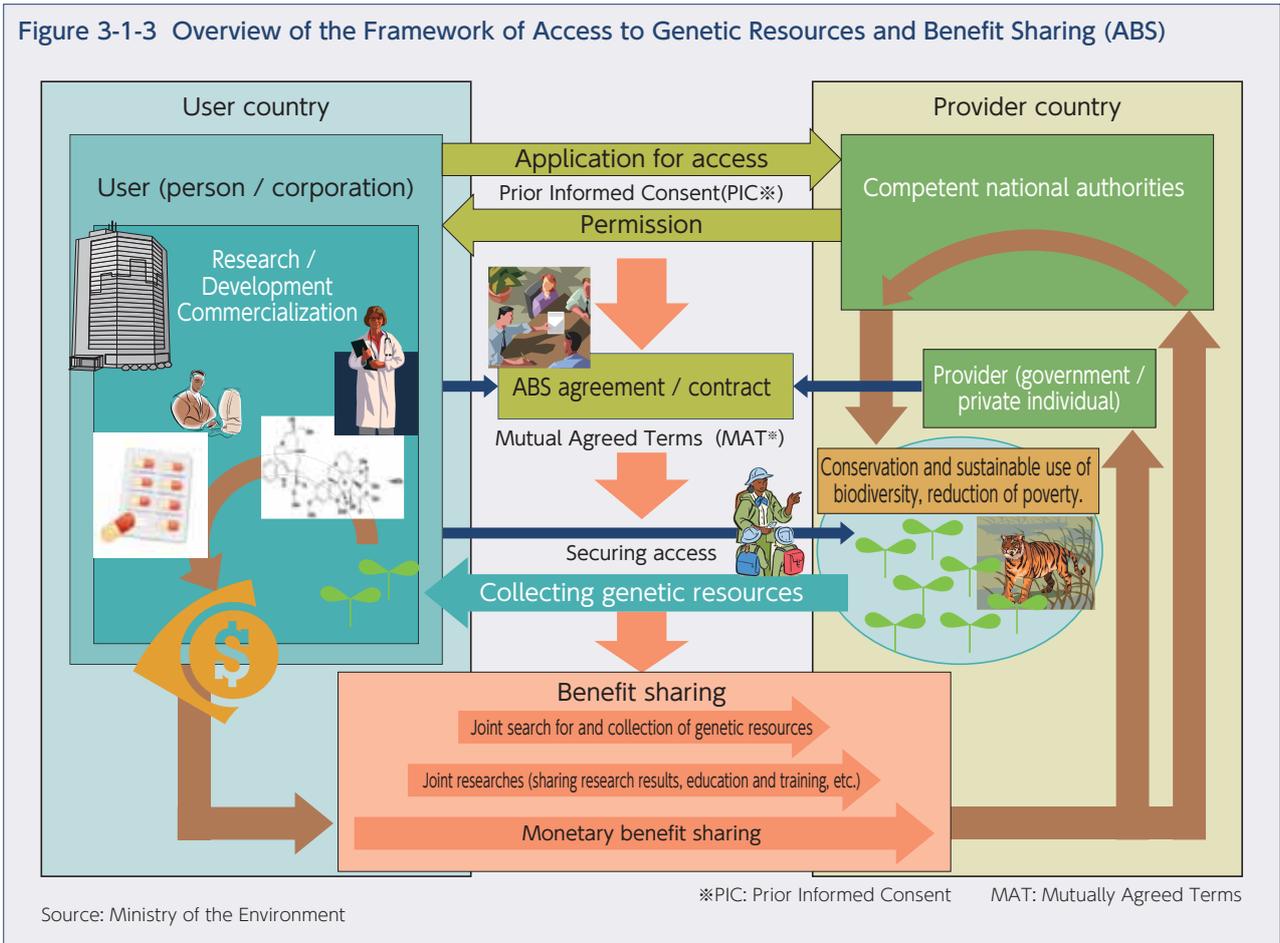


Figure 3-1-4 Overview of the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)

- Time period: October 18 (Mon.) – 29 (Fri.), 2010
- High level Ministerial Segment: October 27 – 29
- Fifth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP5): October 11 – 15
- Venue: Nagoya Congress Center (Nagoya City, Aichi Prefecture)
- Participants: 180 countries that are parties to the convention, international organizations, observers such as NGOs, others
- Number of participants: Over 13,000 (including members of the press and, staff)
- Number of official side events: Approx. 350
- President: Japan's Minister of the Environment Matsumoto
- COP-MOP5 President: Japan's Minister of Agriculture, Forestry and Fisheries Kano
- Slogan: "Life in Harmony, into the Future"
- Parallel meetings and events
 - Parliamentarians and Biodiversity Forum
 - City Biodiversity Summit 2010
 - Interactive Fair for Biodiversity (more than 118,000 participants)



COP10 logo mark

Source: Ministry of the Environment

Photo: COP10 venue (Nagoya Congress Center)



countries) utilizes genetic resources out of microorganisms from a provider country (mainly developing countries) and develops a new medicine, the benefits obtained from selling such medicine will be appropriately allocated to the provider country and be contributed to conserving biodiversity in that provider country (Figure 3-1-3: Overview of the Mechanism for ABS). At COP8 in 2006 it was decided that consideration of an international regime on ABS would be completed before COP10.

Thirdly, the COP10 was held during "International

Year of Biodiversity" designated by the United Nations. At the United Nations General Assembly in 2006, it was determined that 2010 should be the International Year of Biodiversity, and with the Secretariat of the Convention on Biological Diversity as the leading organization, United Nations member countries were requested to set up national committees and organize various events related to international year, in order to increase awareness for achieving the three objectives of the Convention on Biological Diversity and the post-2010 targets. In response, various events related to biodiversity were held around the world, including the high-level meeting of the United Nations General Assembly that contributed to the International Year of Biodiversity held on 22 September, 2010 in New York (US), where Minister of the Environment of Japan Ryu Matsumoto attended

representing the COP10 Presidency. As a result, interest in the issues of biodiversity was increased as never before.

In such circumstances, there were growing expectations that COP10 would be an important conference that would influence the future of biodiversity by aiming for an

agreement on the “Post-2010 Targets,” which were new global targets for 2011 and beyond, and a protocol on ABS, which had been a controversial issue since the Convention on Biological Diversity went into effect.

2. Overview of COP10 and COP-MOP5

(1) Overview of the Meeting

COP10 was held from 18 to 29 October, 2010 at the Nagoya Congress Center in Nagoya City, Aichi Prefecture, under the slogan “Life in Harmony, into the Future” (Figure 3-1-4: Overview of the 10th Conference of the Parties to the Convention on Biological Diversity (COP10)). A total of 13,000 people from around the world participated, including 180 country parties, NGOs and other observers, media, and local staff. Prior to COP10, the fifth meeting of the Conference of the Parties serving as the Meeting of the Parties to the Cartagena Protocol on Biosafety was held from 11 to 15 October. There were as many as 350 official side-events during the period of COP10 and COP-MOP5, and both the number of participants and the number of events were the highest of any CBD COP in history. In addition, Interactive Fair for Biodiversity hosted by the COP 10 Promotion Committee, which consists of Nagoya City, Aichi Prefecture, corporative organizations, etc., was held around the venue, with nearly 200 exhibiting booths set up by NGOs, corporations, and municipalities and approximately 118,000 people participating during the conference (Photograph: A Scene at the Venue).

Minister of the Environment Matsumoto. Three working groups were established under the plenary session, and discussions were held by “Working Group I” on the individual topics such as “protected areas” and “forest biodiversity,” and by Working Group II on the cross-cutting topics such as “post-2010 targets” and “resource mobilization strategies.” The Budget Committee reviewed the budgetary issues necessary for the Secretariat of the Convention to implement COP decisions. An informal consultative group was specially established for “ABS.” In addition, discussions were coordinated through setting up small contact groups and small groups as necessary for each working group, and final decisions were made at the plenary session on the final day (Figure 3-1-5: Operating Structure of COP10).

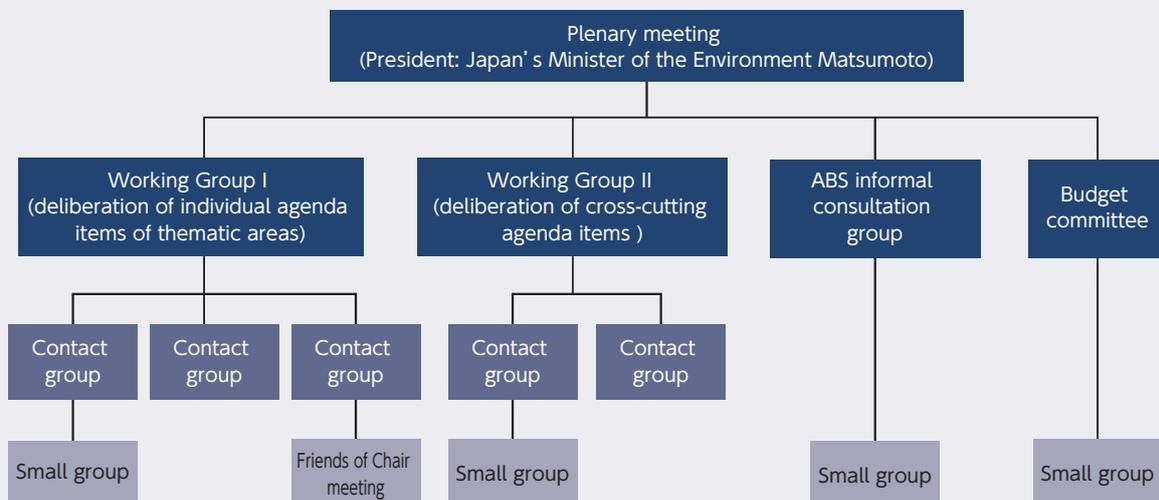
(2) Conference Operations

Including organizational matters, a total of forty agenda items were discussed at COP10. Japan served as the Presidency, and the conference’s final decision-making was done at the “plenary session” chaired by

Photo: A scene at the COP10 venue



Figure 3-1-5 Operating Structure of the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)



Source: Ministry of the Environment



Table 3-1-3 List of Decisions Adopted at the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)

(Main decisions are shown in hold.)

1	Access to genetic resources and the fair and equitable sharing of benefit arising from their utilization (Nagoya Protocol on Access and Benefit-Sharing)
2	The Strategic plan for Biodiversity 2011-2020 and the Aichi Biodiversity targets
3	Strategy for resource mobilization in support of the achievement of the Convention's three objectives
4	Third edition of the Global Biodiversity Outlook: implications for the future implementation of the convention
5	Implementation of the Convention and the Strategic plan 2011-2020.
6	Integration of biodiversity into poverty eradication and development.
7	Examination of the out come-oriented goals and targets and associated indicators and consideration of their possible adjustment for the period beyond 2010
8	United Nations Decade on Biodiversity 2011 - 2020
9	The multi-year programme of work for the Conference of the Parties for the period 2011-2020 and periodicity of meetings
10	National reporting: review of experience and proposals for the fifth national report
11	Consideration of the outcome of the Intergovernmental Science and Policy Platform on Biodiversity and Ecosystem Services (IPBES)
12	Consolidated update of the Global Strategy for Plant Conservation 2011-2020
13	New and emerging issues
14	Retirement of decisions
15	Scientific and technical cooperation and the clearinghouse mechanism
16	Technological transfers and cooperation
17	Consolidated updated of the Global Strategy for Plant Conservation 2011-2020
18	Communication, education, and public awareness (CEPA) and International Year of Biodiversity
19	Gender mainstreaming
20	Cooperation with other conventions and international organizations and initiatives
21	Businesses engagement
22	Plan of Action on Sub-national Governments, Cities and other Local Authorities for Biodiversity
23	Multi-year plan of action for south-south cooperation in biodiversity for Development
24	Review of guidance to the financial mechanism
25	Additional guidance to the financial mechanism
26	The financial mechanism: Assessment of the amount of funds needed for the implementation the convention for the sixth replenishment period of the Global Environment Facility (GEF) trust fund
27	Preparation for the fourth review of the effectiveness of the funding mechanism
28	Inland waters Biodiversity
29	Marine and coastal Biodiversity
30	Mountain biological diversity
31	Protected areas
32	Sustainable use of biodiversity (including Satoyama Initiative)
33	Biodiversity and climate change
34	Agricultural biodiversity
35	Biodiversity of dry and sub-humid lands
36	Forest biodiversity
37	Bio-fuels and biodiversity
38	Invasive alien species
39	Global taxonomy initiative
40	Mechanism to promote the effective participation of indigenous and local communities in the work of the convention <ul style="list-style-type: none"> A. Capacity-building efforts B. Development of communication, mechanisms, and tools to facilitate the effective participation of indigenous and local communities in the work of the convention C. Participation of indigenous and local communities in the work of the convention, including through the Voluntary Fund for facilitating the participation of indigenous and local communities in the Convention Process. D. Other initiatives
41	Elements of sui generis systems for protection of the traditional knowledge
42	Code of Ethical conduct to Ensure Respect for the Cultural and Intellectual Heritage of indigenous and local communities
43	Multi-year programme of work on the implementation of Article 8 (j) and related provisions of the Convention on Biological Diversity
44	Incentive measures
45	Administration of the convention and budget for the programme of work for biennium 2011-2012
46	Date and venue of the eleventh meeting of the Parties
47	Tribute to the Government and people of Japan

Source: Ministry of the Environment

(3) Overview of the Results of COP10

The most significant results of COP10 were the adoption of the “Aichi Biodiversity Targets,” which are new global targets on biodiversity (post-2010 targets), and the “Nagoya Protocol,” on ABS. In particular, the Nagoya Protocol was the adoption of a legally binding international regime for achieving the third objective of the Convention, which has been debated ever since the Convention entered into force, and therefore, it is not too much to say that it opened the beginning of a new era for the Convention.

In addition to these major outcomes, a total of 47 decisions that are important for proceeding with conservation and sustainable use of biodiversity on a global scale, such as “protected areas,” and “sustainable use,” were adopted. We will now take a detailed look at the main decisions adopted at COP10 (Table 3-1-3: List of Decisions Adopted at COP10).

(4) Main Outcomes of COP10

A. Aichi Biodiversity Targets

At COP10, The Strategic Plan for the next ten years that included new global targets on biodiversity for 2011 and beyond (post-2010 Targets) was adopted, based on the results of assessment of the 2010 Target. Japan proposed that these global targets should be called the “Aichi Biodiversity Targets,” and the proposal was agreed upon.

The Aichi Biodiversity Targets comprises a long-term target up to 2050 (Visions), a short-term target up to 2020 (Missions), and 5 strategic targets and 20 individual targets in order to achieve the short-term target (Figure 3-1-6: Strategic Plan for 2011 - 2020).

The long-term target is a “world living in harmony with nature.” In other words, the aim is to, by 2050, realize a world where biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people. As it is Japan that proposed this concept of “living in harmony with nature” to the Secretariat of the Convention on Biological Diversity in January 2010, it can be said that the ways of thinking and knowledge about coexisting with nature that had been cultivated since long ago in Japan have gained the understanding and empathy from countries around the world.

As for the short-term target, positions were divided between the EU, which sought the ambitious target of “halting the loss of biodiversity by 2020,” and developing countries, which valued feasibility, taking into consideration future economic development. In the end, in light of opinions expressed at an unofficial Cabinet-level meeting, it was decided to “take effective and urgent actions to halt the loss of biodiversity.”

Concerning individual targets, for example, the positions were divided until the last day over the Target 11 on protected areas as for the figure of the quantitative target, but in the end the agreement were reached as “at least 17% of terrestrial and inland water areas, and 10% of coastal and marine areas will be conserved

as protected areas.” According to the Convention on Biological Diversity Secretariat, approximately 13% of the world’s terrestrial and inland water areas and approximately 5% of its coastal and marine areas are designated as protected areas, however in order to achieve the target it is necessary to strengthen efforts, particularly in marine areas.

In addition, Target 2, on integration of biodiversity into national and local development and poverty reduction strategies underlines that the value of biodiversity will be included in national accounting and reporting systems as appropriate. The agreement was reached at the end, despite the fact that several Parties were of the opinion that “it would be difficult to include the value of biodiversity in national accounts.” This was because the global attention was focused on the evaluation of the economic value of biodiversity, and furthermore, the importance of incorporating the results into the policy measures on biodiversity, based on the final report of “The Overview of the Economics of Ecosystems and Biodiversity (TEEB)” reported at COP10. The results of TEEB are explained in details in the column.

The Aichi Biodiversity Targets are adopted as a flexible framework to advance the implementation of the Convention as a whole, and from now on it will be necessary for each Party to set its own national targets according to the status of biodiversity and priority issues, etc., and to incorporate them in its national strategies and action plans. In addition, the Secretariat of the Convention on Biological Diversity has provided examples of specific measures of implementing individual target, and milestones and indicators for evaluating the implementation of the targets, which will be continued to be reviewed at related meetings.

It has also been decided that each Party will regularly report the progress of implementation of the new strategic plan, by submitting national reports under the Convention on Biological Diversity and other means. Based on those results, the global assessment on the progress of achievement of the Aichi Biodiversity Targets will be conducted.

In order to carry out the new Strategic Plan and achieve the Aichi Biodiversity Targets, it is necessary for each of the parties to the Convention to promote various measures through development, revision, and implementation of national biodiversity strategies and action plans, with participation from all stakeholders. Meanwhile, at COP10 the needs for financial support, technology transfers, and capacity building required for implementing the new strategic plan were pointed out by many developing countries. For that reason, by revising and steadily implementing its own national biodiversity strategy, Japan as the COP10 Presidency will contribute to promote measures and policies related to biodiversity both nationally and internationally. Furthermore, through contributions to the Japan Biodiversity Fund, administered by the Secretariat of the Convention on Biological Diversity and other means, Japan will support capacity building activities in developing countries, aiming to achieve the Aichi Biodiversity Targets and actively contributing to realizing conservation of biodiversity and its sustainable use at global scale.



Figure 3-1-6 Strategic Plan for Biodiversity 2011 – 2020 (Aichi Biodiversity Targets)

■ Long-term targets (Vision) 2050

- A world of “Living in Harmony with Nature”
- A world that, “by 2050 biodiversity is valued, conserved, restored, and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”

■ Short-term targets (Mission) 2020

To take effective and urgent action to halt the loss of biodiversity

- ◇ This will ensure by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet’s variety of life, and contributing to human well-being, and poverty eradication.

■ Individual Targets

- Target1: People become aware of the values of biodiversity and the steps they can take
- Target2: Biodiversity values will be integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
- Target3: Incentives, including subsidies, that are harmful to biodiversity will be eliminated, phased out or reformed, and positive incentives will be developed and applied.
- Target4: Stakeholders at all levels will take steps to achieve or will implement plans for sustainable production and consumption.
- Target5: The rate of loss of all natural habitats, including forests, will be at least halved and where feasible brought close to zero, and degradation and fragmentation will be significantly reduced.
- Target6: All fish and invertebrate stocks and aquatic plants will be managed and harvested sustainably.
- Target7: Areas under agriculture, aquaculture and forestry will be managed sustainably.
- Target8: Pollution will be brought to levels that are not detrimental to ecosystem function and biodiversity.
- Target9: Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
- Target10: The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification will be minimized.

- Target11: 17 percent of terrestrial and inland water areas, and 10 percent of coastal and marine areas will be conserved.
- Target12: The extinction and reduction of threatened species will be prevented.
- Target13: The genetic diversity of cultivated plants and farmed and domesticated animals will be maintained for minimizing genetic erosion and safeguarding their genetic diversity.
- Target14: Benefits from ecosystem services and biodiversity will be provided, restored, and safeguarded.
- Target15: Contributions will be made to mitigation and adaptation of climate change through restoration of at least 15% of degraded ecosystems.
- Target16: The Nagoya Protocol on ABS will be put into effect and used.
- Target17: Each Party will have develop, and commence implementing an effective, participatory and updated national biodiversity strategy and action plan.
- Target18: The traditional knowledge will be respected and made mainstream.
- Target 19: Knowledge, and the science base and technologies relating to biodiversity will be improved.
- Target20: The mobilization of financial resources for effectively implementing the strategic plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessment to be developed and reported by Parties.

Source: Ministry of the Environment

B. The Nagoya Protocol on Access and Benefit-sharing

Although negotiations about an international framework (protocol) related to ABS had already been held in advance at preparatory meetings and so forth, a gap of opinions remained between the developing countries and developed countries, and adoption of the protocol was at risk until the final day.

An example of controversy is the time frames covered by the protocol. While developed countries argued that genetic resources obtained after the protocol enters into

force should be subject to the protocol, developing countries were of the opinion that the protocol should be applied all the way back to when the Convention on Biological Diversity entered into force, and there were even some opinions that the protocol should cover periods even before the convention entered into force. Thus, the negotiations seemed not to come to an agreement with each other. In addition, various opinions of many of the parties to the convention were tangled over multiple issues, such as whether the “derivatives” of chemical substances, etc. that arise from the metabolism of genetic resources should be covered by the protocol, how define

user countries' discretion for measures in order to comply with the domestic measures of provider countries, and whether special consideration should be given to the handling of pathogens. It was extremely difficult to resolve these issues (Table 3-1-4: Main Issues Related to ABS, and Their Results).

The Ministers of each country showed strong expectations for agreement on the protocol, but working-level negotiations that took place into the late hours of the night over consecutive days did not make progress. On October 27, two days before the end of the conference, an informal ministerial consultation was held based on a call by the President of the COP10, Minister of the Environment Matsumoto, and political guidance was given to negotiations at the working level. Even so, agreement was still not reached at the working-level. On the morning of the final day (the 29th), a draft protocol by the President Matsumoto was presented to the Ministers, etc. representing each region, and a ministerial consultation was held again based on that draft, and finally the "Nagoya Protocol" was adopted through compromise by each of the parties to the convention (Figure 3-1-7: Overview of the Nagoya Protocol).

The Nagoya Protocol will be sequentially signed and

ratified by each of the parties to the convention, and enter into force 90 days after the 50th Party has ratified. The following are expected by the entry into force of the Nagoya Protocol: ① The transparency, clarity, and legal certainty of the domestic measures ensured by provider countries will make it possible for corporations, etc. in user countries to smoothly obtain genetic resources, and utilization of genetic resources will be promoted, ② fair and equitable sharing of benefits arising from utilization of genetic resources will be promoted toward provider countries, and conservation of biodiversity and its sustainable use will be strengthened, ③ through collection of information related to prior informed consent and mutually agreed terms, monitoring of utilization of genetic resources and compliance with domestic measures on ABS of provider countries will be promoted, and thus appropriate utilization of genetic resources will be ensured, ④ as for traditional knowledge associated with genetic resources, benefits arising from the utilization will be fairly shared to indigenous and local communities that hold the knowledge, which will lead to their knowledge being respected, preserved, and maintained.



Table 3-1-4 Main Issues Related to ABS, and Their Results (Nagoya Protocol)

Issue	Countries using resources (developed countries)	Provider countries (developing countries)	Result (Nagoya Protocol)
Access	It is necessary to ensure legal certainty and transparency.	Legal certainty and transparency should not be obligated in the protocol.	Each Party to the Convention is obligated to provide for legal clarity and transparency of their domestic access
Benefit sharing	Allocation of benefits to the providing country, based on mutually agreed terms conditions	Benefit should be shared to providing countries too, irrespective of mutually agreed term.	Benefit sharing shall be based on mutually agreed.
Compliance / Designation of checkpoint(s)	Specific organizations to be designated should not be enumerated for designation.	Specific organizations to be designated should be enumerated.	Each party is obligated to designate one or more checkpoints. Specific organizations to be designated were not defined.
Scope (retroactive application)	After the protocol enter into force	Before the protocol enters into force(There are also some opinions that it should go back to before the convention entered into force.)	The protocol did not provide for retroactive application, which means that retroactive application was not allowed.
Scope (derivatives)	Genetic resources.	Derivatives (chemical substances) as well as genetic resources	"Utilization of genetic resources" can include utilization of derivatives, and whether benefit sharing is also applied to derivatives is based on mutually agreed terms.
Scope (pathogens)	It should be deliberated by other expert organizations such as the WHO (The protocol should not apply to pathogens).	The protocol should apply also to pathogens.	The protocol provides for special consideration to pay due regard to imminent emergencies that threaten human, plant or animal health, including access to pathogens.

Source: Ministry of the Environment

Figure 3-1-7 Overview of the Nagoya Protocol

<ul style="list-style-type: none"> ◆Objectives <ul style="list-style-type: none"> • Fair and equitable sharing of benefits arising from utilization of genetic resources • Contributions to conservation of biodiversity and the sustainable use ◆Utilization of genetic resources <ul style="list-style-type: none"> • Research and development on the genetic and biochemical composition of genetic resources, including application of bio-technology ◆Scope <ul style="list-style-type: none"> • Genetic resources within the scope of the Convention on Biological Diversity • Traditional knowledge within the scope of the Convention on Biological Diversity • Benefits arising from their utilization ◆Fair and equitable sharing of benefits <ul style="list-style-type: none"> • Benefits shall be shared in a fair and equitable way based on mutually agreed terms (contracts) ◆Access <ul style="list-style-type: none"> • Each Party to the Convention shall provide for legal certainty, clarity and transparency of their domestic access 	<ul style="list-style-type: none"> ◆Special consideration <ul style="list-style-type: none"> • Research for non-commercial purposes • Due regard to imminent emergencies ◆Multilateral benefit-sharing mechanism <ul style="list-style-type: none"> • Parties shall consider the need for a multi-lateral mechanism to address the fair and equitable sharing of benefits in cases that genetic resources occur in transboundary situations or that it is not possible to obtain prior informed consent ◆Compliance with domestic laws and regulations related to ABS <ul style="list-style-type: none"> • Each Party shall take appropriate measures to provide that genetic resources utilized within its jurisdiction have been accessed in accordance with domestic laws and regulations of the other Party. ◆Monitoring of the utilization of genetic resources <ul style="list-style-type: none"> • Each Party shall designate one or more checkpoints to monitor utilization of genetic resources. • Checkpoints should collect information of relevant information at any stage of research, development, or commercialization
<p>Point</p> <ul style="list-style-type: none"> ① No provision for retroactive application ② Designation of checkpoints to support compliance (Organizations to be designated are left to the discretion of each Party) ③ Application of benefit-sharing to derivatives is not necessarily obligated and based on mutually agreed terms 	

Source: Ministry of the Environment

Agreement on the Nagoya Protocol was reached through compromise by each of the Parties to the convention. We have to make tireless efforts so that the protocol will enter into force as soon as possible, all of the parties will utilize it actively, and it will truly contribute to conservation of biodiversity and the sustainable use. Japan signed the Nagoya Protocol on May 11, 2011. Aiming for early entry into force of the protocol, Japan as the COP10 presidency will develop necessary domestic measures and also provide international support such as capacity building for implementation of the protocol in developing countries so that the protocol can be ratified in many countries as soon as possible.

Column

The Difficult Negotiations at COP10

The plenary session on the final day of COP10 that started after 3pm on October 29 went on until around 3am of the next day (the 30th), and concluded after 47 decisions had been adopted. The adoption of the “Aichi Biodiversity Targets” and the “Nagoya Protocol” were significant results which can be called historic, and the process to the agreement was certainly not an easy one.

In order to get developed countries to compromise on “ABS,” which is what developing countries were most interested in, it was argued from the beginning that a new strategic plan including post-2010 targets and a resource mobilization strategy should be agreed upon as a package. Despite this, even at the final plenary session, when agreement on ABS could be foreseen, there were signs that several developing countries would not agree on the new strategic plan and the resource mobilization strategy, and the tense negotiation continued with the EU, which was trying to block such movement. In the end, these three important issues were adopted unanimously with supports of statements such as that the content should be discussed instead of the process of discussions by South Korea, The moment



The moment of the agreement reached

of agreement was a moving scene with almost all of the participants in the meeting room stood up and applauded, and thereby welcomed this historic agreement (Photograph: The moment agreement was reached). The agreement was an outcome of the accumulated negotiations and compromises boldly made by each country while sharing the pain, which was based on the shared feelings of the participants towards “benefits for the Earth” and “benefits for humans.”

(5) Other Matters Decided

A. Resource Mobilization Strategy

Concerning setting indicators and targets in order to monitor the progress of the resource mobilization strategy, negotiations proceeded with difficulty between developing countries, which strongly demanded clarification of specific monetary targets (targets for the financial flow around the world as a whole in both private and public sectors), and developed countries, which said it was not possible to set targets without firm indicators. In the end, developing countries withdrew their demand for specific targets and, taking into account discussions about indicators, the following decisions were adopted: “adopt targets at COP11, provided that robust baselines have been identified,” and “increase the annual international financial flows by 2020 to partner countries to contribute to achieving the Convention’s three objectives”.

B. Climate Change and Biodiversity

As for biodiversity conservation measures and environmental assessment of biodiversity related to activities on Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Developing Countries, it was decided that the Secretariat of Convention on Biological Diversity would provide advice without pre-empting any future decisions taken under the United Nations Framework Convention on Climate Change, and that consideration would be given to joint activities with other Rio conventions (The United Nations Framework Convention on Climate Change and The United Nations Convention to Combat Desertification) towards the United Nations Conference on Sustainable Development 2012 (RIO+20).

C. Cooperation with Various Entities

As for business and biodiversity, encouragement of establishing a global platform to facilitate invitations by Parties to the Convention for promotion of collaborative activities of businesses and biodiversity, encouragement of specific participation by the private sector, international collaboration for Business and Biodiversity Initiatives on national and regional levels. In addition, an action plan related to biodiversity of local municipalities targeting the years from 2011 to 2020 was approved, and parties to the convention and other government organizations were encouraged to implement the plan.

D. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

It is expected that the “IPBES,” which is also referred to as the biodiversity version of the IPCC, will make significant contributions to promote the collaboration between science and policy regarding biodiversity, and largely contribute to the conservation of biodiversity on a global scale. At a meeting on IPBES, which was convened by the United Nations Environment Program (UNEP) in June 2010 in Pusan (South

Korea), a fundamental agreement on the necessity of its establishment was made. At COP10 to the Convention on Biological Diversity, it was decided to invite the General Assembly of the United Nations to consider the early establishment of the platform. Based on that decision, a resolution was adopted to request UNEP to hold a plenary meeting in order to determine modalities and institutional arrangements for the IPBES at the earliest opportunity, at its 65th session of the General Assembly of the United Nations held in December 2010.

E. The United Nations Decade on Biodiversity

As for the “United Nations Decade on Biodiversity” that was proposed by Japan, at COP10 it was decided to advise that this should be adopted at the United Nations General Assembly, and at the 65th United Nations General Assembly in December, 2010, it was adopted that the ten years from 2011 through 2020 would be the “United Nations Decade on Biodiversity,” during which all sectors of international society would collaborate to tackle problems of biodiversity.

F. The SATOYAMA Initiative

Protecting biodiversity entails not only conserving pristine environments but also conserving human-influenced natural environments that have been developed and maintained through human activities such as agriculture and forestry. A variety of species have adapted to and rely on these natural environments, hence they play an important role in protecting biodiversity. But these natural environments are increasingly threatened in many regions of the world, due to urbanization, industrialization, rapid changes of regional population structures, etc.

In Japan, it has been a critical task to manage and revitalize *Satochi-satoyama* under the decline of population and primary industries that form basis in the regions. In order to realize “Life in harmony, into to the future” as the slogan of COP10, Japan as the COP10 Presidency initiated the “*Satoyama Initiative*,” which aims to harmonize conservation of biodiversity in human-influenced natural environments with its sustainable use, share awareness of problems with other countries and related organizations, discuss on a global scale, and accelerate the international efforts.

At the International Experts Meeting and other preparatory meetings on the *Satoyama Initiative* prior to COP10, the conceptual structure of the *Satoyama Initiative* (Figure 3-1-8: Conceptual Structure of the *Satoyama Initiative*) was built, and supporting mechanisms for developing it internationally were discussed. The vision of the *Satoyama Initiative* is to “realize societies in harmony with nature,” comprising human communities where the maintenance and development of socio-economic activities (including agriculture, forestry, and fisheries) align with natural processes. From now on we will make efforts in line with the approach and the perspectives.

In addition, in order to contribute to promotion of specific efforts based on the concept of the *Satoyama*



Figure 3-1-8 Conceptual Structure of the Satoyama Initiative

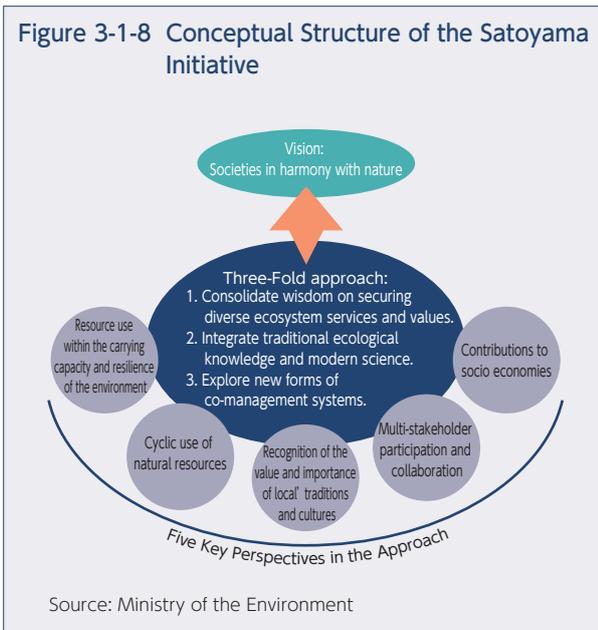


Photo: Launching ceremony of IPSI



Initiative, the “International Partnership for the Satoyama Initiative” (IPSI) was launched on October 19 during COP10 as a platform for sharing information and promoting collaborative activities among partner organizations. The launching ceremony of IPSI was held as a side-event during COP10 with 51 founding partner organizations, including the government ministries of 9 countries, 18 NGOs, and 9 international organizations (Photograph: Launching ceremony of IPSI). The IPSI is open to all of the organizations who will make efforts to promote the Satoyama Initiative. At the first IPSI Regular meeting held in March 2011, 23 organizations newly joined IPSI, and it is estimated that the number of the IPSI members will increase. It is expected that the expansion of the IPSI members and the development of their activities will contribute to the further promotion of the Satoyama Initiative.

G. Encouragement of Implementation of the Rice Paddy Resolution

It is recognized that, in agricultural biodiversity, conservation of biodiversity and sustainable use of rice paddy ecosystems are particularly important. The Ramsar Convention’s “Rice Paddy Resolution,” which internationally recognized the fact that rice paddies acting as human-created wetlands support a wide range of biodiversity as artificial wetland, is welcomed, and

it was decided that parties to the convention would be asked to implement it.

(6) Overview of the Outcome of COP-MOP5

Minister of Agriculture, Forestry and Fisheries Mr. Kano served as chairman of COP-MOP5, which was held prior to COP10. The main discussion at COP-MOP5 was about stipulation of measures that should be taken by parties to the convention in relation to “responsibility and redress” when damages to conservation of biodiversity and sustainable use are caused due to trans-boundary movements of living modified organisms.

Negotiations about “liability and redress” began in 2004 and, after six years of discussions, the Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, which stipulates measures that parties to the convention should take, was adopted at this conference. This stipulated that in case of damage to biodiversity, parties to the convention will identify the responsible party and order response measures to return biodiversity to its original state.

From now on it will be necessary for the parties to the convention, including many developing countries, to work to smoothly implement this supplementary protocol.

(7) Japan’s Contributions

At the High-level Segment of COP10 (Ministerial meeting), Prime Minister Kan announced the “Life in Harmony Initiative” (USD 2 billion) as support for developing countries in relation to biodiversity, with priority areas such as to pursue a balance between the livelihood of the locals and the conservation of natural environment, to manage protected areas adequately, to halt biodiversity loss caused by the excessive use of natural resources, and to explore the value and share benefits of micro-organism. Japan’s Minister of the Environment Matsumoto also announced the “Japan Biodiversity Fund” (JPY 1 billion) aimed at supporting development of a National Biodiversity and Action Plans as well as another contribution to the assistance (JPY 1 billion) for capacity building on ABS in developing countries under the said initiative. Moreover, the Vice Foreign Minister Banno announced specific assistance in relation to use of genetic resources and conservation of forests. As the Presidency, Japan also actively participated in and contributed to discussions on each of the topics and was highly praised by various countries for its positive stance in leading the conference through smooth and fair business operations and for the “President’s proposal” related to the Nagoya Protocol.

Many participants also expressed their appreciation for the heart-warming hospitality elaborated by the host areas Aichi Prefecture and Nagoya City, and for the active endeavors of Japan’s NGOs, such as Japan Civil Network for CBD. It is believed that the combination of each of these individual efforts was a major factor that led to the conference’s success.



The Economics of Ecosystems and Biodiversity (TEEB)

At COP10, the final report of “TEEB: The Economics of Ecosystems and Biodiversity,” which is referred to as the biodiversity version of the Stern Review, was released (Figure 1: Overview of TEEB). TEEB is an initiative of study supported mainly by the UNEP based on the “Potsdam Initiative” that was adopted at the 2007 G8 Environment Ministers Meeting, conducting analysis and assessment of the effects of deterioration of biodiversity and ecosystem services on international society and economy from an economic perspective. Here we will introduce TEEB’s main outcomes and recommendations.

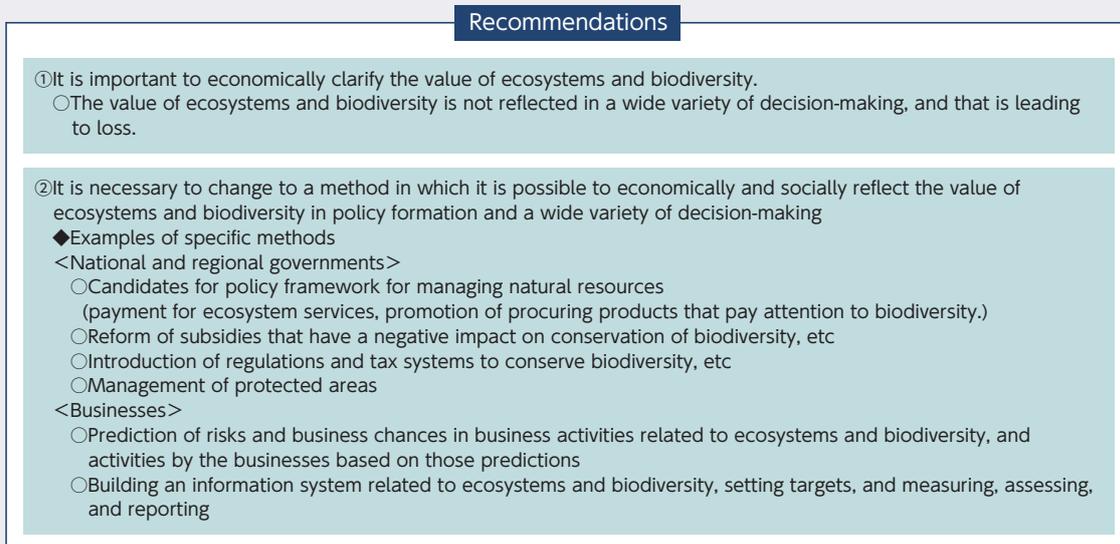
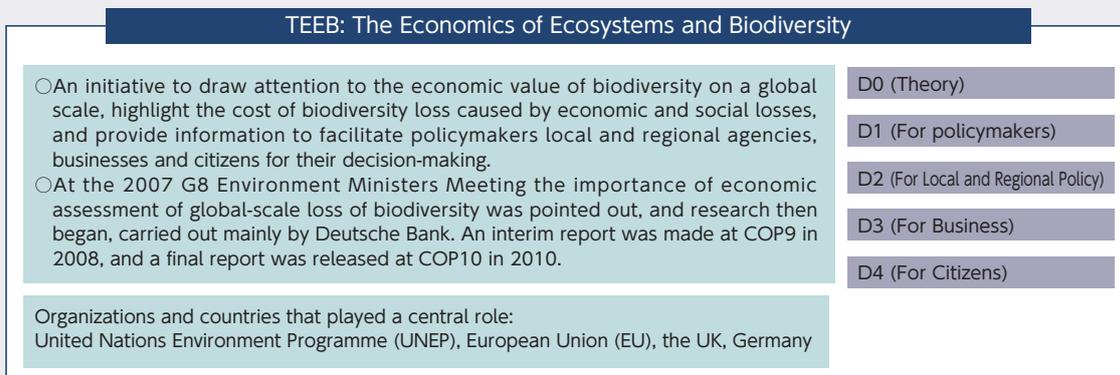
(1) Quantification of Biodiversity and Ecosystem Services

Until recently the value of biodiversity and ecosystem services has rarely been recognized, and there are an aspect that they have been rapidly lost due to exploitation and development. Therefore, with the objective of quantifying the effects of loss of biodiversity on our daily lives and the value that we

gain by the conservation, attempts to assess the economic value of ecosystem services are being made around the world (Table 1: Examples of Assessing the Monetary Value of Ecosystem Services).

TEEB not only brings about awareness of such value. It is said that it also works toward economic rationality and makes preservation of biodiversity and sustainable use possible, by reflecting the value in the decision-making and actions of government decision-makers, businesses, and consumers. For example, New York City authorities made decisions, to pay remuneration to landowners in the Catskill mountains to improve farm management techniques and prevent run-off of waste and nutrients into nearby watercourses in order to secure purified water. The cost of this choice was between USD 1 billion and 1.5 billion, while avoiding the projected cost of a new water filtration plant at USD 6 billion, plus USD 300 million to USD 500 million in estimated annual operation costs (Figure 2: Comparison of Costs Required for Securing Purified Water in New York City). However, it must be noted that such methods

Figure 1 Overview of the Economics of Ecosystems and Biodiversity (TEEB)



Source: Ministry of the Environment

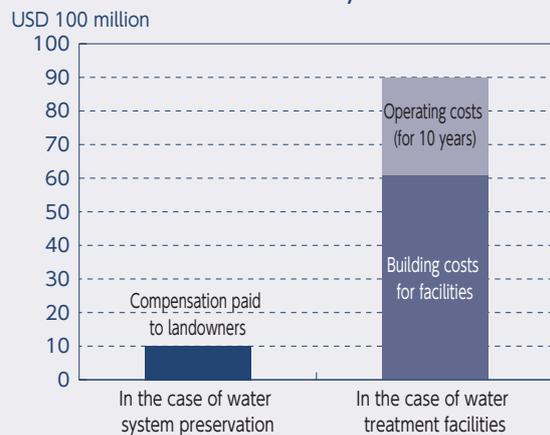


Table 1 Examples of Assessing the Monetary Value of Ecosystem Services

Item	Monetary value of ecosystem services (estimate)	Source
Effects of reducing emissions of greenhouse gases through forest conservation	Halving deforestation rates by 2030 would avoid damages from climate change estimated at more than USD 3.7 trillion.	TEEB Final Report
Loss caused by deterioration of forest ecosystems	Economic loss of approximately JPY 220- 500 trillion by 2050	TEEB Interim Report
Preservation of the world's protected areas	Although approximately USD 45 billion is necessary per year for management of protected areas, the value of the carbon dioxide, drinking water preservation, flood convention brought about by protected areas is USD 5 trillion per year.	TEEB D1 (for Policymakers)
Economic loss caused by reduction of the world's fishing resources	If over-exploitation continues, it will reduce the income from global marine fisheries by USD 50 billion annually, compared to a more sustainable fishing scenario..	TEEB Final Report
Agriculture production through insect pollination	Total economic value of insect pollination worldwide is estimated at 153 billion Euros annually.	TEEB Final Report
Value of coral reef systems	<ul style="list-style-type: none"> The net benefit from recreation provided by the 166,000 thousand hectares of Hawaii's coral reef is USD 306 million per year. The worldwide economic effects of fish cultivation, tsunami damage reduction, tourism resources, are USD 30 - 172 billion. 	TEEB Final Report
Protection against tsunami by mangrove forests	At a cost of USD 1.1 million to protect and plant mangrove forests in Vietnam, USD 7.3 million in expenses for maintaining levees would be saved.	TEEB D1 (for Policymakers)
Economic value brought about by preserving the world's wetlands	The economic effects brought about by the world's 63 million hectares of wetlands through cultivation of fish and shellfish, tourism resources, is USD 3.4 billion.	TEEB D2 (for local municipalities)
Tree planting that enhances urban life	In Canberra, Australia, the results of planting 400,000 trees to regulate microclimate and reduce of pollution and thereby improve urban air quality, was reduction of energy costs for air-conditioning as well as store and sequester carbon These benefits are equivalent to approximately USD 20 - 67 million over the period 2008-2012.	TEEB Final Report

Source: Created by the Ministry of the Environment, using information from "The Economics of Ecosystems and Biodiversity (TEEB)"

Figure 2 Comparison of Costs Required for Securing Purified Water in New York City



Source: "The Economics of Ecosystems and Biodiversity (TEEB)"

cannot necessarily be used in all cases. Some reasons for this are that there is insufficient scientific knowledge about the functions of biodiversity and ecosystems, and there is uncertainty in assessing value due to the limits of economic methods. Therefore, keeping in mind that there are limits to its assessment it is important to actively make efforts that lead to conservation of biodiversity and ecosystem services and to take measures that follow the principle of prevention by warding off unnecessary development in

advance.

(2) Biodiversity as Natural Capital

TEEB views biodiversity as natural capital in various scenes. Natural capital is an extension of the economic concept of capital to nature. In other words, biodiversity is handled as stock (an asset) which continues to provide ecosystem services in the future.

A typical example is a "protected area." Specifically, protected areas of forests would provide with supply services such as timber, that has utility value, and supply service of fruits, adjustment services such as alleviation and adaptation for climate change, and cultural services such as eco-tourism, forest bathing trip and mental relaxation. By establishing protected areas and appropriately managing and using them, it becomes possible to persistently use ecosystem services, even though management and other costs are involved. Therefore, investing in conservation of ecosystems in order to view biodiversity as natural capital and work toward the maintenance, reactivation, and strengthening of ecosystem services can be said to be meaningful from the perspective of economic efficiency and long-term benefits.

(3) Business and Biodiversity

Business activities are closely related to biodiversity in a variety of situations, such as procurement and

transport of resources and land use. On the premise that all businesses rely on and affect biodiversity and ecosystem services, TEEB identifies seven key action points that business should follow for conservation of biodiversity and sustainable use (Table 2: Key Action Points for Business in Relation to Preservation of Biodiversity and Sustainable Use).

It also indicates risks and opportunities in business activities. For example, as risks for business activities, it points out that shortages of raw materials and increased costs for procuring materials are conceivable due to declines in living resources. It says that such risks can be effectively managed by setting up appropriate systems. Meanwhile, an example of an opportunity is securing stable and sustainable resource procurement. In addition, it views new markets of certified products that give consideration to conservation of biodiversity and sustainable use and ecosystem services as new business opportunities (Table 3: New Markets for Biodiversity and Ecosystem Services).

(4) Cooperation between Conservation of Biodiversity and Measures against Global Warming

Conservation of biodiversity and measures against global warming are related to each other on various points. It is feared that global warming is having serious effects on biodiversity, such as disrupting ecosystems and causing species to become extinct. For example, it is pointed out that an increase of carbon dioxide, which is one of the main greenhouse gases, in the ocean would lead to loss of coral reefs, which leads to loss of the ecosystem services obtained from coral reefs. Meanwhile, conservation of biodiversity is thought to be a highly cost-effective way to slowdown global warming through absorption of carbon dioxide by

forests and adapting to global warming by preserving freshwater and preventing natural disasters. For example, according to TEEB, by reducing the speed of deforestation by half by the year 2030, damages estimated to be over USD 3.7 trillion caused by climate change would be avoided. Further, according to TEEB the planting of mangroves along the coast of Vietnam required USD 1.1 million, but it had the effect of saving the annual USD 7.3 million to maintain levees. From such perspectives, there are expectations for efforts that take into consideration both preservation of biodiversity and counter measures global warming.

Table 2 Key Action Points for Businesses in Relation to Conservation of Biodiversity and Sustainable Use

- 1) Identify the impacts and dependencies of your business on biodiversity and ecosystem services (BES)
- 2) Assess the business risks and opportunities associated with these impacts and dependencies
- 3) Develop BES information systems, set SMART targets, measure and value performance, and report your results
- 4) Take action to avoid, minimize and mitigate BES risks, including in-kind compensation ('offsets') where appropriate
- 5) Grasp emerging BES business opportunities, such as cost-efficiencies, new products and new markets
- 6) Integrate business strategy and actions on BES with wider corporate social responsibility initiatives
- 7) Engage with business peers and stakeholders in government, NGOs and civil society to improve BES guidance and policy

Source: "The Economics of Ecosystems and Biodiversity (TEEB)"

Table 3 New Markets for Biodiversity and Ecosystem Services

Market opportunities	Market size (USD per annum)		
	2008	2020 (Estimate)	2050 (Estimate)
Certified agricultural products	40 billion*	210 billion	900 billion
Certified forest products	5 billion (FSC certification)	15 billion	50 billion
Carbon offsets	21 million (2006)	10 billion –	10 billion –
Payments for water-related ecosystem services (Government)	5.2 billion	6 billion	20 billion
Payments for water-related ecosystem services (Voluntary by businesses)	5 million (several spots in Costa Rica and Ecuador)	2 billion	10 billion
Payment for other ecosystem services (Government)	3 billion	7 billion	15 billion
Biodiversity offsets in regulated markets	3.4 billion	10 billion	20 billion
Voluntary biodiversity offsets	17 million	100 million	400 million
Bio-prospecting agreements	30 million	100 million	500 million
Conservation of private land	8 billion (US)	20 billion	Difficult to predict

*2.5% of global food and beverage market

Source: "The Economics of Ecosystems and Biodiversity (TEEB)"



Section 2 Loss of Biodiversity Accelerating

1. The State of Loss of Biodiversity in the World

The Millennium Ecosystem Assessment, which was conducted by the United Nations from 2001 through 2005 and in which 1,360 experts from 95 countries participated, pointed out that over the past fifty years humans have changed ecosystems at a speed and on a scale that the world has never seen before, and as a result have caused qualitative and overall irreversible damage in terms of diversity of life. In addition, the Global Biodiversity Outlook 3 (GBO3) that was published by the Secretariat of the Convention on Biological Diversity in May 2010 predicted that extinction of species is proceeding at a speed much faster than in any other time in history, and that habitats will be lost and there will be changes in distribution and abundance of species.

For example, the extinction of species in the 21st century is predicted to be proceeding at a rate that far surpasses the extinction rate estimated based on fossil records and the Red List, due to disappearance of habitats resulting from climate change and changes in land use (Figure 3-2-1: Speed of Extinction Rates and 21st Century Projections Scenario). There is also a Red List Index, which is an indicator that shows the state of risks of extinction for each taxonomical group. A value of 1 indicates that all of the species in that taxonomical group are not heading toward a crisis of extinction in the near future, and a value of 0 indicates that all of the species in that taxonomical group are already extinct. Shifts in this index show that there is a danger of extinction for birds compared with the ideal situation, although the danger of extinction for birds is lower than other taxonomical groups, and that the danger of extinction for amphibians is much higher than other taxonomical groups. It can also be seen that since around the middle of the 1990s the possibility of extinction of coral has increased rapidly (Figure 3-2-2: Shifts in the Red List Index).

As an example of the state of specific ecosystem changes, here we will take a look at forests, which are representative natural environments on land. According to the Millennium Ecosystem Assessment, over the last 30 years half of the world's forest land area has been lost, and forests have decreased to the point that they now occupy approximately 31% of the Earth's surface. Trends in recent years also show that forests are continuing to decrease. In the 1990s approximately 160,000km² of forests was converted to other uses or lost each year. Although the speed of that loss has slowed in comparison with the 1990s, during the period from 2000 to 2010 nearly 130,000km² of forests, which is comparable to the combined areas of Hokkaido, Shikoku, and Kyushu, has been converted to other uses or lost each year. In terms of regions, decline is noticeable in South America, Africa, South Asia, and Southeast Asia (Figure 3-2-3: By-Country Net Change in Global Forest Area (2000 - 2010)).

For example, the savannah region in central Brazil

Figure 3-2-1 Past Extinction Rates of Species and Scenario Projection for the 21st Century

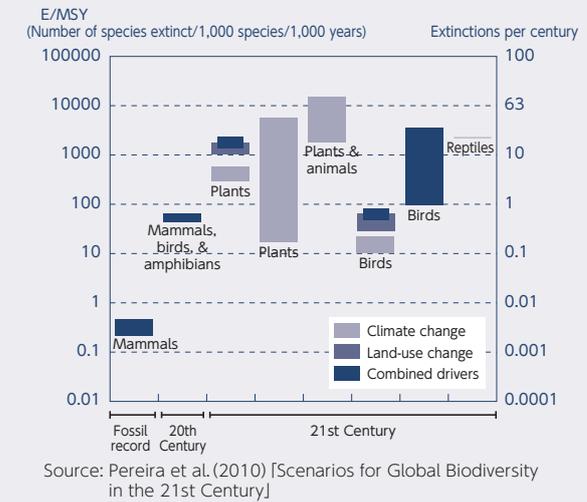
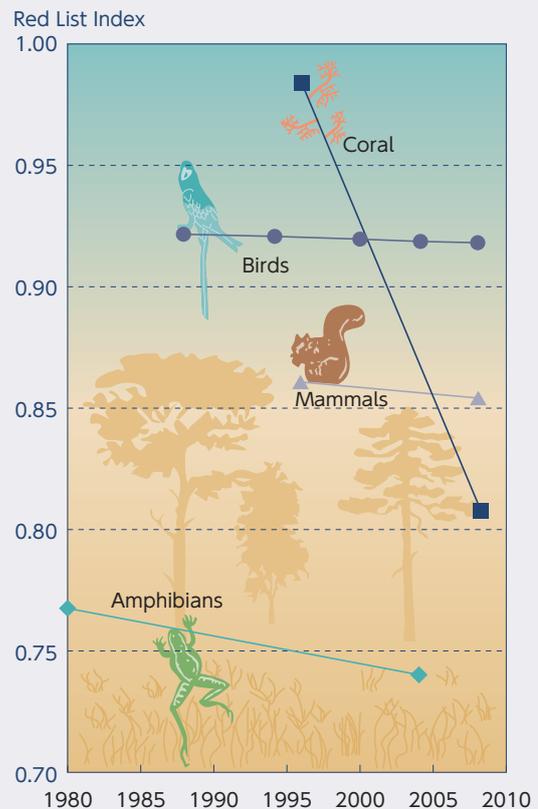
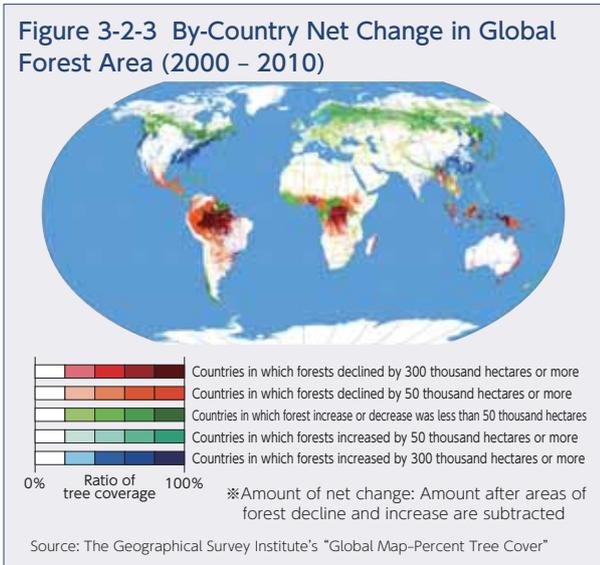


Figure 3-2-2 Red List Index



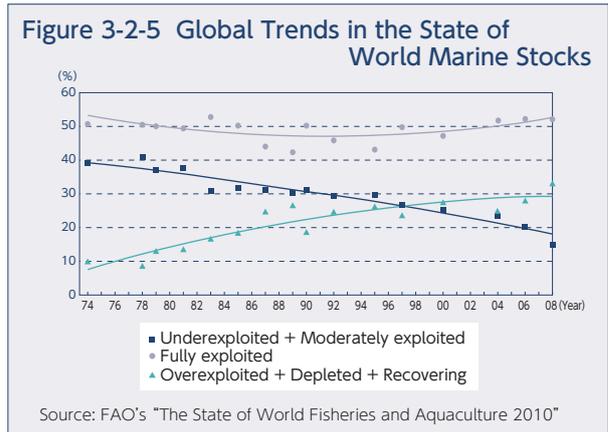
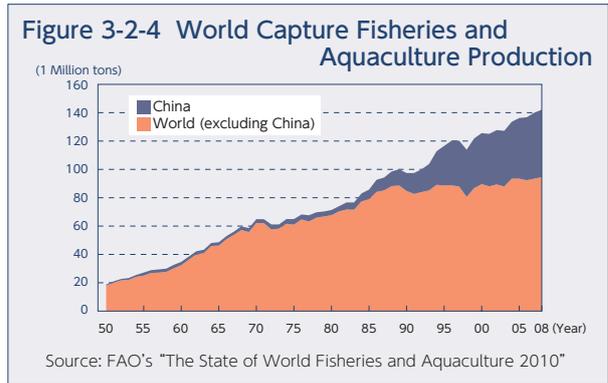
Source: Secretariat of the CBDs
"Global Biodiversity Outlook 3 (GBO3)"



called Cerrado occupies approximately one-fifth of Brazil's national land, and it is known as a region of rich biodiversity because it has many unique species of plants. In recent years, however, development of agricultural land has been proceeding rapidly to become one of the world's leading food production bases. In the period from 2002 to 2008 approximately 14,000km² of Cerrado disappeared each year, and half of it has already been changed into agricultural land and pastures. It is said that conversion to agricultural land for growing soybeans and other uses is still continuing at present. It is feared that future world population growth, improvements in people's daily lives in developing countries, and the resulting tightness of supply and demand for food will lead to even further loss of forests.

A trend of loss of biodiversity can also be seen from the perspective of ecosystem services. For example, fishing resources are biological living resources that support our daily lives, but in recent years they are in a state in which there are concerns about over-use. The world's amount of fishing production has been continuing to increase since 1950 (Figure 3-2-4: World Capture Fisheries and Agriculture Production), but as for use of fishing resources on the other hand, in 2006 approximately 60% were resources that "are being used sufficiently" and 20% are resources that are "being excessively developed, depleted or in the process of recovering from a state of depletion" (Figure 3-2-5: Shifts in the State of the World's Ocean Fishing Resources). Further, as for the genetic diversity of domesticated animals, cultivated plants, and fish species, GBO3 pointed out that "it is likely that genetic diversity of cultivated plants is declining," and there are concerns about declines in ecosystem services.

Thus, worldwide loss of biodiversity continues unabatedly on the various levels of ecosystems, species, and genes, and it is having an impact on ecosystem services. What will happen if that loss continues from



now on? GBO3 warns that if the Earth's system pushes beyond a certain tipping point, the risks of a dramatic biodiversity loss and the subsequent deterioration of a wide range of ecosystem services will increase. There is a theory that in the past Easter Island, which is in the southeast part of the Pacific Ocean, went through a tragic process because of population increase and destruction of the limited environment on the island, and its civilization was destroyed. Although the limits of energy resources, mainly fossil fuels, and mineral resources have been known for some time, unless we also use ecosystem services such as food supply and climate adjustment in a sustainable manner, we might this time reproduce a history of cultural destruction similar to that of Easter Island on a global scale. In order to keep the Earth from surpassing its tipping point due to dramatic biodiversity loss, we must steadily proceed with efforts for underlying factors such as loss and deterioration of habitats and economic activities. At COP10, post-2010 targets (the Aichi Biodiversity Targets) were adopted as global targets related to biodiversity to be reached by 2020. At the United Nations General Assembly held in December of last year, it was decided to make the period from 2011 to 2020 the "United Nations Decade on Biodiversity." It can be said that efforts made between 2010 and 2020 aimed at conservation and restoration of biodiversity will be the keys to whether or not the Earth surpasses its tipping point.



2. The State of Loss of Biodiversity in Japan

Japan Biodiversity Outlook (JBO), which was released in May 2010, was an assessment of the state of Japan’s biodiversity from the late 1950s to the present, made by experts and based on specific information such as statistics and documents. JBO concluded that, “Loss of biodiversity as a result of human activities in Japan has affected all ecosystems including forests and mountains, cultivated land, urban areas, inland water, marine and coastal areas, and islands, and the loss is continuing on the whole” (Figure 3-2-6: Biodiversity Loss in Japan).

As causes for the loss, there are direct causes due to human activities and development, and indirect causes in the background, such as socio-economic changes. Among these, the direct causes are laid out as four crises in the National Biodiversity Strategy. As for the “First Crisis,” which was brought about by human activities and development, although the speed of development will further decline if there is population decline and low growth, it is expected that the effects of development done in the past will continue. However, the largest impacts as causes of extinction of species and endangered species in Japan are the ones caused by development.

On the other hand, there are reports of examples such

as that sweetfish, which disappeared once, are returning to rivers in cities because of improvements in the water quality of the rivers due to the diffusion of sewerage systems. In recent years there are also fishing catch amounts that, although not the same as in the past, are starting to recover as a result of efforts for steady recovery of resources through resource management, including a complete ban on fishing for three years and then setting an allowable amount of catch after the ban was lifted, as was done with Sandfish fishing in Akita Prefecture (Figure 3-2-7: Shifts in Amounts of Sandfish Catches in Akita Prefecture). It can be said that there are cases when ecosystems still have the ability to recover, and it is possible to restore the habitats of living things and biological resources by alleviating effects from human activities such as development, or by conducting appropriate management of resources.

In places such as *satochi-satoyama*, the “Second Crisis” caused by reduction of human activities is a serious problem. Due to factors such as population decreases and aging in farming and mountain villages, it has become difficult to maintain and manage places such as *satochi-satoyama*, and there are concerns about

Figure 3-2-6 Biodiversity Loss in Japan

Biodiversity loss as of 2010	Current state of loss and trends		Causes of loss (degree of impact) and current trends				
	Degree of loss from original state	Degree of loss from state as of latter 1950s, and current trends	First Crisis Development/change Direct use Water pollution	Second Crisis Reduction in use and management	Third Crisis Invasive alien species Chemical substances	Crisis of climate change	Other
Forest and mountain systems						* 1	
Cultivated systems	—						Decrease in local varieties of crops and livestock
Urban systems	—			—			
Inland water systems					* 2		
Marine and coastal ecosystems				—	* 3		Outbreaks of coral predators/ Coralline flat
Island ecosystems				—			

Assessment targets	States			Causes				
	Size of current losses	Trends of current losses		Degree of impact during assessment period	Current trend of degree of impact			
Legend	Not lost		Recovering		Weak		Decreasing	
	Not significantly lost		Same		Moderate		Same	
	Lost		Being Lost		Strong		Increasing	
	Significantly lost		Being rapidly lost		Very strong		Increasing rapidly	

Note: Dashed lines for assessment of the degree of impact indicate that the data is not sufficient.

Note: “*” indicates that there are multiple factors and data related to the indicator in question, and that there are factors and data that show trends that differ from the current assessments of the degrees, effects, and trends of overall loss.

* 1 : The degree of impact on alpine systems has been and continues to be serious.

* 2 * 3 : While the problem of chemical compounds has been mitigated to some extent, the problem of invasive alien species is serious.

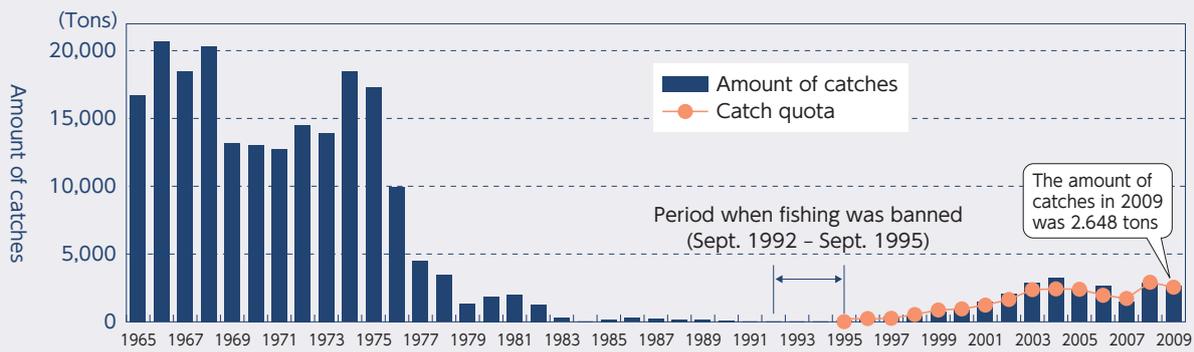
declines of ecosystem services because of reduced use of agricultural land and secondary forests. The total *satochi-satoyama* area accounts for about 40% of Japan's national land, and nearly half of the land where endangered species congregate is distributed in *Satochi-satoyama* areas, making them important for the conservation of biodiversity, but the effects of such factors are extending to the living beings around us. In the 2010 Tokyo Red List (mainland version) released by the Tokyo metropolitan government in July 2010, *Cybister japonicus*, which is an aquatic insect, was listed as an extinct species. Even though it was an insect that in the past could be seen everywhere, such as in rice paddies and ponds, it was deemed extinct in the mainland area of Tokyo. Living species that used to be around us are also continuing to disappear one after another, and even killifish are now listed as endangered species on the Red List of the Ministry of the Environment. We should be aware of the changes in our living environment that have, without us realizing it, caused changes in the habitats and growing locations of living beings around us, causing extinction of species. Meanwhile, in recent years in *satochi-satoyama* a reduction of human activities has caused expansion of the distribution of wild animals

such as deer and wild boars, which causes damage to agricultural and forestry industries, as well as to ecosystems, because such animals eat up rare plants and the understory vegetation of forests. It can be said that the task for working toward the future coexistence of people and nature in these regions is the question of how to proceed with conservation and management in light of changes in social conditions, such as population decrease and socio-economic changes.

As for the "Third Crisis" due to alien species and chemical substances brought in by humans, measures such as pest control based on the Invasive Alien Species Act are proceeding, as well as efforts such as developing effective and efficient pest-control technology. However, it is expected that the trend of intentional and un-intentional invasion of alien species, and species already settled and spreading, will continue from now on. There are concerns about such effects particularly on inland water systems such as rivers and lakes, and island systems. As for alien species for which the scope of their habitats expands as the temperature rises, the risk seems to increase that they will become established and spread. An extremely large amount of costs and labor are required in order to contain or eradicate alien

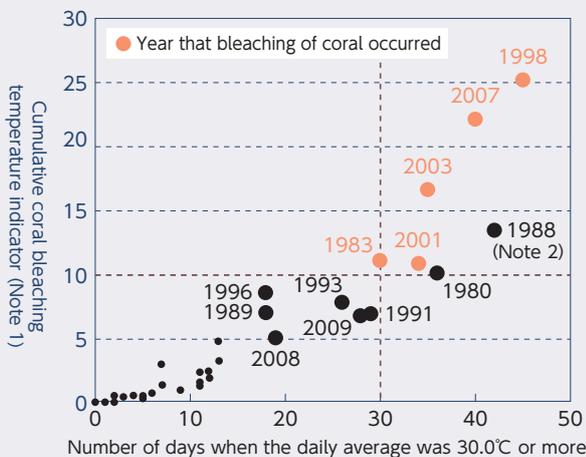


Figure 3-2-7 Changes of Sandfish Catches in Akita Prefecture



※Amounts of catches are from the Minister of Agriculture, Forestry and Fisheries Statistics Department's "Ocean Surface Fishing Production Statistics Survey." Amount of catches for 2009 is a preliminary figure. Source: Akita Prefecture

Figure 3-2-8 Relationship between Coral Bleaching in Sekisei Shoko and Temperature



Bleached coral (Sekisei Shoko)

Note 1: The temperature 30.0°C is set as the coral bleaching subtraction temperature, and the total of values that exceed 30.0°C is defined as the coral bleaching temperature indicator.

Note 2: Although 1988 is within the dangerous range, there was almost no affect by temperature on coral that year because of damage by being eaten by acanthaster. Source: "About the Temperature Environment at Time of Coral Bleaching in Sekisei Shoko" by Okamoto et. al (2007). Photograph: Ministry of the Environment

species once they have settled down and expanded their distribution. For that reason, it is of course necessary to strengthen monitoring systems in order to prevent alien species from newly taking root, and also to systematically and adaptively eradicate alien species that have already taken root, according to the extent of their damage and the necessity of eradicating them.

As for the “Climate Change Crisis,” there is a possibility that irreversible effects may occur in fragile ecosystems such as alpine areas and coral reefs (Table 3-2-8: Relationship between Coral Bleaching in Sekisei Shoko and Temperature). It is also thought that changes in distribution, populations, and phenology that have already been identified may affect a broad scope of living beings for which some examples have already been confirmed, and may cause changes in interactions among living beings. In order to handle the climate change crisis, it is necessary to proceed with reduction of greenhouse gas emissions, but even if the best possible efforts are made such reduction may take time and it is thought that some degree of effects from warming cannot be avoided. For example, it is said that if the concentration of CO₂ in the air exceeds 350ppm, coral reefs suffer irreversible damage due to increases in water temperature and acidification of ocean water, but that level has already been exceeded. For that reason, it is necessary to proceed with adaptive measures to deal with changes in the environment and ecosystems that occur due to global warming, but in order to proceed with specific adaptive measures, it will be important to clarify, through monitoring of ecosystems that are easily affected by global warming, the vulnerabilities to global warming and the level of impact on ecosystems and our daily lives that is caused by not being able to deal with the effects of global warming.

Meanwhile, loss of biodiversity is occurring not only in ecosystems and species, but also on the level of genetic diversity. JBO found that nearly all indigenous varieties of horses and cows have disappeared, with only 8 varieties of indigenous horse varieties remaining of what used to be nearly 50 called by area of production, and only 2 indigenous varieties of cows remaining. It is thereby assessed that, “There are only a few populations of indigenous types of livestock, and genetic diversity has declined.”

As for rice, which is an important living resource and the closest resource to the Japanese people, it was grown in approximately 4,000 varieties during the Meiji Period, but as of 2005 only 88 varieties (crop land area of 500 hectares or more) were grown, and the number of types of cultivated rice is declining significantly. Two-thirds of the rice currently harvested in Japan consists of *koshihikari* or the top four varieties which are of *koshihikari* lineage. An example of a problem caused by the unification of varieties is that the ratio of damage suffered by that crop will be great if a disease or pest that inflicts significant damage to a certain variety arises. As another example, in the past there was a case in which cultivation of the most representative variety of banana, called Gros Michel, suffered devastating damage from a disease caused by a fungus called Race 1. Although today the Cavendish variety, which is resistant to Race 1, is widely cultivated, there are no varieties that are resistant to the newly emerged fungus Race 4, and therefore there are concerns that bananas, with their poor genetic diversity, could suffer catastrophic damage. It is true that such concerns do not apply identically to other species, including rice, but conservation of genetic diversity of domesticated animals, cultivated plants, and fish species is a task to be dealt with.

3. The Relationship between Biodiversity and Our Daily Lives

Our daily lives heavily rely on ecosystem services. Ecosystem services include not only supply services such as food, but also regulating services related to modulation of air quality and protection against natural disasters, cultural services related to cultural diversity and traditional and customary knowledge, and support services related to soil formation and water circulation. The “Japan *Satoyama-Satoumi* Assessment (JSSA),” which analyzed changes in *satoyama-satoumi* ecosystems in Japan over the last fifty years, found that there are many services, ranging from services of broad foundation to cultural services (Table 3-2-1: Changes in Ecosystem Services and Direct Drivers). In *satoyama* and *satoumi* we have used a wide variety of services since long ago through humans coexisting with nature, but in order to continue to use such ecosystem services in a sustainable manner, it is essential to conserve biodiversity into the future. In order to do so, it is important to use such services in a way that does not exceed ecosystems’ resilience and resistance. The “ecological footprint” is one indicator that measures the impact that our daily lives have on biodiversity. The ecological footprint is an indicator that shows the environmental load caused by human activities in the land area required for such activities. The ecological footprint

is increasing every year due mainly to the carbon footprint (the land area necessary to absorb carbon dioxide caused by consumption of fossil fuels.). At present, a planet 1.5 times the size of the Earth is necessary to support our daily lives, and by the mid-2030s it is predicted that 2 times the size of the Earth will be required. In other words, it can be said that our current daily lives are barely viable by eating up all of the future’s resources (assets) (Figure 3-2-9: Shifts in the World’s Ecological Footprint).

Although in recent years Japan’s ecological footprint has been in a trend of decline, Japan’s 2006 ecological footprint was approximately 1.5 times the global average, and if all of the world’s people lived the same lifestyle as the people of Japan, a planet 2.3 times the size of the Earth would be required (Figure 3-2-10: Ecological Footprint in Japan). A characteristic of Japan is that the ecological footprint is large in comparison with its biological productivity (Figure 3-2-11: Ecological Creditor- Debtor Status by Country, including the Ecological Footprint to Bio-capacity Ratio). That means that many of the resources consumed in Japan rely on imports from other countries, causing impacts on ecosystem services in other countries.

Table 3-2-1 Changes in Ecosystem Services and Direct causes

Ecosystem services				Direct causes							
		Human use	Enhanced or degraded	Indicator and criteria	Urbanization	Loss of mosaic	Undeuse	Over-exploitation	Global/Regional warming	Increase of invasive alien species	Pollution
Supply services	Food	Rice	↘	➔	Crop yield, cultivated area, yield per 10a	✓		✓		✓	✓
		Livestock	NA	NA	–						
		Matsutake mushrooms	↘	↘	Yield			✓			
		Marine fishery	↘	↘	Catch	✓		✓	✓	✓	
		Aquaculture	↗	NA	Catch	✓					✓
	Fiber	Timber	↘		Forestry production index, standing tree store	✓		✓			✓
		Firewood & charcoal	↘	NA	Forestry production index	✓		✓			
Sericulture		↘	↘	Cocoon harvest, mulberry grown area			✓				
Regulating services	Air quality regulation		+/-	+/-	NOx/SOx concentration, amount of yellow dust and endocrine-disrupting chemicals	✓		✓			✓
	Climate regulation		+/-	+/-	Changes or fluctuations of temperature and precipitation	✓		✓		✓	
	Water regulation, flood control		+/-	+/-	Area of paddy fields, number of reservoirs	✓	✓	✓			
	Water purification		+/-	+/-	Forest area, amount of chemical fertilizer and pesticide use, percentage of population with sewage systems	✓	✓	✓			✓
	Soil erosion regulation	Cultivated land / Forest	+/-	+/-	Area of abandoned cultivated land, changes in forest type	✓	✓	✓			✓
		Coast	+/-	+/-	Sediment supply	✓		✓			
Pest regulation and pollination		↘	↘	Amount of pesticide use, area of abandoned cultivated land, changes in forest type	✓	✓	✓				
Cultural services	Spiritual	Religion (shrines and temples, ceremonies)	NA		Number of temples and shrines, area of sacred groves	✓					
		Festivals	↘		Variety (number) of festivals, use of plants for flower dedication	✓					
		Scenery	↘		Number of applications for '100 best Satoyama selection'	✓					
	Recreation	Education (environmental education, outdoor observations, outdoor play)	➔		Number of participants, number of NGOs working for satoyama conservation, area of activities, time children spend outdoors	✓					
		Game-hunting and fishing, Gathering clams and wild vegetables	↘		Number of participants (described in leisure white paper), number of facilities	✓					
		Mountain climbing/Travel/Green tourism	↗		Number of participants (described in leisure white paper), number of facilities	✓					
	Art	Traditional art (music, dance, fine art, literature, craftwork)	↘		Number of professionals, production, average age (in terms of education of successors)	✓					
Contemporary art (music, dance, fine art, literature, craftwork)		NA		Number of professionals, production, average age (in terms of education of successors)							
Basic services	Forest Primary production		➔	Area	✓		✓	✓	✓	✓	
	Grassland Primary production		↘		✓		✓			✓	
	Wetland Primary production		↘		✓	✓					
	Farmland Primary production		➔		✓		✓			✓	
	Rivers/Lakes Primary production		↘		✓	✓				✓	
	Tideland Primary production		↘		✓	✓	✓	✓	✓	✓	
	Sea Primary production		↘		✓	✓	✓		✓	✓	

Backed by data	Without supporting data	KEY	
↗	↗	+/-	Mixed (trend increases and decreases) over the past 50 years, or some components/regions increase while others decrease
↘	↘	NA	Not assessed (insufficient data, not reviewed)
➔	➔	✓	The direct causes that have influenced ecosystem services

Source: United Nations University's "Japan Satoyama-Satoumi Assessment (JSSA)"



Figure 3-2-9 Ecological Footprint by Component 1961-2007

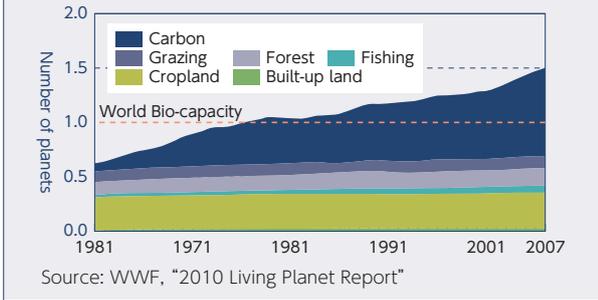


Figure 3-2-10 Japan's Ecological Footprint of Consumption

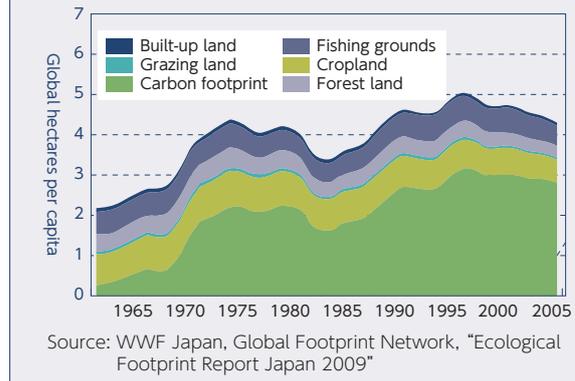
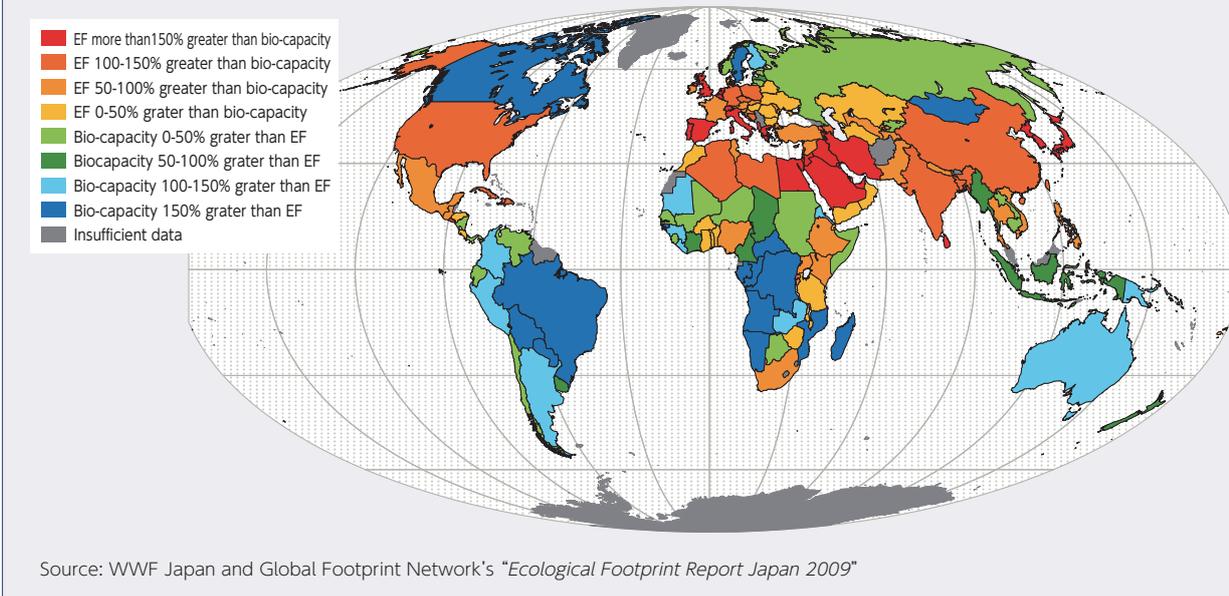


Figure 3-2-11 The Ecological Footprint of Countries and Ecological Creditor-Debtor Status, Indicating the Ecological Footprint to Bio-capacity Ratio



4. The Impact that Japan has on the World's Biodiversity

Japan's population is approximately 130 million people, and its ratio of the world's population of approximately 6.9 billion people is less than 2%. However, looking at resource consumption, compared to population-ratio Japan in general consumes a large ratio of the resources produced in the world. Depending on the use of those resources, there is also a risk that such use will impact the world's biodiversity.

Japan is one of the world's leading consumers of fishing resources, and tuna is an example of one of those fishing resources. Because tuna migrate through the vast ocean, countries related to the tuna fishing industry have established regional fishing management organizations for each type of tuna and each of their migration ocean areas, and the countries are working to manage the resources they are responsible for and use them in a sustainable manner by managing resources according to the state of such resources. However, southern bluefin tuna and some other types of tuna have been put on the Red List by the IUCN. At the Conference of the Parties to CITES

that was held in Doha, Qatar in 2010, it was proposed that Atlantic bluefin tuna should be listed in Appendices I, thereby prohibiting international transactions for commercial purposes. Japan consumes more than 20% of the amount of tuna consumed in the world, and approximately 80% of the world's catches of the high-end food bluefin tuna. Although it is part of Japanese culture to consume many kinds of fish, it can also be said that this is an example that shows that there is a risk that Japan is affecting natural resources for which there are concerns about their continued global existence. As the world's largest consumer of tuna, Japan will aim to thoroughly manage and sustainably use resources and exhibit even greater international leadership in the future.

Japan is also known as an importer and consumer of shrimp, and countries in Asia, mainly Southeast Asian countries such as Vietnam, Indonesia, and Thailand, make up a large ratio of the sources of such imports (Figure 3-2-12: Suppliers of Shrimp to Japan). Many living

beings inhabit mangrove forests that broadly line the coast of the sea, and because such forests are effective for regenerating resources since they serve as a place for fish to lay eggs and as habitats for young fish, they are referred to as “cradles of life.” In addition, because they have effects such as protecting places of residence on land from high ocean waves, it is said that the very existence of mangrove forests has significant public benefit. However, in Southeast Asia many mangrove forests have disappeared due to development of shrimp farms, and because many living beings that rely on mangrove forests have been lost, this has created a vicious circle in which various public benefits are also being lost.

Japan is also one of the world’s leading importers of timber, which is an important biological resource. When timber imports were fully liberalized in 1964, timber imports from around the world, mainly Southeast Asia, North America, and Russia, increased drastically to meet the robust demand for timber due to rapid economic growth. Currently the main sources of imports are diversifying due to an increase of imports from places such as Australia and Europe, but it can also be said that countries such as Japan that import timber depend on logging and conversion of the world’s forests, which are treasuries of natural resources (Figure 3-2-13: Breakdown of Supplies of Timber to Japan, Figure 3-2-14: Shifts in Amount of Timber Supplied).

In terms of impact on biodiversity, efforts in the field of minerals are also important. This is because the mining industry sometimes conducts large-scale development in regions that have rich ecosystems, resulting in many cases in which there is a large impact on biodiversity. Rivers and other water systems are affected not only by direct development but also by the effects of development

of infrastructure such as road construction and chemical substances. For example, nickel is used in materials such as metal plating and stainless steel, and Japan relies on imports from other countries for all of its nickel. Japan imports some of its nickel from New Caledonia, which has abundant nickel reserves (Figure 3-2-15: Suppliers of Nickel to Japan), but as a result of evolution of unique plants and animals, New Caledonia is known as a region that many unique species inhabit and as a region that is important for the conservation of biodiversity. Japan also must rely on regions that have rich biodiversity, such as the South Pacific Ocean, Central and South America, and Africa, for many mineral resources other than nickel, and it can be said that development of mineral resources and conservation of biodiversity are tasks that are two sides of the same coin. For that reason, corporations in

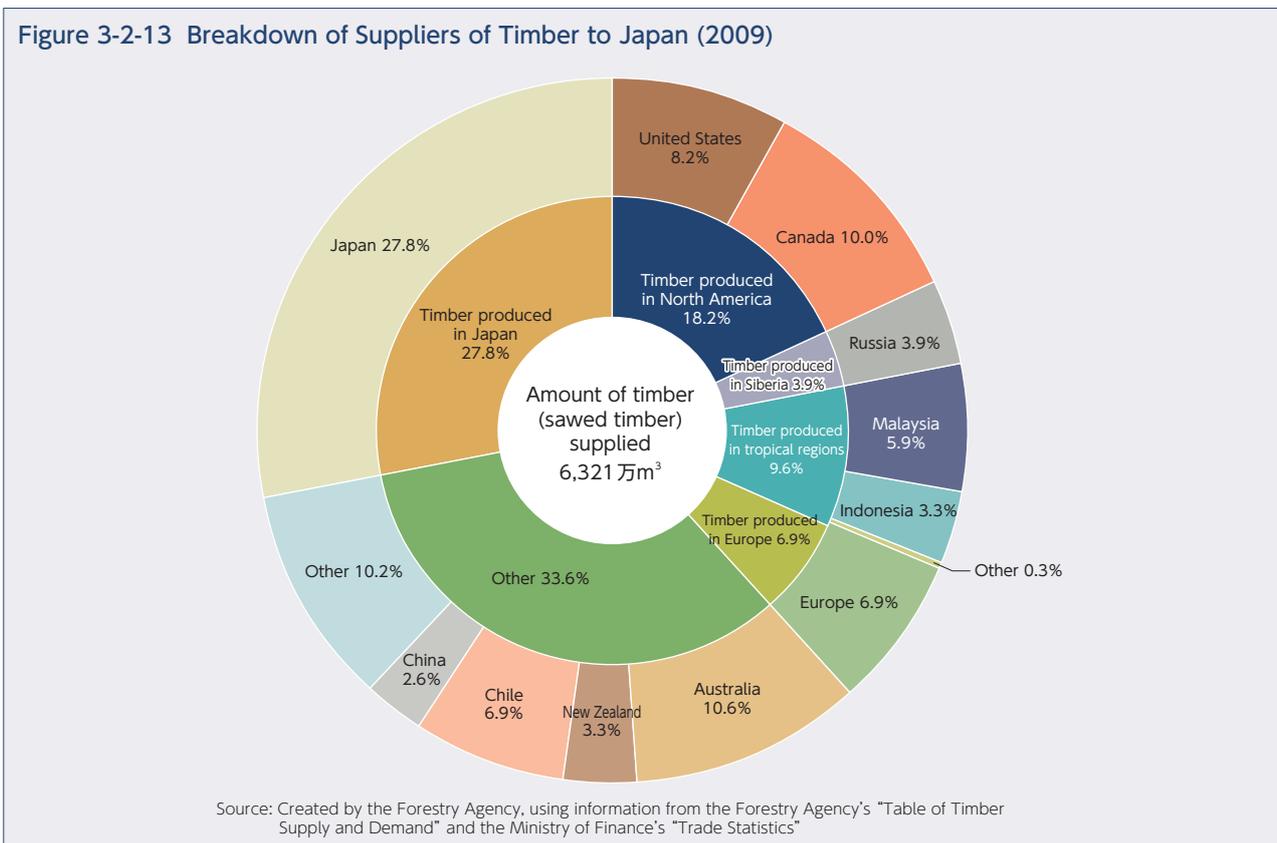
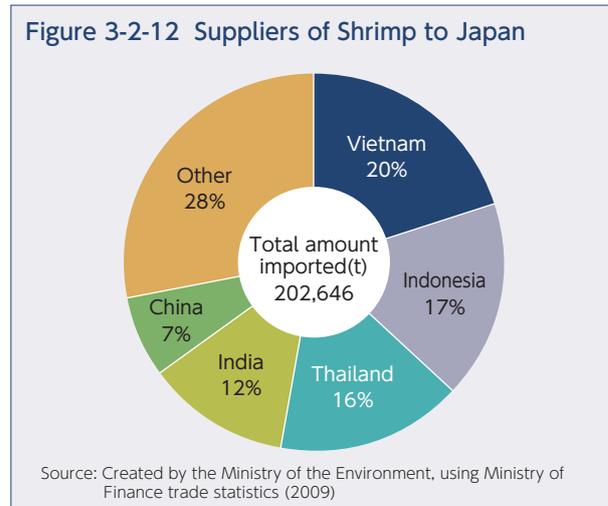
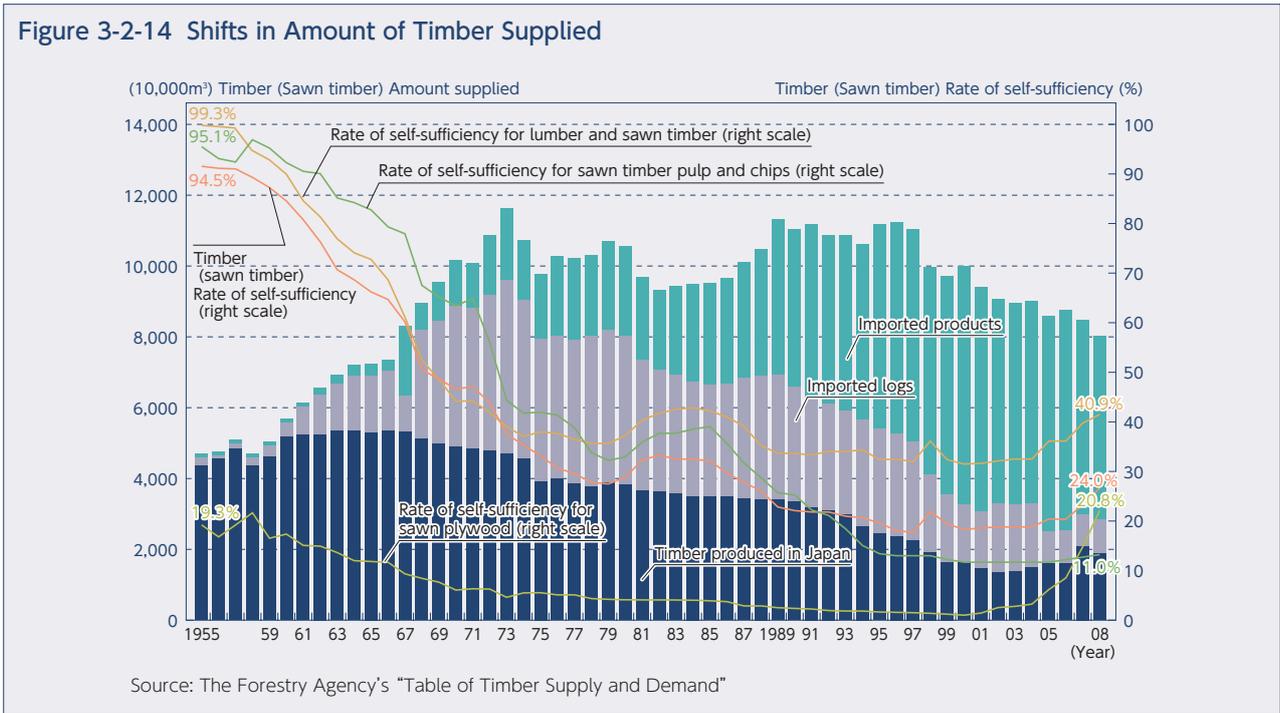


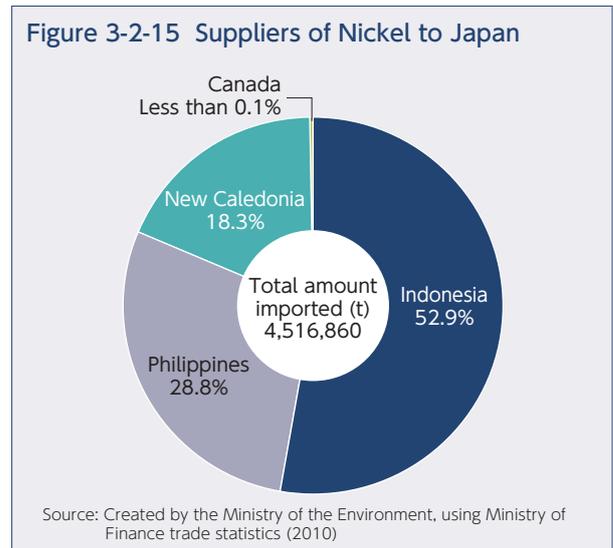
Figure 3-2-14 Shifts in Amount of Timber Supplied



fields of the mining industry are also making efforts for biodiversity. For example, “contribution to conservation of biodiversity and integrated approaches to land-use planning” is one of the ten principles promised by member companies of the International Council on Mining and Metals (ICMM). If we look at only products manufactured using mining resources as materials, it would be difficult to identify the effects on biodiversity such as biological resources and ecosystems, but if we look at the mine sites, it can be seen that they are related to biodiversity in terms of the effects of our daily lives on living resources and ecosystems.

Meanwhile, in addition to impacts caused by using resources, it is also reported that alien species carried overseas unintentionally are affecting other countries. For example, there are reports that seaweed produced in Japan is spreading in other countries and causing damage. As an example of direct effects on human health and well-being, it is said that the Asian tiger mosquito has settled down in the United States by slipping itself into goods exported from Japan. The mosquito is one of the routes of human infection of West Nile fever in the United States. When the topic of alien species is brought up, there is a tendency to focus on plants and animals brought into Japan from other countries, such as black bass and bluegill, raccoons, and mongoose, but as with the examples of seaweed and the Asian tiger mosquito, we must not forget that plants and animals thought to

Figure 3-2-15 Suppliers of Nickel to Japan



be coming from Japan also have negative effects on ecosystems in other countries. With increasing economic globalization, Japan will continue to be involved with many countries around the world through imports and exports. In doing so, it is necessary to keep in mind that there are unintentional effects or possible effects on ecosystems.

Section 3 In Order to Stop Biodiversity Loss

In order to stop biodiversity loss on a global scale, it is necessary that individual countries steadily implement the outcomes of COP10. The “United Nations Decade on Biodiversity,” which was proposed by Japan at COP10 and under which international society will concentrate on

measures for the problems of biodiversity, began in 2011. In this section we will discuss the current state of measures related to biodiversity and the direction of measures from now on that are aimed at achieving the Aichi Biodiversity Targets.

1. Direction of Measures throughout the World

Although GBO3 concluded that the 2010 Targets were not achieved, setting the 2010 targets brought about the results of expansion of protected areas, promotion of conservation of specific species, increase of measures against pollution and alien species that negatively impact ecosystems, development of national biodiversity strategies and action plans, increase of financing for conservation, research on biodiversity, monitoring, and promotion of scientific evaluation. However, issues remain: insufficient scale of tasks, insufficiency of consideration of biodiversity in broad-scale policies, strategies, and business, insufficiency of handling the underlying drivers of biodiversity loss, and lack of financing related to biodiversity compared to funding for development purposes. For example, protected areas are increasing every year, but there is a problem that there is variation in management effects. There are areas that still are designated as protected areas in spite of not being appropriately managed and are protected areas only on maps (“paper parks”) (Figure 3-3-1: Nationally Designated Protected Areas; Figure 3-3-2: Coverage of Terrestrial Protected Areas by Eco-region in Land Areas).

As of October 2010, including the EU there were 193

countries that were party to the Convention on Biological Diversity, and each of the parties is obligated to stipulate national biodiversity strategies according to their individual circumstances. According to an assessment report by United Nations University, as of October 2010 there were 171 countries that had formulated national biodiversity strategies, and 13 countries were in the

Figure 3-3-1 Extent of Nationally Designated Protected Areas

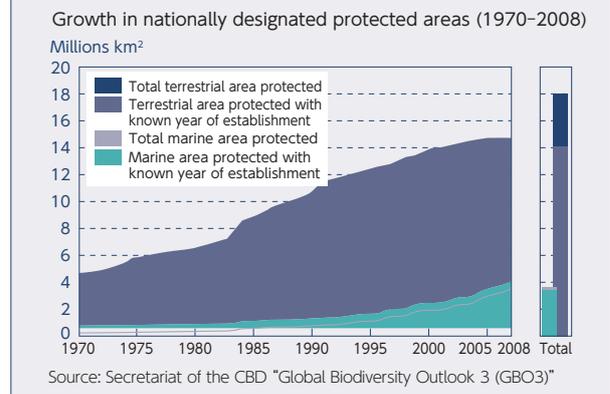
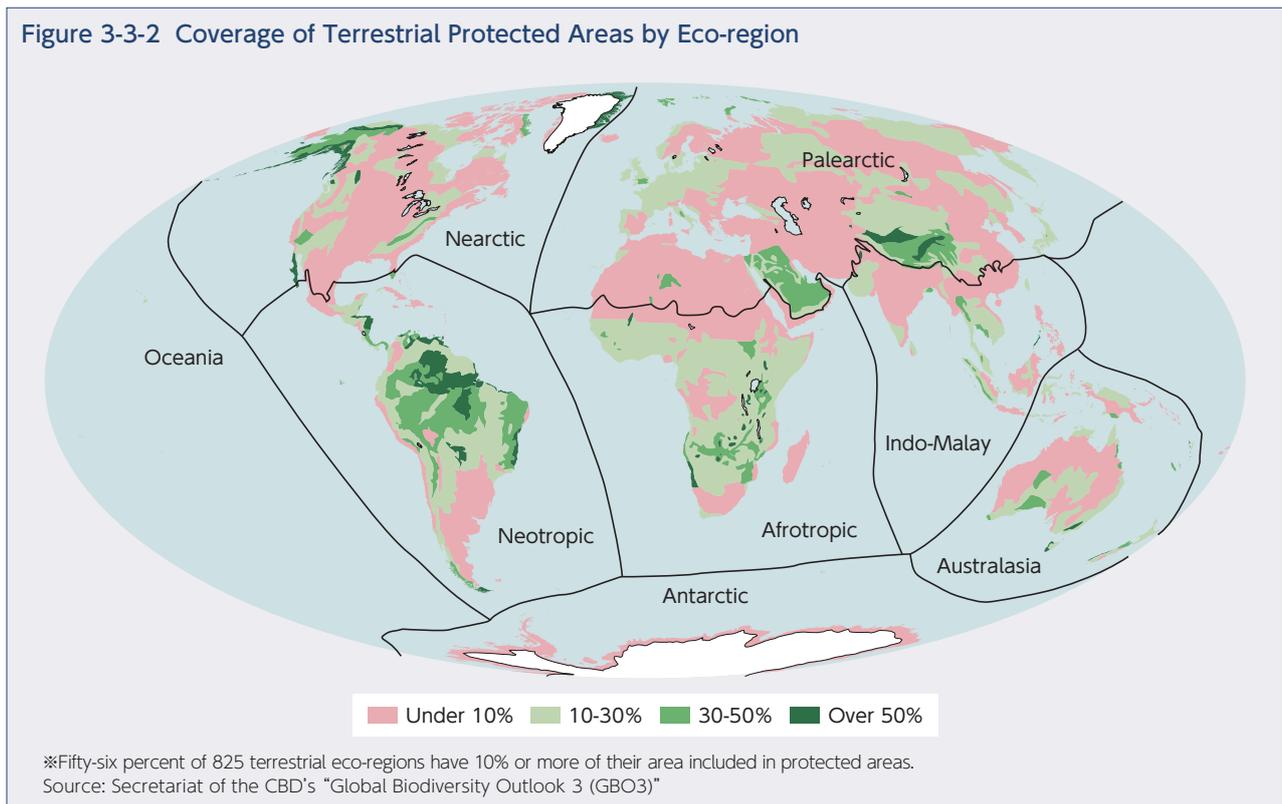


Figure 3-3-2 Coverage of Terrestrial Protected Areas by Eco-region



process of formulating one. That assessment report found that due to formulation of national biodiversity strategies, in many countries progress was being made for measures to designate protected zones and protect threatened species and in measures aimed at making biodiversity mainstream, but that reduction of the main factors of biodiversity loss had not been achieved. It also found that there were many national biodiversity strategies that had never been revised since formulation, and strategies for which a long time had passed since they were last formulated or revised, and that there were some that did not function as mechanisms to implement

the decisions of the Convention on Biological Diversity. National biodiversity strategies play roles as roadmaps for achieving the objectives of the Convention on Biological Diversity and, under the Aichi Biodiversity Targets, revision of such strategies by 2015 is set as one of the individual targets. From now on each of the parties to the convention will proceed with measures including revision of national strategies for biodiversity in order to achieve the Aichi Targets. As for the Nagoya Protocol as well, it is necessary for each country to conclude it as soon as possible, put it into effect, and appropriately implement it.

2. The Current State and Direction of Measures in Japan

Japan concluded the Convention on Biological Diversity in 1993 and the government is developing various policies such as measures for a national biodiversity strategy. Meanwhile, main constituents such as local and regional governments, businesses, private organizations, and citizens are also working on measures aimed at conservation of biodiversity and sustainable use (Figure 3-3-3: Outline of the National Biodiversity Strategy of Japan 2010). On the other hand, the JBO that was released in May 2010 found that, “Loss of biodiversity as a result of human activities in Japan affected all ecosystems, and the loss is continuing on the whole.” From now on, in order to achieve targets such as “conservation of 17% of terrestrial and inland water areas and 10% of coastal and marine areas by 2020 (Target 11)” and “contribution to climate change mitigation and adaptation through restoration of at least 15% of degraded ecosystems (Target 15),” it is necessary to further promote efforts aimed at conservation and restoration of ecosystems, such as expansion of quality and quantity of protected areas and rejuvenation of nature. For that reason, we have to move forward with designation and reconsideration of protected areas based on scientific data, so that important ecosystems and habitats of living beings from the national level to the regional level keep their functions as the core of the ecosystem network of national land. In addition, we have to work to enhance protection and management of regions designated as protected areas in accordance with the type of ecosystem. Further, in March 2011 the “Strategy for Conservation of Marine Biodiversity,” which outlines the perspectives and the direction for the conservation and sustainable use of marine biodiversity, was launched, and a target was set to increase the area of Marine Park Areas in national parks to double the area of 2009 by 2012.

A characteristic crisis in Japan is the “Second Crisis” caused by reduced management in *satochi-satoyama*, and in September 2010 an “Action Plan for Conservation and Sustainable use of *Satochi-Satoyama*” was launched. Under that plan, citizens as a whole support *satochi-satoyama* as shared resources (new commons), and efforts are being made to continue this into the future through participation and cooperation of not only people involved in agriculture and forestry and regional communities, but also people from all kinds of positions, such as citizens, NPOs, corporations, experts, and the government. In addition to responding to the decrease in

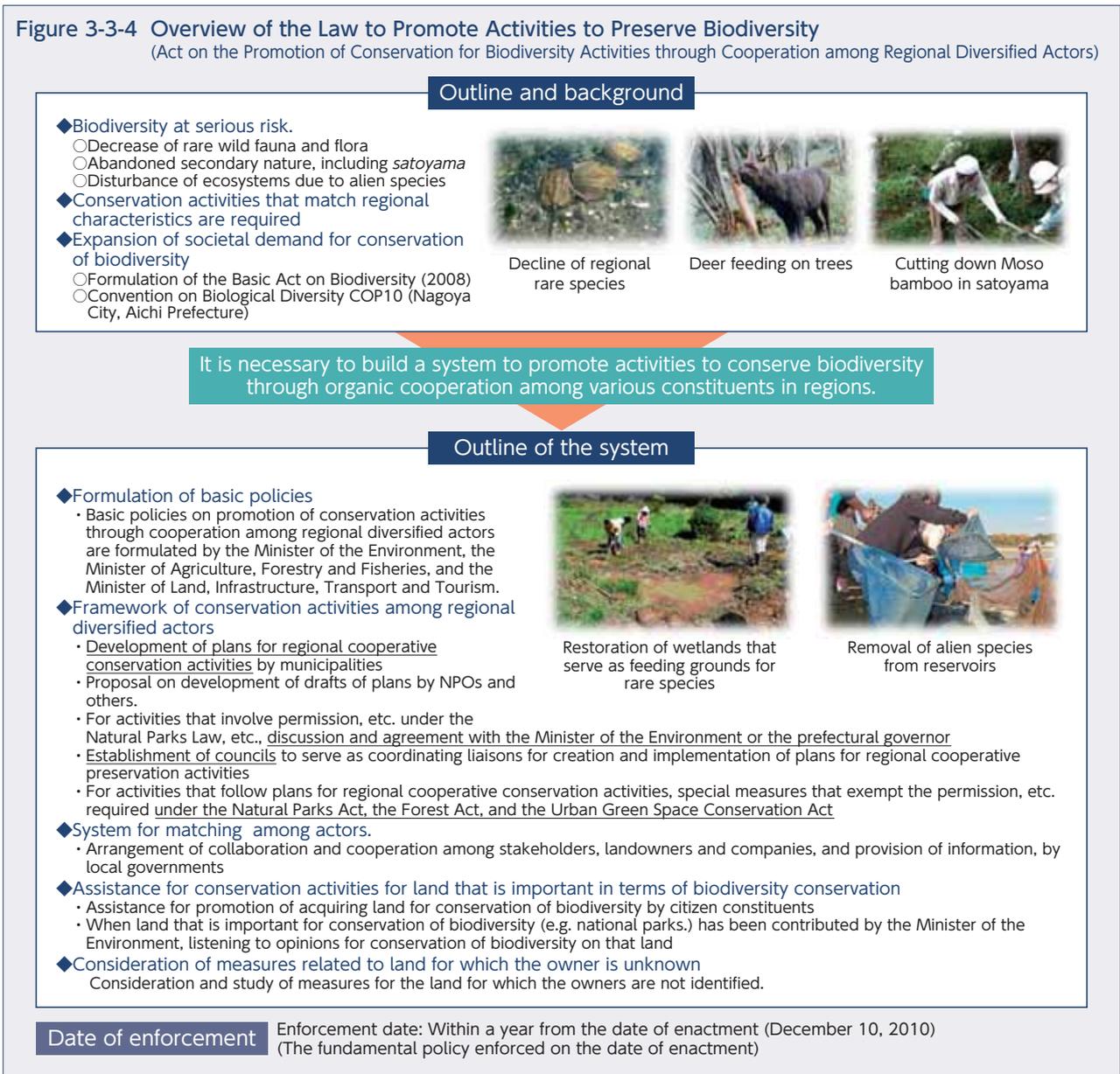
human activities, in order to proceed with conservation of endangered species and deal with alien species, it is necessary to make efforts adjusted to characteristics of regions. For that reason, in December 2010 the “Act on the Promotion of Activities for Biodiversity Conservation through the Cooperation among Regional Diversified Actors” was enforced (Figure 3-3-4: Overview of the Act on the Promotion of Activities for Biodiversity Conservation through the Cooperation among Regional Diversified Actors), and it is anticipated that from now on conservation activities will be promoted through collaboration of various regional main constituents. As further efforts to contribute to measures against the declining use of *satochi-satoyama*, there are examples of “Payment for Ecosystem Service (PES)” and other similar systems, under which the people who are provided ecosystem services such as the watershed protection of forests and purification of water quality pay management costs to the manager in order to maintain such services.

At COP10 the final report of “The Economics of Ecosystems and Biodiversity (TEEB)” was published, and in light of the results of this TEEB, the World Bank developed tools necessary for including the economic values of ecosystems such as forests and wetlands, and coral reefs, and announced establishment of a new global partnership to be offered to developing countries. “Integrating biodiversity values into national and local development plans, etc., and incorporating it into national accounting, as appropriate, and reporting systems (Individual Target 2)” was also included in the Aichi Biodiversity Targets, and from now on assessing the value of ecosystem services that cannot be directly converted into money, and then including that value in the socio-economic mechanism will be important in dealing with biodiversity crises such as the Second Crisis.

For the “Third Crisis” caused by alien species and chemical materials brought in by humans and the “Climate Change Crisis” as well, we must further promote measures such as strengthening systems to monitor alien species and methodically and adaptively eradicate them, reduce greenhouse gas emissions, and take measures to adapt to global warming.

Meanwhile, it is also necessary to take measures at the same time against indirect causes such as changes in society and the economy. Although it is believed that the level of awareness about biodiversity increased dramatically as a result of COP10, from now on it will

Figure 3-3-4 Overview of the Law to Promote Activities to Preserve Biodiversity
 (Act on the Promotion of Conservation for Biodiversity Activities through Cooperation among Regional Diversified Actors)



consideration. Further, in addition to conventional regulatory methods for proceeding with conservation of biodiversity and sustainable use, it is also important to consider the possibility of policy options that utilize the market mechanism for the value of biodiversity and ecosystem services.

From now until COP11 is held in India in 2012, it is necessary for Japan, as the Presidency, to take the lead in efforts for various decided matters such as the “Aichi Biodiversity Targets” and the “Nagoya Protocol.”

Internationally, Japan will support revision of developing countries’ national strategies for biodiversity under the Aichi Biodiversity Targets, establish a system for implementing the Nagoya Protocol, promote the SATOYAMA Initiative, and facilitate the establishment of IPBES.

Domestically, Japan will review its national biodiversity strategies under the Aichi Biodiversity Targets. In particular, in order to achieve the 20 individual targets set under the Aichi Biodiversity Targets, it will be necessary to establish action plans aimed for the

target years and numerical targets of each individual target, and establish a mechanism for steadily promoting measures while confirming the state of implementation and achievement of individual targets. Also, in addition to individual targets for which new consideration is necessary according to “integrating biodiversity values into national and local development plans and including it in national accounting, as appropriate, and reporting systems (Individual Target 2),” efforts by society as a whole that include targets which require individual efforts by businesses, local public organizations and NGOs, as set forth by “stakeholders at all levels take steps to achieve or have implement plans for sustainable production and consumption (Individual Target 4), are essential.” At the United Nations General Assembly that was held in December 2010, the ten years from 2011 through 2020 were designated as the “United Nations Decade on Biodiversity,” and from now on it will be necessary for international society to cooperate to make efforts toward conservation of biodiversity, but efforts by main constituents in Japan will also become

increasingly important.

In the next section, we will show efforts toward

conversion to a biodiversity-friendly society and economy.

Section 4 Conversion to a Society and Economy That Take Biodiversity into Account

1. Public Awareness about Biodiversity

In order to convert to a society in which the benefits of biodiversity can continue to be enjoyed through sustainable use in the future, it is necessary to incorporate conservation of biodiversity and sustainable use into various socio-economic activities, from a global scale to the level of familiar citizen activities. An example is the first of the 20 individual targets of the Aichi Targets: “People become aware of actions for the value and conservation of biodiversity and sustainable use.” According to a public opinion survey conducted by the Cabinet Office in 2009, the national degree of awareness of the word biodiversity (the ratio of people who have heard of the word or who know the meaning of the word) is only 36.4% (Figure 3-4-1: Degree of Awareness of the Word “Biodiversity”). Due to COP10 there has been a significant increase of interest in biodiversity, but in order to reduce the load on biodiversity caused by human activities, it is necessary for all people to be aware of the meaning of the word biodiversity and its value and to take real actions. That is the starting point for everything.

2010 was the “International Year of Biodiversity” designated by the United Nations plenary session, and a variety of events related to biodiversity were held around the world. In Japan a “Japan National Committee for the International Year of Biodiversity (Life on Earth Committee)” was established, and with the participation of various main constituents such as academic experts, cultural figures, economic circles, the mass media, and

2. Efforts by Businesses

Corporations and other businesses are playing an important role of broadly providing the benefits of biodiversity to society through products and services. In addition, activities by businesses affect biodiversity in various situations, receive its benefits, and are closely related to biodiversity (Figure 3-4-2: Overview of Business Activities and Biodiversity).

The individual targets of the Aichi Targets state that, “All related parties, including businesses, will implement plans for sustainable production and consumption.” Thus it is necessary for all main constituents such as private businesses to take biodiversity into consideration in their use of natural resources, the supply chain, investment and lending.

Movements related to biodiversity and business began at COP8 held in 2006 when a resolution related to the importance of participation by private businesses was adopted. That resolution pointed out the delay

of participation by private businesses in relation to biodiversity, and included the following expectations for contributions that could be made by private businesses: 1) adoption and promotion of exemplary practices by businesses, which have significant ability to affect biodiversity, can contribute substantially to convention of loss of biodiversity, 2) private businesses that have significant ability to influence the government and public opinion are the key to expanding conservation of biodiversity and sustainable use, and 3) private businesses have the ability to accumulate knowledge and technology related to biodiversity and general management, research and development, and communication, and they can be expected to be active in practical aspects of preservation of biodiversity and sustainable use.

At COP9 held in 2008, a signing ceremony for the “leadership declaration” of the “Business and Biodiversity Initiative (B&B Initiative)” was held, with participation by

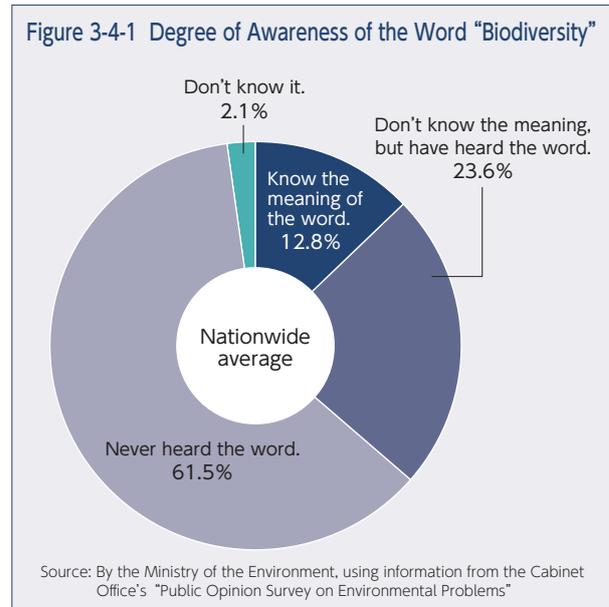
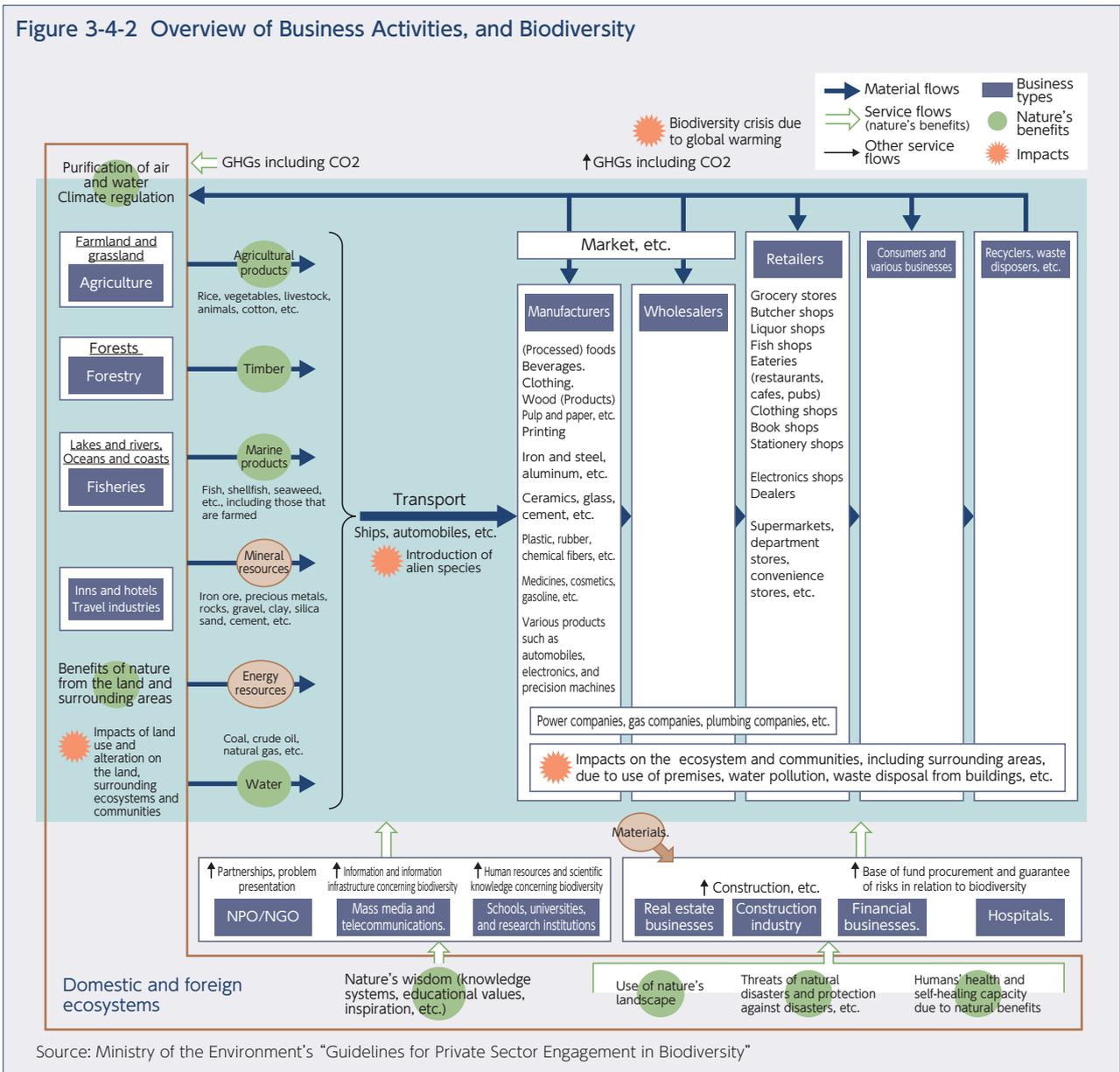


Figure 3-4-2 Overview of Business Activities, and Biodiversity



34 companies, including 9 companies from Japan.

Under the Basic Act on Biodiversity enacted in 2008, in Japan it is the duty of businesses to reduce the impact that their business activities have on biodiversity. Further, in August 2009 the Ministry of the Environment released "Guidelines for Private Sector Engagement in Biodiversity," which are guidelines for businesses when they make voluntary efforts for conservation of biodiversity and sustainable use. The guidelines specifically indicate rationales, actions to take and fundamental principles for businesses when they voluntarily make efforts that take biodiversity into consideration (Figure 3-4-3: Overview of Guidelines for Private Sector Engagement in Biodiversity).

Business communities have also started to take actions. Keidanren (Japan Business Federation) and Chukeiren (Chubu Economic Federation) each announced a "Biodiversity Declaration" in March 2009 and in October 2010 respectively, and they are showing determination to actively make efforts for biodiversity and guidelines for taking specific actions. There are also examples of efforts through collaboration by individual companies and multiple

companies, such as establishment of the "Japan Business Initiative for Biodiversity (JBIB)" (April 2008) and public announcement of the "Biodiversity Initiative for Lake Biwa" by the Shiga Committee for Economic Development (April 2009).

In addition, taking advantage of COP10 being held in Japan, the "Japan Business and Biodiversity Partnership" was established on the initiative of Keidanren and other parts of Japan's economic circles. This partnership is a framework to promote participation by a wide variety of main constituents such as corporations in business activities that take biodiversity into consideration, and as of February 2011 there were 440 organizations participating in it. Efforts are also being made to build an international network through collaboration with corporations that participate in Germany's B&B Initiative (Figure 3-4-4: Conceptual Diagram of Japan Business and Biodiversity Partnership, Figure 3-4-5: Policy for Action under Japan Business and Biodiversity Partnership).

Although such leading-edge efforts are moving forward, there are still many tasks for efforts by businesses. A questionnaire survey of corporations that the Ministry of



Figure 3-4-3 Overview of Guidelines for Private Sector Engagement in Biodiversity

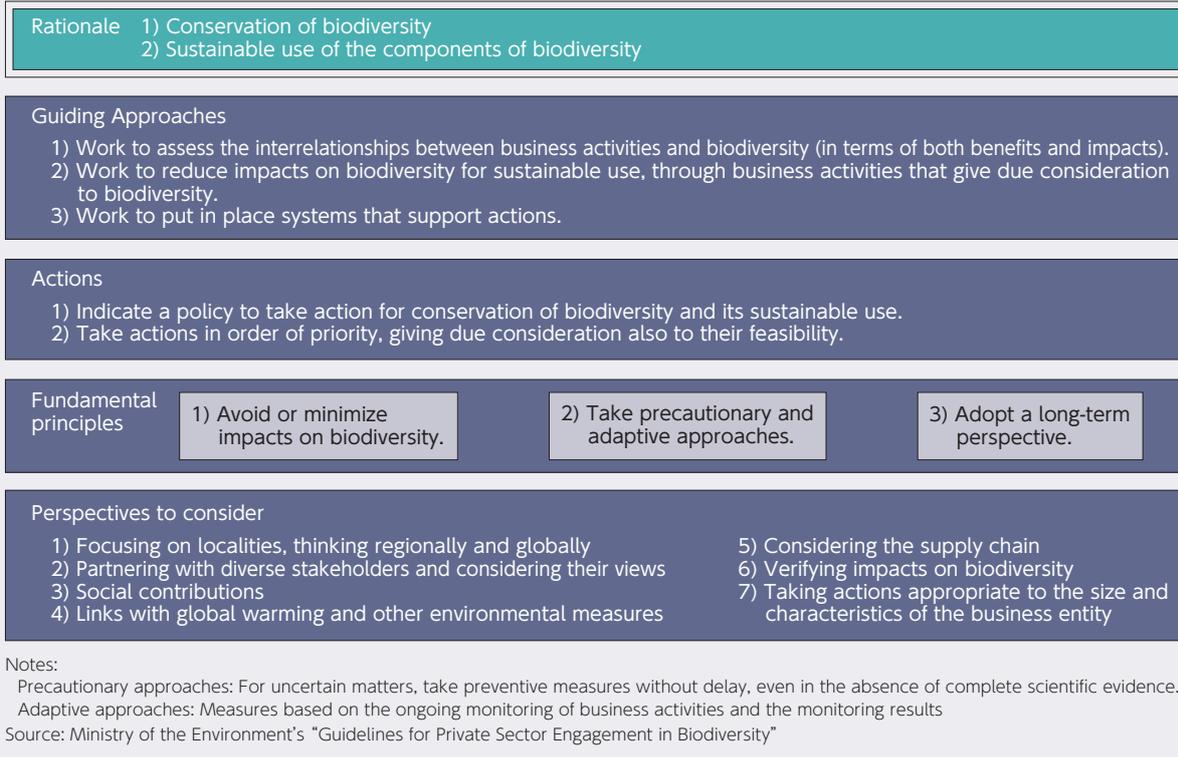
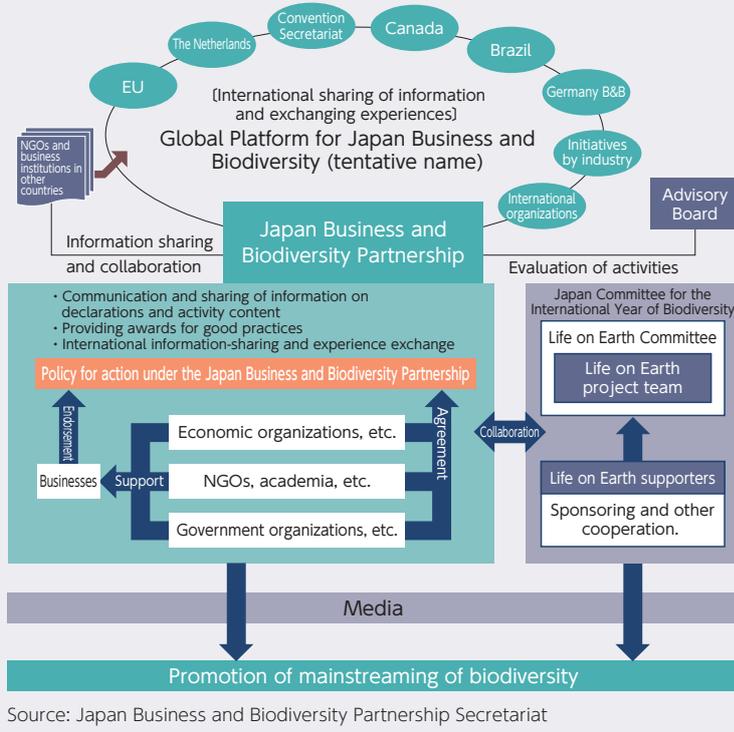


Figure 3-4-4 Conceptual Diagram of Japan Business and Biodiversity Partnership



Source: Japan Business and Biodiversity Partnership Secretariat

activities is also only approximately one-fourth of all corporations (Figure 3-4-6: Efforts to Conserve Biodiversity through Corporate Activities). Because business activities are built on close relationships with transaction partner companies, consumers, producers, and regional society, there are limitations on efforts made by single corporations alone. In that sense, it is necessary to have the necessity and value of efforts made by corporations for conservation of biodiversity and sustainable use understood by a wide range of such relevant parties.

Private businesses have various scales and business functions, and each is involved with biodiversity in a different manner. Many business efforts that take biodiversity into consideration are conducted mainly by large corporations, but from now on a major task will be to promote efforts by small- and medium-sized corporations in addition to those by large corporations. For that reason, here we will introduce some examples of efforts by small- and medium-sized corporations.

the Environment conducted from August to September in 2010 showed that although the number of corporations that answered that “efforts are significantly relevant to corporate activities and are prioritized” had risen by approximately 4 points over the previous year, it was still only 17.2%. The number of corporations that make efforts for preservation of biodiversity in their business

Because coffee is an agricultural product that can be cultivated in the shade, such as under trees, it is possible for local citizens to earn cash while conserving forests. A certain coffee dealer has created standards for coffee cultivation that take environmental conservation into consideration, and in addition to supporting technical guidance, it selects producers in other countries and

makes purchases directly. Such efforts not only conserve local biodiversity, they are also useful in improving and stabilizing quality of life of the residents.

In addition, most marine product producers currently rely 100% on imports of raw materials for processed food because of a decline in domestic technology and problems with prices due to machinery and personnel costs, but a

certain marine product producer is making efforts to use some local fish. As a result, that producer is gaining the support of local consumers.

Figure 3-4-5 Policy for Action under the Japan Business and Biodiversity Partnership

- 1. Appreciate nature's gifts and aim for corporate activities in harmony with the natural environment.**
 - 1-1 Recognize the importance of biodiversity and nature's gifts (ecosystem services) and reflect them in corporate policy.
 - 1-2 Establish a corporate management vision and provide leadership to integrate biodiversity concerns.
- 2. Act from a global perspective on the biodiversity crisis.**
 - 2-1 Consider impacts on relevant ecosystems and local communities, both domestic and abroad, when setting out operational plans.
 - 2-2 Make an effort to ensure that both providers and users of genetic resources will benefit from their utilization.
- 3. Act voluntarily and steadily to contribute to biodiversity.**
 - 3-1 Make efforts to improve the identification and analysis of biodiversity impacts and improve business operations on biodiversity.
 - 3-2 Endeavor through the individual company's operations to contribute to substantial conservation of biodiversity and carefully consider implementation of trading or off-setting measures based on an economic assessment.
 - 3-3 As part of social responsibility activities, engage in biodiversity issues even if they are not directly linked to the operations of the company.
- 4. Promote corporate management for sustainable resource use.**
 - 4-1 Continuously proceed with not only your own business activities, but also conservation of resources and energy and the 3Rs (reduce, reuse, recycle) that focus on the life-cycles of products and services.
- 5. Create an industry lifestyle and culture that will learn from biodiversity.**
 - 5-1 Promote technical development learning from nature and traditional knowledge, and encourage innovation in lifestyle and culture.
 - 5-2 Promote the development and dissemination of technology that will contribute to the conservation of biodiversity.
 - 5-3 Make efforts to help restore biodiversity when operating in areas where nature has been negatively impacted.
- 6. Collaborate with relevant international and national organizations.**
 - 6-1 Promote collaboration by strengthening communication with NGOs, local governments, and educational, research and other relevant organizations.
 - 6-2 Strive to appropriately communicate and share information related to efforts to solve biodiversity problems.
- 7. Spearhead activities to build a society that will nurture biodiversity.**
 - 7-1 Actively carry out environmental education activities for employees in collaboration with local communities, NGOs, and other organizations.
 - 7-2 Raise societal awareness of the need to nurture biodiversity.

Source: Japan Business and Biodiversity Partnership Secretariat

Photo: Shade-grown coffee

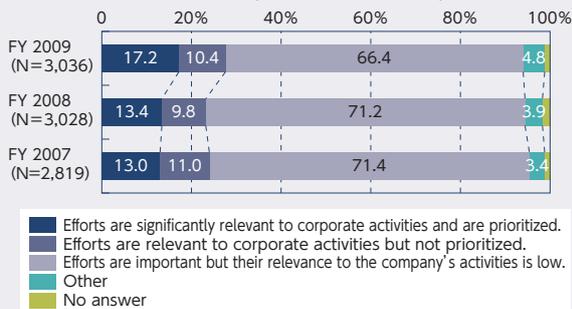


Photo: Processed food that used local fish

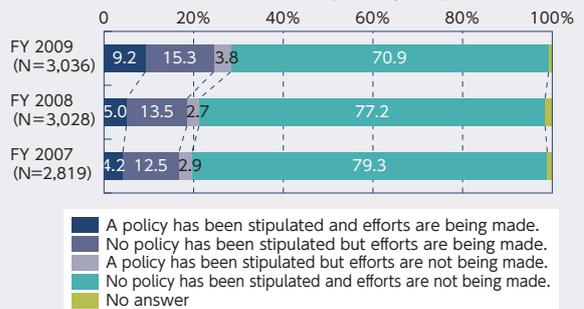


Figure 3-4-6 Efforts to Conserve Biodiversity through Corporate Activities

Efforts to conserve biodiversity, and the state of corporate activities



State of efforts to conserve biodiversity through corporate activities



Source: Ministry of the Environment's "Survey Results of Environmentally-Friendly Behavior"

3. Efforts by Households

In order to convert to a society and economy that take biodiversity into consideration, it is important for each of us individuals to aim for a lifestyle that takes biodiversity into consideration in our daily lives. Ministry of the Environment has released the three pillars of “feel biodiversity (feel the nature and living beings around you),” “protect biodiversity (participate in activities to protect living beings),” and “communicate information about biodiversity (tell others about biodiversity)” as hints for citizens when they make efforts for conservation of biodiversity and sustainable use. Ministry is also calling for people to make a “declaration of my actions,” which is to declare the actions that each individual will take from now on (Figure 3-4-7: Biodiversity “List of People’s Actions”). As of March 2011, 13,189 of those “declaration of my actions” had been collected. It is important for such efforts to be practiced in daily life.

Most importantly, 67% of Japan’s ecological footprint is generated by household consumption activities (Figure 3-4-8: Breakdown of Final Demand against Total Consumption Ecological Footprint in Japan), and from a consumer’s perspective choosing products and services that take biodiversity into consideration also leads to direct conservation of biodiversity. Although there are still few cases in which detailed information is shown about the impact on biodiversity caused by products and services that we use, in recent years efforts have been made to have third-party organizations certify sustainable wood and marine products.

As for wood products, based on the Law on Promoting Green Purchasing, since 2006 the government has been procuring timber and wood products that have been verified as legal and sustainable. The government has also been indicating, both domestically and to other countries, guidelines on methods for verifying the legality and sustainability of timber and wood products supplied within Japan. Forest certification serves as a reference when selecting timber and wood products that have been verified as legal and sustainable. Forest certification is a system led by the private sector under which third-party organizations certify whether forests are being appropriately managed from the perspectives of “whether laws and international agreements are being complied with” and “whether operations that take biodiversity into consideration are being conducted.” Timber produced from those forests is managed separately, labeled, and then distributed. There are various organizations for forest certification systems such as the Program for the Endorsement of Forest Certification Schemes (PEFC), the Forest Stewardship Council (FSC), and the Sustainable Green Ecosystem Council (SGEC). The land area of forests that have received forest certification is increasing, with 129 million hectares around the world certified by the FSC (as of May 2010; Figure 3-4-9: FSC Certified Forest Area Growth), and as of December 2010 there were 100 forests in Japan that had received certification by the SGEC, with a land area covering 864,000 ha.

As for marine products, certain rules have been stipulated for amounts and types of catches, time periods,

Figure 3-4-7 “List of People’s Actions” Related to Biodiversity

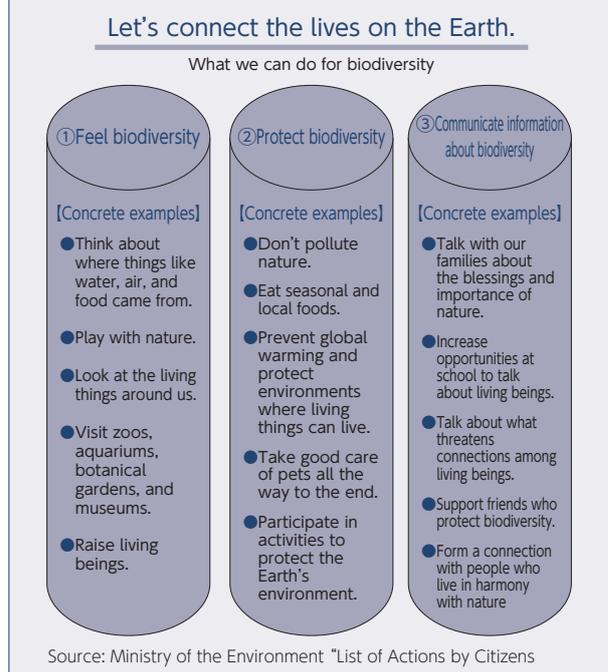


Figure 3-4-8 The Contribution of Each Sector of Final Demand to the Total Japanese Ecological Footprint of Consumption

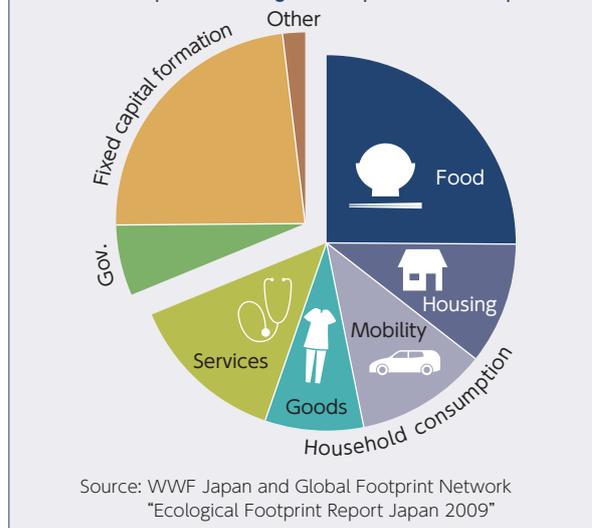
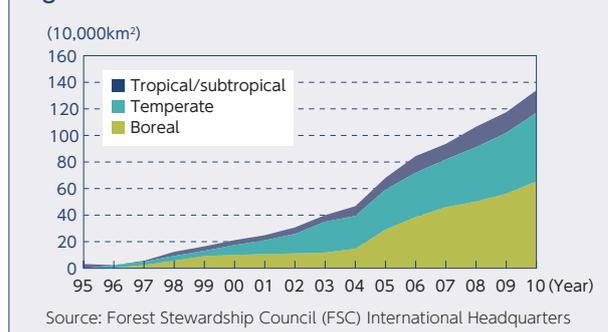
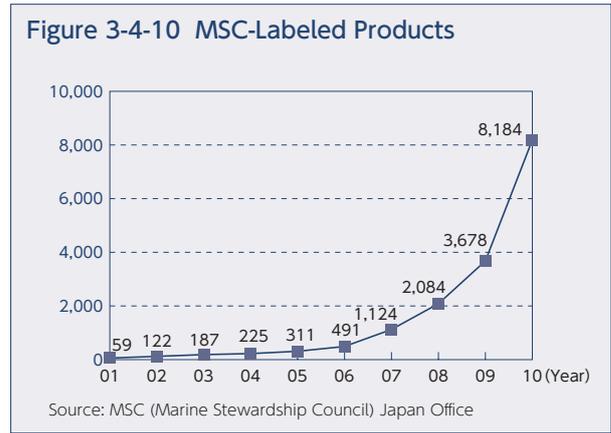


Figure 3-4-9 FSC-Certified Forest Area in the World.



and fishing methods. There are certification systems such as the Marine Stewardship Council (MSC) and Marine Eco-Label Japan (MEL Japan) as systems to have third-party organizations certify sustainable fishing industries that do not deplete fishing resources. Sales of products with the MSC label are expanding rapidly, and as of February 2011 there were more than 8,500 of such items and approximately 250 of such items are distributed in Japan (Figure 3-4-10: Number of MSC-Labeled Products).

The individual targets of the Aichi Targets indicate the importance of sustainable fishing of marine product resources and forestry and agriculture. In addition, activities by corporations and other businesses are supported by citizens' consumption, and in that sense choices by consumers have a significant ability to influence business activities. It is possible for us to cause business activities to change in a better direction through our individual selection of products and services that



take biodiversity and sustainability into consideration. In order to do so, it is necessary to have an interest in biodiversity and make efforts to gain knowledge required for choosing products.

Summary ~ Life in Harmony, into the Future ~

Prior to the holding of COP10, the Global Biodiversity Outlook 3 (GBO3) made public by the Secretariat of the Convention on Biological Diversity concluded that the 2010 Target for the Convention on Biological Diversity, which aimed at “a significant reduction of the current rate of biodiversity loss” had not been achieved, and it warned humans that if biodiversity loss continues as it has so far the Earth’s system would in the near future surpass its tipping point and the risk of dramatic biodiversity loss and the deterioration of ecosystem services would increase.

COP10 was an opportunity to discuss what humans should do in the current situation of degrading biodiversity so that the tipping point will not be crossed and dramatic biodiversity loss will be avoided. The slogan “Life in Harmony, into the Future” was decided upon to express coexistence of all living beings, including humans, into the future, and with more than 13,000 participants from parties to the convention, related international organizations and NGOs, the “Aichi Biodiversity Targets,” which are new world targets for the Convention on Biological Diversity (post-2010 targets) and the “Nagoya Protocol,” which is an international framework related to access and benefit sharing of genetic resources (ABS), were among the many decisions adopted before the conference closed.

As for the “Aichi Biodiversity Targets,” although each of the countries agreed on the point of “taking effective and urgent action to halt the loss of biodiversity,” there was a conflict of opinion between the EU, which strongly argued for inclusion of the phrase “stop loss of biodiversity by 2020,” and developing countries, which are considering future economic development and value feasibility, and this was a major point of contention. As for the “Nagoya Protocol,” there were major opinion gaps between developing countries and developed countries on many points of contention such as retroactive application of the protocol, handling protein and oxygen that arise from genetic resources, and a mechanism by which user countries would check whether users of genetic resources are using the genetic resources according to the rules of

the countries that provided the genetic resources. As of October 28th, when only one day of the conference remained, agreement had not been reached on most of the points of contention. However, because parties to the convention did not insist on their own countries’ interests and instead made compromises for the sake of “global benefits” in order to stop the biodiversity loss that is now on the verge of its tipping point, on the last day it was possible to adopt things such as the “Aichi Biodiversity Targets” and the “Nagoya Protocol” on many topics.

From now until COP11, which will be held in India in 2012, Japan as the Presidency must take the lead in efforts for various matters decided, such as the “Aichi Biodiversity Targets” and the “Nagoya Protocol.” As international contributions, Japan will begin things such as creation and operation of the Japan Biodiversity Fund to assist developing countries, promotion of the “Satoyama Initiative” to promote sustainable use of secondary natural environments, and support for establishing the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). As for domestic measures, Japan will begin revision of its national biodiversity strategy, and work to improve measures and policies by promoting expansion of national parks and other protected areas and measures and policies for conserving endangered species.

The Aichi Biodiversity Targets also require efforts by each of the main constituents, such as corporations, businesses, local and regional governments, and NGOs, and efforts by society as a whole are essential. At the United Nations General Assembly held in December 2010, it was decided to designate the ten-year period from 2011 to 2020 as the “United Nations Decade on Biodiversity,” and from now on it will be necessary for international society to cooperate in moving forward with efforts aimed at conserving biodiversity. However, efforts by each of the domestic main constituents will also become increasingly important. It is necessary for each of the main constituents and individuals to steadily turn the “action plan that we can take now to stop biodiversity loss” into actions.