

# Guidelines

First  
Edition

for Private Sector  
Engagement in

# Biodiversity



For the Promotion of Voluntary Actions by Business Entities  
for the Conservation and Sustainable Use of Biodiversity



Ministry of the Environment

**JAPAN**



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# Executive Summary

## 1. Introduction

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At first glance, “biological diversity (biodiversity)” and “private sector engagement” may seem to be an odd combination. However, it has become recognized that the conservation and sustainable use of biodiversity cannot be achieved without the participation of the private sector, including corporations. At the eighth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 8) in 2006, a Decision was adopted for the first time that addressed the importance of private sector engagement.

One factor leading to the increased attention given to this issue was the release in 2005 of the results of the United Nations’ “Millennium Ecosystem Assessment.” Key findings of this report included that the well-being of human livelihoods depends greatly on ecosystem services and on the biodiversity that forms their basis; and that biodiversity has been degraded over the past 50 years to such an extent that it is almost unable to provide these services, and a concerted change in policies is needed for the recovery of biodiversity. The concept of “ecosystem services,” first introduced in this report, has sparked various efforts by many different actors that depend on these kinds of services.

“Biodiversity,” at its heart, reflects the fact that the wide variety of living things, including humans, exist in interrelationship to one another. The richness and security of our lives would not be possible without the benefits provided by nature (ecosystem services), including water, oxygen, food, fiber, wood, fuel, medicines, a stable climate, protection from natural disasters, and even the scenery that soothes our souls, or new technologies inspired by the workings of nature.

Nevertheless, the situation related to biodiversity is exceedingly grave: in recent years, the world has lost an area of forest equivalent in size to one-fifth of Japan’s land mass each year; also, as a result of human activities over the past several hundred years, the pace of species extinctions has risen to 1000 times the previous rate.

We, the Japanese people, depend to a great extent on the resources of foreign countries, as we import some 60% of our food, and about 80% of the wood we consume. For this kind of reason, if the large-scale and rapid loss of biodiversity continues, there are likely to be major impacts on our lives.

## 2. Purpose of these guidelines

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Despite its importance, the concept of “biodiversity” is nevertheless an abstract one, and since the “conservation and sustainable use” of biodiversity deals with such a wide range of matters, the particular actions to be taken by the different kinds of business

entities, and their relationships with biodiversity, are truly varied, in keeping with the wide variety of business activities and their scale. These guidelines therefore summarize basic information and approaches for the conservation and sustainable use of biodiversity applicable to the wide range of business entities\* in addressing these issues.

\* Here, “business entities” designates companies, unions, and other legal entities, as well as sole proprietorships run by individuals.

### 3. Public sector engagement and biodiversity

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Ecosystem services, and the biological resources resulting from them, can be regenerated and used sustainably only if they are utilized suitably. In order to continue to enjoy these benefits in a sustainable way, we must initiate swift action to create a “society in harmony with nature;” businesses, public entities, local public corporations, as well as the nation and every one of its citizens, must each cooperate and work from their own standpoints to prevent the loss of biological diversity.

Businesses have the important role of supplying society with these benefits of nature in the form of goods and services. Even if they do not directly involve the handling of biological resources, most of the activities of business entities benefit indirectly from biodiversity, or provide some sort of impact on biodiversity. For businesses, (in cooperation with various other actors, including consumers) to work for the conservation and sustainable use of biodiversity will not only help speed up the realization by society as a whole of a “society in harmony with nature,” but doing so is also necessary for business entities to be able to sustain their own activities into the future.

In 2006, at the COP 8 meeting held in Brazil, a Decision was adopted for the first time that addressed the importance of private sector engagement in biodiversity. This Decision, while acknowledging that participation by private-sector entities in biodiversity has been lagging, noted some of the types of contributions that private enterprises can be expected to make:

- (1) Because private enterprises have considerable influence on biodiversity, model efforts that they can adopt and promote will make significant contributions to stemming the loss of biodiversity;
- (2) As private enterprises have significant influence on politics and public opinion, they hold a key to the spread of biodiversity conservation and sustainable use;
- (3) Private enterprises have a wealth of knowledge and technologies relevant to biodiversity, as well as having general management, research and development, and communications capabilities, and thus can be expected to contribute to the implementation of biodiversity conservation and sustainable use.

Biodiversity was raised as an important topic at the meetings of the G8 Environment Ministers in 2007 and 2008, which pointed out the need to assess the economic impacts



that result from biodiversity loss, as well as the need to strengthen policies that engage industry.

Private sector engagement in biodiversity was also a topic for the 9<sup>th</sup> Conference of the Parties meeting held in Germany in 2008, and will also be important for the 10<sup>th</sup> Conference of the Parties meeting to be held in Nagoya in 2010.

## **4. What actions should be taken by private sector?**

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### **(1) Understanding how business activities are related to biodiversity**

In order to clarify what should be done, businesses should first grasp how their own activities directly and indirectly (i) depend upon the benefits of biodiversity, and (ii) have impacts on biodiversity.

### **(2) Examining and undertaking necessary measures**

Based on an understanding of the relationship that one's business has with biodiversity, it is important to examine what measures should be undertaken in order that (i) the business can be sustained and continue to receive the benefits of biodiversity into the future, and (ii) to reduce any negative impacts that the business has on biodiversity. While measures should generally ideally be taken based on their relative priority, in order to achieve steady results, it may be best to take a phased approach based on a consideration of the feasibility of different measures.

### **(3) Putting in place systems to promote and sustain related measures**

It is recommended to establish systems to promote and sustain related measures, as appropriate.

### **(4) Investigating how to expand the scope of measures by cooperating with others**

Businesses should consider progressively expanding the scope of their biodiversity measures, including through measures taken in cooperation with suppliers and others.

## **5. Approaches for action**

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### **(1) Avoiding or minimizing impacts on biodiversity**

When business activities have impacts on biodiversity, it is necessary to assess and implement measures that could avoid or minimize such impacts.

### **(2) Adopting precautionary and adaptive measures**

The mechanisms sustaining biodiversity in many ways remain unclear, and loss of

biodiversity may be difficult to restore.

When business activities may lead to serious and irreversible impacts on biodiversity, even if scientific proof is incomplete, measures should not be delayed, and it is vital to adopt a policy of undertaking preventative measures in keeping with the most cautious approach (this is known as the “precautionary approach”).

In addition, it is important to conduct ongoing monitoring of business activities, and to adopt an approach allowing for flexible and timely revisions of plans in keeping with the results of the monitoring (this is known as the “adaptive approach”).

### **(3) Maintaining a long-term perspective**

It is possible for biodiversity to provide many benefits sustainably and over the long term, if its components are utilized in a sustainable manner. Also, because of the wide range of factors and complex interrelationships influencing biodiversity, impacts may become apparent only gradually or after a relatively long period of time. For these reasons, it is necessary for measures to be based on a long-term, and not short-term, perspective.

## **6. Points to consider**

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In evaluating and undertaking new measures, it is useful to take into account the following:

- Because the value of biodiversity is closely linked to specific locales, seek to understand the full situation affecting the particular sites involved.
- Maintain a regional, or even global, perspective.
- Utilize wide-ranging sources of knowledge and methods, through collaboration with other relevant actors, including nongovernmental and nonprofit organizations, local residents, researchers, and national and public organizations.
- Give consideration to the traditional culture of the local community.
- Seek linkages with other environmental measures, including measures to address climate change.
- Take measures that involve cooperation among businesses at all points along the supply chain.
- Before initiating specific new business activities, assess their impacts on biodiversity.
- Undertake measures consistent with the scale and other characteristics of each business entity.

## **7. Structure of the guidelines**

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Section 1: A shared understanding of the situation

Section 2: Policies

References: Implementation advices

## 8. How these guidelines were developed

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These guidelines were produced by the committee as a result of its discussions involving academic experts, business representatives and NGOs, as well as other exchanges of views, and a public comment process.

## 9. Conclusion

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In present day Japan, corporations and other private-sector organizations not only engage in profit-making activities, but also serve as a foundation supporting a mature social economy. Recently, there are an increasing number of private entities, including corporations, which are proactively taking measures to achieve the conservation and sustainable use of biodiversity.

The conservation of biodiversity, and the sustainable use of the ecosystem services that are based on biodiversity, always entails risks and opportunities. For example, additional cost would be involved in evaluating various sources of raw materials in terms of their effects on biodiversity, but doing so would also reduce the risks related to sourcing the materials; this could in turn be expected to contribute to more stable operations. In this way, measures related to biodiversity can be seen as crucial to resource strategies.

While their numbers may not yet be great, businesses that are taking such measures are increasing, with most of them seeing results.

Due to its limited resources and land area, those of us living in Japan in particular should give more serious consideration to the sustainable use of “ecosystem services.” We could even say that we are at a crossroads, where we need to rethink what our socioeconomic situation should be 100 or 200 years from now, and the biodiversity issue may be the spur that leads us to act. It goes without saying that any such transformation of our socioeconomic structure would require not only actions by business entities, but also of consumers, the national government, local public corporations, NGOs and NPOs, and all other actors.

Biodiversity, and its associated benefits, supports our society. One hundred years from now, most of us reading this will most likely no longer be living. Nevertheless, the wealth and well-being of the people of future generations – and whether we can guarantee that there will be sound and sustained business operations – will depend on the decisions and actions taken by our generation.

We hope that these guidelines can be utilized so that business entities can continue to prosper in the future, and so that they may play a role in securing the conservation and sustainable use of biodiversity, as these are inextricably linked.

◆ **Overview of the guidelines for private sector engagement in biodiversity**

**Biodiversity – supporting lives and livelihoods.**

Since the birth of our planet, a wide variety of living things, including humans, have emerged over a long period of time, all living in close interconnection (this is “biodiversity”).

The benefits associated with biodiversity (“ecosystem services”) support our lives and livelihoods.

**[Examples of biodiversity benefits]**

- Provision of rice, vegetables, wood, fish, fresh water, etc.
- Creating local landscapes with mountains, rivers and seas, and unique local cultures.
- Deriving technological innovations inspired by nature’s mechanisms.

**[Examples of biodiversity status]**

- ☀ Due to human impacts, the extinction rate of species has risen 1000-fold over the past several hundred years.
- ☀ Worldwide, some 73,000 km<sup>2</sup> (about 1/5 of Japan’s land area) of forest ecosystems is lost each year.



**In order to continue to benefit from biodiversity, each of us must take cooperative measures together.**

In order for all of us to continue to benefit from biodiversity, all of us that are part of society will need to conserve biodiversity, and utilize it in sustainable manner that does not exhaust its benefits. Businesses, as members of society, can be expected to play an important role.

**[Expected benefits from biodiversity-related measures]**

Materials procurement based on a consideration of biodiversity can support stable operations

The value of a business’s products and brand would be expected to increase

New markets will emerge, such as for biodiversity-conserving technologies

Biodiversity-related measures will help solve other environmental problems, such as mitigating global warming

**Key domestic and international events**

- ▶ **Decision on private sector engagement** (COP8 - March 2006, Brazil)  
Decision adopted regarding the importance and promotion of private sector engagement for the conservation and sustainable use of biodiversity.
- ▶ **G8 Environment Ministers Meeting** (May 2008, Kobe City, Hyogo Prefecture)  
Adoption of the “Kobe Call for Action for Biodiversity.”
- ▶ **Basic Act on Biodiversity** (June 2008)  
Basic law aiming to realize a society in harmony with nature, including promotion of policies for biodiversity.
- ▶ **Tenth meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10)** (October, 2010 - Nagoya City, Aichi Prefecture, Japan)  
Tenth conference bringing together the 191 parties to this convention. Private sector engagement is expected to be a major theme at COP10.

## Expectations for business entities

Business entities, having connections with many other actors including consumers, are expected to contribute to the realization of a sustainable society in harmony with nature, through the active adoption of measures for the conservation and sustainable use of biodiversity, and by shifting consumer lifestyles through the provision of goods and services that give consideration to biodiversity.

### Basic approaches for businesses in undertaking voluntary measures for biodiversity

#### Rationales

- (1) Conservation of biodiversity
- (2) Sustainable use of the components of biodiversity

#### Guiding Approaches

- (1) Work to assess the interrelationships between business activities and biodiversity (in terms of both benefits and impacts).
- (2) Work to reduce impacts on biodiversity and work for its sustainable use, through business activities that give due consideration to biodiversity.
- (3) Work to put in place systems that support actions.

#### Taking Actions

- (1) Indicate a policy to take action for the conservation of biodiversity and its sustainable use.
- (2) Take action in order of priority, giving due consideration also to their feasibility.

#### Fundamental Principles

(1) Avoid or minimize impacts on biodiversity

(2) Take precautionary and adaptive approaches\*

(3) Adopt a long-term perspective

#### Perspectives to consider

- (i) Focusing on Localities, Thinking Regionally and Globally
- (ii) Partnering with Diverse Stakeholders and Considering Their Views
- (iii) Social Contributions
- (iv) Linkages with Global Warming and Other Environmental Measures
- (v) Considering the Supply Chain
- (vi) Verifying Impacts on Biodiversity
- (vii) Taking Actions Appropriate to the Size and Characteristics of the Business Entity

Reference 1: Examples of procedures for implementing actions

Reference 2: Examples of assessing interrelationships between business entities and biodiversity

Reference 3: Actions by business entities in key contexts

Reference 4: Social contribution efforts

Reference 5: Concrete examples

Reference 6: Recent key documents related to biodiversity

Reference 7: Reference information for this document

Reference 8: Summary of Japanese laws related to biodiversity

#### Notes:

- \* Precautionary approaches: Preventive measures taken without delay, even in the absence of complete scientific evidence, in cases where there may be large-scale and irreversible impacts on biodiversity.
- \* Adaptive approaches: Measures based on the ongoing monitoring of business activities and other factors, which are adjusted flexibly based on the monitoring results.

## ◆ Committee on Biodiversity Private Sector Activities Guidelines – Overview

### 1. Committee Members

(Alphabetical order, \* = Chairperson; honorific titles omitted.)

Naoki ADACHI	CEO of Response Ability, Inc.
Yasushi HIBI	Director, Conservation International – Japan
Arata IZAWA	General Manager of Kyoto Office, AMITA Institute for Sustainable Economies Co., Ltd.
Naoki KACHI*	Professor, Graduate School of Science and Engineering, Tokyo Metropolitan University
Kazuhiko MAKINO	Manager of CSR Promotion Department, Daiwa Securities Group Inc.
Kanna MITSUTA	Former Deputy Director, Global Environmental Forum
Fumiaki NAGAISHI	Adjunct Lecturer, Faculty of Agriculture, Tokyo University of Agriculture and Technology
Noriko TAKEMOTO	Professor by Special Appointment, Graduate School of Life Sciences, Tohoku University
Hidekazu TANAKA	General Manager, Environmental Solution Department, Forest & Environment Division, Sumitomo Forestry Co., Ltd.
Masayasu TANIGUCHI	Member of the Planning Section of Nippon Keidanren Committee on Nature Conservation; General Manager, Environmental Management Group, CSR Department, Sekisui Chemical Co., Ltd.
Yoriyuki YAMADA	Manager, Office of Global Environment, Environmental Engineering Division, Kajima Corporation
Masahito YOSHIDA	Chair of Japan Committee for IUCN; Professor, Edogawa University

### 2. Activities of the Committee on Biodiversity Private Sector Activities Guideline

Date	Title	Agenda
November 10, 2008	1 <sup>st</sup> Session	Review of outline of the guidelines
December 8, 2008	2 <sup>nd</sup> Session	Discussion of preliminary draft of the guidelines
February 3, 2009	3 <sup>rd</sup> Session	Discussion of draft guidelines (as prepared by secretariat)
March 24, 2009	4 <sup>th</sup> Session	Discussion of draft guidelines
May 13 through June 12, 2009	Public Comment	Public comment period for the draft guidelines
July 24, 2009	5 <sup>th</sup> Session	Finalization of guidelines

# Introduction

## ○ **Background: Development of These Guidelines**

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The long history of our planet has brought forth a wide variety of living things, unique in themselves, yet closely interlinked. The benefits (services) that spring from Earth's biological diversity (now commonly known as "biodiversity") have been handed down to us from previous generations, and we must ensure that they are also passed along to future generations. Because Japan is highly dependent on the world's resources, we must consider not only the biodiversity within our own country, but also that of other nations.

In order to conserve biodiversity and build a "society in harmony with nature" that passes along to future generations the blessings of nature, it will be necessary for a wide range of actors — including citizens, businesses and other private organizations, local governments, and the national government — to undertake actions for the conservation of biodiversity and its sustainable utilization. The creation of "a society in harmony with nature" — like the creation of a "low-carbon society" that addresses global warming, and a "sound material-cycle society" that reduces burdens on the environment due to waste and resource use — is closely connected to building a "sustainable society." In particular, businesses have important roles to play as members of society, due to the connections that businesses and their activities have to biodiversity both within Japan and overseas, as well as due to the influence they have on the relationship between biodiversity and citizens, through the goods and services they provide to consumers.

These Guidelines constitute one of a number of measures developed by the Ministry of the Environment to deepen understanding of biodiversity among citizens and to promote the involvement of, and cooperation among, a wide range of actors — including national and local government agencies, businesses, citizens and private organizations — in activities related to biodiversity. These policies are built upon Decision VIII/17 by the Convention on Biological Diversity regarding private sector engagement, Japan's Basic Act on Biodiversity, and the Third National Biodiversity Strategy of Japan. Examples of other measures being planned include the production of a handbook for use by local agencies in developing regional biodiversity strategies, and the compiling of a list of actions that citizens can take.

Internationally, expectations are growing for engagement by private business entities in biodiversity-related activities, as reflected in the adoption for the first time of a Decision concerning private sector engagement at the eighth meeting of the Conference of the Parties (COP 8) to the Convention on Biological Diversity.

## ○ Goal of These Guidelines

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The goal of these Guidelines is to contribute to the conservation and sustainable use of biodiversity, through promoting engagement by business entities in biodiversity-related activities. It is hoped that such activities can also contribute to the creation of a society that is in harmony with nature and which can enable future generations to enjoy the benefits (services) of biodiversity.

Specifically, in light of the fact that biodiversity-related awareness and actions on the part of business entities are still limited, this first edition of the Guidelines aims to contribute to raising awareness concerning biodiversity conservation and sustainable use; to contribute to businesses adopting a forward-looking attitude and positively undertaking biodiversity-related activities; and also to contribute to the development of cooperative activities among a wide range of actors, including business entities.

These Guidelines are not a regulatory document specifying compulsory provisions of a legal nature; rather, they are intended to provide guidance relevant to voluntary activities by business entities, in accordance with responsibilities prescribed in the Basic Act on Biodiversity and other responsibilities.

The Convention on Biological Diversity has three objectives, namely (1) the conservation of biodiversity, (2) the sustainable use of its components, and (3) the fair and equitable sharing of benefits arising out of the utilization of genetic resources; in relation to discussions within the Convention on Biological Diversity related to “access and benefit sharing (ABS) for genetic resources,” related to the third objective of the Convention, please refer to the “Guidelines on Access to Genetic Resources For Users in Japan” published by the Japan Bioindustry Association and the Ministry of Economy, Trade and Industry (METI).

## ○ The Content and Nature of These Guidelines

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These Guidelines are general guidelines applicable to many kinds of business entities, and are comprised of “Section I: A Shared Understanding of the Situation,” “Section II: Policies,” and “References: Implementation Advice.” “Section I: A Shared Understanding of the Situation” explains the importance of biodiversity and how business entities are related to biodiversity. “Section II: Policies” provides guidance for activities, and offers information related to ways of thinking about activities. “References: Implementation Advice” is a compilation of information about actions by business entities, including concrete examples organized by key contexts, providing a useful reference for the actual implementation of actions.



## ○ **Review of the Guidelines**

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This first edition of these Guidelines represents an “initial step” reflecting current knowledge; it is planned that the Guidelines will be further developed (revised) in a phased manner in the future, in response to changes in the status of biodiversity and progress in international efforts, growth in knowledge and understanding within society concerning biodiversity, and increasing levels of advancement in the actions and awareness on the part of businesses.

## ○ **Intended Audience for These Guidelines**

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Among the various entities relevant to biodiversity conservation (business entities, the general public, private organizations, local governmental bodies, and the national government), these Guidelines specifically target business entities. In particular, the Guidelines contain information useful for those responsible for actual business operations and who are beginning to contemplate initial biodiversity-related actions. An Executive Summary is provided at the beginning, which summarizes key information for those at the management level. The content is also useful for reevaluating actions in the case of those business entities that have already been conducting biodiversity-related actions.

Please note that for the purposes of these Guidelines, the terms “businesses” or “business entities” are used interchangeably to refer to a broad range of actors, including large companies, small and medium enterprises, all types of corporate entities including unions and associations, and sole proprietorships. (Similarly, terms such as “measures,” “actions,” and “efforts” are used interchangeably to refer to biodiversity-related activities that business entities can undertake.)

## ○ **Effective Utilization**

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We hope that these Guidelines will provide basic knowledge and information to business entities initiating biodiversity-related actions, and that this document will serve as a reference that will assist the effective and efficient implementation of such efforts.

In addition, for those businesses that are already undertaking biodiversity-related actions, we hope that the perspectives presented in these Guidelines can serve as a catalyst for such businesses to review and reevaluate their activities and pursue even more appropriate actions.

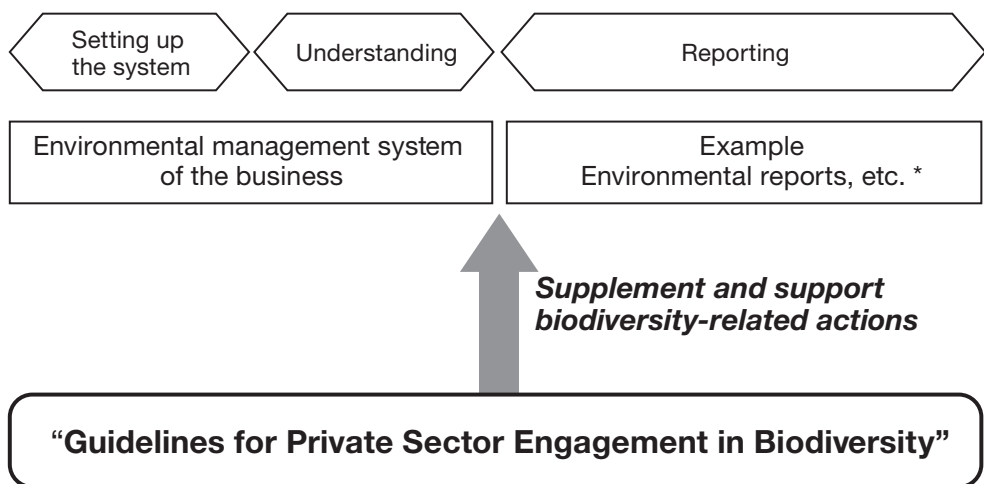
These Guidelines are intended for business entities that have a wide variety of characteristics, in terms of their size, industry type, base of operations, nature of activities, organizational structure, specifics of operations, location of activities (domestic or foreign),

etc. Because the circumstances for each business entity can be so different, it is hoped that these Guidelines will be used in a manner that takes best advantage of the specific circumstances of each business, and it is anticipated that certain businesses may utilize only portions of the entire document.

We hope that these Guidelines will also be useful for non-business entities (such as local governmental organizations, researchers, non-governmental or non-profit organizations) working in collaboration with business entities, including by helping deepen awareness of the actions that are being taken by businesses.

## ○ **Relationship with Environmental Management Systems of Businesses**

As shown in the diagram below, these Guidelines for biodiversity-related actions are intended to supplement and support the environmental management systems of businesses.



\* Reference document: Environmental Reporting Guidelines (Fiscal Year 2007 version)  
(Ministry of the Environment, Government of Japan, 2007)

## Section I

# A Shared Understanding of the Situation

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Biodiversity is the source of many valuable things – even the necessities of human life. Nevertheless, human activities have significant impacts on biodiversity. In order for future generations to continue to receive the benefits (services) of biodiversity, it will be necessary for actors of all kinds to work for the conservation of biodiversity and its sustainable use. Business entities are actors that have important involvements with biodiversity, and they need to undertake measures for the conservation and sustainable use of biodiversity.

## Chapter 1: What is Biodiversity?

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### Origin of the Earth and the Birth of Life

The Earth was formed some 4.6 billion years ago – and it is thought that the first primitive form of life arose from organic matter in a primordial sea some 4 billion years ago. While it is believed that there was no oxygen in the Earth's early atmosphere, with the emergence of photosynthesizing organisms such as blue-green algae, oxygen in the atmosphere began to increase.

Thanks to this oxygen, an ozone layer surrounding the Earth was formed, filtering out harmful intense ultraviolet radiation from the Sun; this existing composition of the atmosphere led to the maintenance of a stable climate, creating an environment that enabled life to emerge on the land. Plants also moved onto the land, creating primeval forests; animals also filled this environment, resulting in the formation of land-based ecosystems. In this manner, the atmosphere and soils of the Earth have been formed by countless lives and their interconnections; each generation of living things evolved in the environments created by the preceding generation of living things, one after another.

During this time, a variety of changes occurred in the environment. Species that could not adapt themselves to such changes died out, while many other species emerged, resulting in the current estimated 30 million species of organisms and their interlinked web of life.

The biodiversity around us, created and nurtured over the long history of the Earth, is something irreplaceable — and all the various living things can be said to have value in their very existence itself.

### Mass Extinctions and Large-scale Alteration of Ecosystems

We are currently living in what has been called the age of the “Sixth Mass Extinction.” Since the emergence of life on Earth, there have been five previous episodes in which large numbers of organisms became extinct. However, the pace of extinctions in the current mass extinction event is even greater, and human activities are believed to be the main cause.

According to the “Millennium Ecosystem Assessment”<sup>1</sup>, humans have accelerated the species extinction rate by a factor of 1,000 over the last several hundred years. It is also predicted that 10 to 30% of mammal, bird,

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<sup>1</sup> Millennium Ecosystem Assessment (MA) is a large-scale comprehensive assessment of ecosystems, which was called for by the United Nations and conducted between 2001 and 2005 with the participation of 1,360 experts from 95 countries. It assessed the types of impacts that changes in ecosystems have on the well-being of human life, and advocated efforts to prevent degradation of ecosystem functions. Please see p. 126 for more details.

and amphibian species are currently at a risk of extinction.

Human beings have altered ecosystems more rapidly and drastically over the past 50 years than during any comparable time period in human history. According to the Millennium Ecosystem Assessment, it is estimated that about 40% of total forest area has been lost over the past three centuries.

Modern humans, the species *Homo sapiens*, which emerged only some 300,000 years ago, very recently compared to the long, four-billion year history of life. Humans, which are merely one species, are unaware of the enormous power they wield, yet have significant impacts on the complex world of living organisms.

### What is Biodiversity?

Under the Convention on Biological Diversity, biodiversity is defined as the variability among all living organisms; there are three levels of diversity: diversity within species (genetic diversity), diversity between species (species diversity), and diversity of ecosystems. Understood simply, nature is unique to each place, with each having characteristic living things, which together form the web of life.

### Three Crises of Biodiversity in Japan

Biodiversity in Japan is facing the following three ongoing crises:

- **The first crisis:** Decrease and extinction in species directly brought about by human activities or development, or reduction and loss of habitats through destruction, fragmentation, and deterioration of ecosystems
- **The second crisis:** Changes in environmental quality in the Satoyama landscape, decreases in species, and changes to habitats due to reduced or discontinued human engagement with nature, accompanying changes in society and the economy including changes in lifestyles and industrial structure and decreases in population
- **The third crisis:** Disturbances to ecosystems caused by artificially-introduced factors such as alien species

In addition to these three crises, impacts due to increased global warming have been seriously affecting global biodiversity. It is predicted that global warming will cause various problems, including the extinction of many species and the disruption of fragile ecosystems. Global warming is a grave threat to biodiversity that cannot be escaped.

**i** For reference material on the current status of biodiversity in Japan See Reference 7: "Reference Information for This Document" 1. (1) The Structure of the Biodiversity Crisis in Japan (p.129).

## ◆ What is Biodiversity?

### Diversity of Ecosystems

**There are different types of natural areas around the globe and in specific locations (forests, wetlands, tidelands, coral reefs, rivers and streams, etc.)**

#### Examples of Current Circumstances

- ▶ Forested areas (some 4 billion hectares) currently account for roughly 10% of Earth's surface area (about 51 billion hectares) and roughly 30% of total land area (about 15 billion hectares).<sup>1</sup> Areas of forest, one of the major ecosystem types, decreased by about 40% during the past 300 years<sup>2</sup>, and forests (tropical forests in particular) are continually decreasing by some 12.90 million hectares per year.<sup>1</sup> When the areas of forest that are increasing (due to planting, restoration of vegetation, and natural recovery of forests) is subtracted, the overall decrease in forest area is about 7.30 million hectares per year (approximately one-fifth of Japan's total land area).<sup>1</sup> (1: The Global Forest Resource Assessment by the Food and Agriculture Organization of the United Nations (FAO), 2: Millennium Ecosystem Assessment)
- The reasons noted are conversion to farmland including plantation development, increase of nontraditional slash-and-burn agriculture, overexploitation of fuel wood, forest fires and illegal logging.
- ▶ In ocean ecosystems, about half of the marine fish stocks for which information is available are fully exploited. The fish catch is no longer expected to increase. It is reported that fish resources amounting to one quarter of total marine fish stocks are either overexploited or significantly depleted. (Source: Millennium Ecosystem Assessment)
- ▶ In Japan, the area of wetlands has decreased by more than 60% (about 80,000 hectares) from the Meiji and Taisho Periods (1868-1926) to the present day. The area of tidal flats has decreased by about 40% between 1945 and 1994.

### Diversity of Species

**Various types of living things live and grow around the globe and in specific locations.**

#### Examples of the Scale of Human Impacts

- ▶ In less than 100 years, the 60 million bison estimated to exist in the early 19th century had decreased dramatically to a mere one thousand (1/60,000 of the number in the 19th century).
- ▶ Passenger pigeons were estimated to number 5 billion early in the 19th century. Due to excessive hunting, they were extinguished early in the 20th century, when the last of the species died.
- ▶ Populations of Atlantic cod off the east coast of the island of Newfoundland in Canada collapsed and rapidly decreased in number in 1992. The decrease is thought to be due to human fishing activities. (Source: Millennium Ecosystem Assessment)
- ▶ As far as vertebrates are concerned, Japan has already lost at least 21 wild species, including the Japanese wolf, Japanese crested ibis (*Nipponia nippon*) and Ogasawara Islands wood pigeon (*Columba versicolor*). The Red List issued by the Ministry of the Environment, which lists species of threatened wildlife, classifies more than 30% of reptiles, amphibians, and brackish and freshwater fishes, more than 20% of mammals and vascular plants, and more than 10% of birds living in Japan as threatened species.

### Genetic Diversity

**There are genetic differences even within a given species.**

#### Examples of Genetic Diversity

- ▶ The difference in the luminous cycle of *Genji-botaru* (Japanese indigenous fireflies) between the west and east sides of the Central Mountain Area.
- ▶ *Medaka* (Japanese killifish) in Japan are genetically divided into northern and southern Japan groups. The latter has nine regional types. This genetic variation was formed over a period of several tens of thousands or millions years, but there is a concern over genetic disruption due to a recent increase stocking of the species in locations across Japan.

It is believed that when an assemblage of species is genetically diverse, it will have a higher probability of survival in case of changes to the environment. On the other hand, a decrease in genetic diversity of a species assemblage may lower its capacity to adapt to environmental changes, such as in cases of the spread of disease.

## Our Livelihoods and Biodiversity

Mass extinction and the large-scale alteration of ecosystems are not something that are happening in some far corner of the world and which are unrelated to our lives. Things that are indispensable to our daily life — such as the bread, fruit, fish and meat we eat every day, the houses we live in, and timber to make paper — are provided by nature. Because we, the people of Japan, import some 60% of our food and about 80% of the timber we use from overseas, our lives depend on resources from overseas.

The atmosphere that is indispensable to our lives is also produced by the Earth's plants, — and naturally knows no national boundaries. The water we use is not limited to that which is supplied through the forests and rivers of Japan. The agricultural products we import are grown using water resources overseas.

Furthermore, biodiversity also nurtures the cultures, cuisines, traditional handicrafts and cultural performances of different places. Our livelihoods are also protected by healthy ecosystems, including forests that provide services to prevent landslides and soil erosion.

No matter how much our scientific technology progresses, we cannot live without the benefits of nature, including mountains, forests and oceans.

Although we may not be able to directly see the biodiversity of far-off places, the loss of the biodiversity we depend on, whether it is near or far, threatens our livelihoods.

## Biodiversity as a Global Environmental Issue

Biodiversity is a global environmental issue, caused by production activities that exploit resources, such as over-cultivation and overgrazing to support the livelihoods of local residents, and by socioeconomic activities based on mass production, mass consumption, and mass waste disposal in faraway places.

Against the backdrop of population increase and economic growth across the world in the future, biodiversity may be further degraded globally.

If measures to address the biodiversity issue are not taken, various issues such as water shortages, food crises and poverty may worsen and undermine the foundations of human survival.

It is said that on Easter Island, crop harvests decreased partly due to stress on biodiversity, and as a result, the island fell into constant warring over depleting resources, causing the civilization to collapse (see p.135). This may have happened due to the island's small size. Since the world is becoming increasingly integrated and there is no place other than the Earth where humans can live, we modern humans who are observing the global

degradation of biodiversity and resources limits may be similar to those living on a small island.

Human beings have been accumulating scientific knowledge on biodiversity. The natural world and the world of biodiversity, however, depend on a complex balance of factors. In addition, there are many things humans still do not know.

Biodiversity is often compared to a flying airplane. An airplane may not crash if a few rivets that hold its plates fall off. But if the airplane continues to lose its parts, some day, it will break into pieces in the air and then crash. If the loss of biodiversity continues, the Earth's healthy material circulation based on biodiversity may collapse irreversibly when it passes a certain threshold. The problem is that no one knows where the threshold of collapse is.

The loss of biodiversity will naturally result in the collapse of civilization and significant impacts on us, human beings. Humans will always be just one of the living species that comprise biodiversity. We must avoid the decline of humans that may result from environmental degradation caused by we human beings ourselves.

The issue of biodiversity is something human beings have to face for the next several decades or centuries. To solve the issue, we may be forced to review how the current economic society functions. But we have already become aware of the issue of biodiversity. We have a will to tackle this challenge no matter how difficult it is. It is not impossible to overcome this issue by taking actions one by one, even if they are small steps.

The Millennium Ecosystem Assessment presented several scenarios of the situation in 2050 based on different approaches to ecosystem management and the progress of globalization. It also stated that it will be possible to restore the degradation of the globe's ecosystems by implementing precautionary and adaptive approaches and addressing socioeconomic disparities.

We must, and we can, move toward a sustainable society so that we can pass on the benefits of biodiversity that humanity depends on to future generations, rather than having the present generation deplete them.

### **To Protect Biodiversity**

In order to build a society in which present and future generations can continue to enjoy the benefits of biodiversity, it is important to keep in mind two viewpoints: the conservation of biodiversity, and the sustainable use of biodiversity.

Biodiversity conservation means maintaining differences among various ecosystems or species, and within species (of genes).



Sustainable use of biodiversity means utilizing the benefits of biodiversity gained from the differences among various ecosystems and species, as well as within species, in a manner such that benefits will not decrease in the future.

The way to conserve biodiversity will differ depending on each place and the practices of the people who live there.

Preserving a primitive environment that is free from the influence of human activities may be difficult in an attempt to support the livelihoods of local people and against the backdrop of globalization — but giving a priority to protection can lead to biodiversity conservation.

On the other hand, for areas, such as forests, where people have been utilizing and managing an environment for a long time, sustainable use will be possible through appropriate management, such as with a proper harvesting volumes and undertaking thinning. Without proper management, biodiversity may decline.

Furthermore, the way to conserve biodiversity depends on the practices of stakeholders<sup>2</sup> who use biodiversity. Especially in the case of developing countries, in recognition of the fact that biodiversity helps form the culture of an area, it is important to consider traditional lifestyles and cultures, including their knowledge and practices.

It is also essential to have a broad and global perspective to consider the ecosystems and living species near and far, even those that cannot be seen directly.

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2 Stakeholders are the parties that have an interest in the activities of business entities. This can include consumers, business partners, shareholders, financial institutions, employees, administrative organizations, local residents, NGOs and NPOs, and researchers whose activities intersect with those of a business entity.

## Chapter 2: Building a Society that Will Nurture Biodiversity – Actions by Business and Cooperation with Other Sectors

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To conserve biodiversity and realize a sustainable society in harmony with nature in which human beings can enjoy the benefits of biodiversity into the future, various actors, including business entities, citizens, private organizations, local public entities and national governments, need to address the conservation and sustainable use of biodiversity.

Business entities play an important role as part of them. To realize a sustainable society in harmony with nature, consumers need to make transitions in their lifestyles, for instance, by increasing their awareness of biodiversity; further reexamining the lifestyle of mass production, mass consumption, and mass waste disposal; and selecting biodiversity-friendly foods and wood products. Actions by business entities are supported by the consciousness of consumers; they must change in keeping with the consumer behavior of every citizen. At the same time, business entities are expected to promote a transition in consumers' lifestyle by making their actions more biodiversity-conscious and by providing biodiversity-friendly goods and services.

Business entities are also expected to cooperate with local governments, NGOs and NPOs, and local residents to address local biodiversity conservation in order to realize a sustainable society in harmony with nature.

To realize a society in harmony with nature, various actors (business entities, citizens, private organizations, local public entities and national government) are expected to fulfill the following roles in order to assist actions by biodiversity-conscious business entities, in keeping with their respective responsibilities and following the fundamental principles specified in the Basic Act on Biodiversity of Japan.<sup>3</sup>

- **Business entities:** Business entities shall, in conducting their business activities, endeavor to reduce impacts on biodiversity and to achieve sustainable use by gaining an understanding of impacts of their business activities on biodiversity and by conducting biodiversity-friendly business activities while pursuing coordination with other business entities and

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3 The Basic Act on Biodiversity of Japan specifies five fundamental principles: (1) conservation of biodiversity (in addition to ensuring the conservation of endangered wildlife species, etc., the diversified natural environment is conserved according to the natural and social conditions of the region; (2) use of biodiversity (using national land and natural resources by sustainable methods to ensure that impacts on biodiversity are avoided or minimized); and as ways of thinking about conservation and utilization, (3) precautionary and adaptive approaches; (4) a long-term perspective; and (5) linkage with global warming measures.

other actors concerned. Business entities are also expected to promote cooperation among multiple business entities for the conservation and sustainable use of biodiversity.

The mass media, in particular, is expected to promote conservation and sustainable use of biodiversity by various actors through providing information.

- Citizens: Citizens shall recognize the importance of biodiversity and endeavor to reduce impacts on biodiversity and achieve sustainable use by handling alien species in an appropriate manner and choosing biodiversity-friendly goods and services in their daily life.
- Citizens and private organizations: Citizens and private organizations shall make voluntary efforts for conservation and sustainable use of biodiversity, and endeavor to cooperate with other actors' efforts for conservation and sustainable use of biodiversity.

NGOs and NPOs, in particular, are expected to raise concerns and conduct monitoring, community-based biodiversity conservation actions, and policy proposals, and to play a role as a partner for business entities and governments in keeping with their characteristics and expertise.

- Local public entities: Local public entities shall be responsible for formulating and implementing policies for the conservation and sustainable use of biodiversity based on governmental policies as appropriate for the natural and social conditions of their respective locations. Each local public entity shall formulate a local biodiversity strategy, provide biodiversity-related information to business entities, collaborate with business entities, citizens, NGOs and NPOs, and promote coordination among bodies.
- National government: The national government shall be responsible for formulating and implementing basic and comprehensive policies for conservation and sustainable use of biodiversity.

### Partnership with Stakeholders

For the implementation of these actions, it is important and effective to have partnerships among industry, government and academia (including educational and research institutions, local public entities and national government), as well as partnerships with stakeholders such as local residents and NGOs and NPOs. Employees of business entities and their families are also considered to be stakeholders in a broad sense.

Examples of partnerships with stakeholders are shown below.

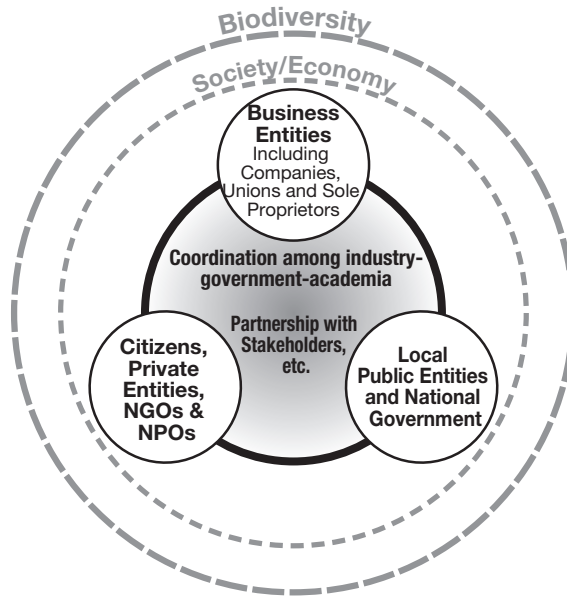
- Business entities coordinate with researchers, local residents' groups and local public entities to share scientific knowledge and knowledge

**i** See Section II, "5. Perspectives to Consider," "Perspective 2: Partnering with Diverse Stakeholders and Considering Their Views" (p. 44-).

**!** For advice on partnerships with other sectors See Reference 1: "Examples of Procedures for Implementing Actions" (p. 48-, especially p. 50-), and various others.

about the community.

- Business entities seek to cooperate with NGOs and NPOs and researchers when they study suppliers of material inputs and the biodiversity located on their property.
- Business entities address biodiversity conservation with the participation of their employees and their families, in coordination with local public entities and local NPOs, etc.



# Chapter 3: Interrelationships between Biodiversity and Businesses – Why Businesses Address Biodiversity

## 3.1. Benefits Businesses Receive from Biodiversity and Impacts Businesses Have on Biodiversity

We receive benefits from biodiversity and at the same time have impacts on it. The figures on page 18 and 19 provide an overview of these interrelationships, especially from the viewpoint of the activities of business entities

The benefits of biodiversity – including food, raw materials for clothing, timber to make houses and paper, drinking water, etc. – and which are essential for our survival originally derive from mountains, oceans and farmland. Mineral resources (such as iron) and energy resources (such as oil) that support our life are extracted, giving impacts to biodiversity. These are then used as raw materials and processed for distribution by various business activities until reaching us. The resources are thereafter reused, for instance through recycling, or disposed of as waste. The actions of business entities thus depend on, and give impacts to, biodiversity through the supplying of materials.

Biodiversity is not only related to material supply. Workplaces for production activities and office work are also protected by biodiversity from natural disasters such as landslides and flooding. Biodiversity also helps to stabilize temperatures and keep down dust. In the process of constructing buildings and using land, biodiversity is sometimes impacted, and impacts on biodiversity may result in impacts on communities.

Knowledge systems and inspirations deriving from biodiversity are helpful in the development of medical products and breed improvements. Mimicking and gaining inspiration from the morphology and functions of the natural world can spur technological innovations. This is called biomimicry or biologically-inspired design. One example is designing a low air resistance lead vehicle for Japan's *Shinkansen* bullet train, inspired by the shape of kingfisher's beak.

Furthermore, business entities may be involved with projects including ecotourism, utilizing the local nature that is supported by biodiversity and local culture based on biodiversity.

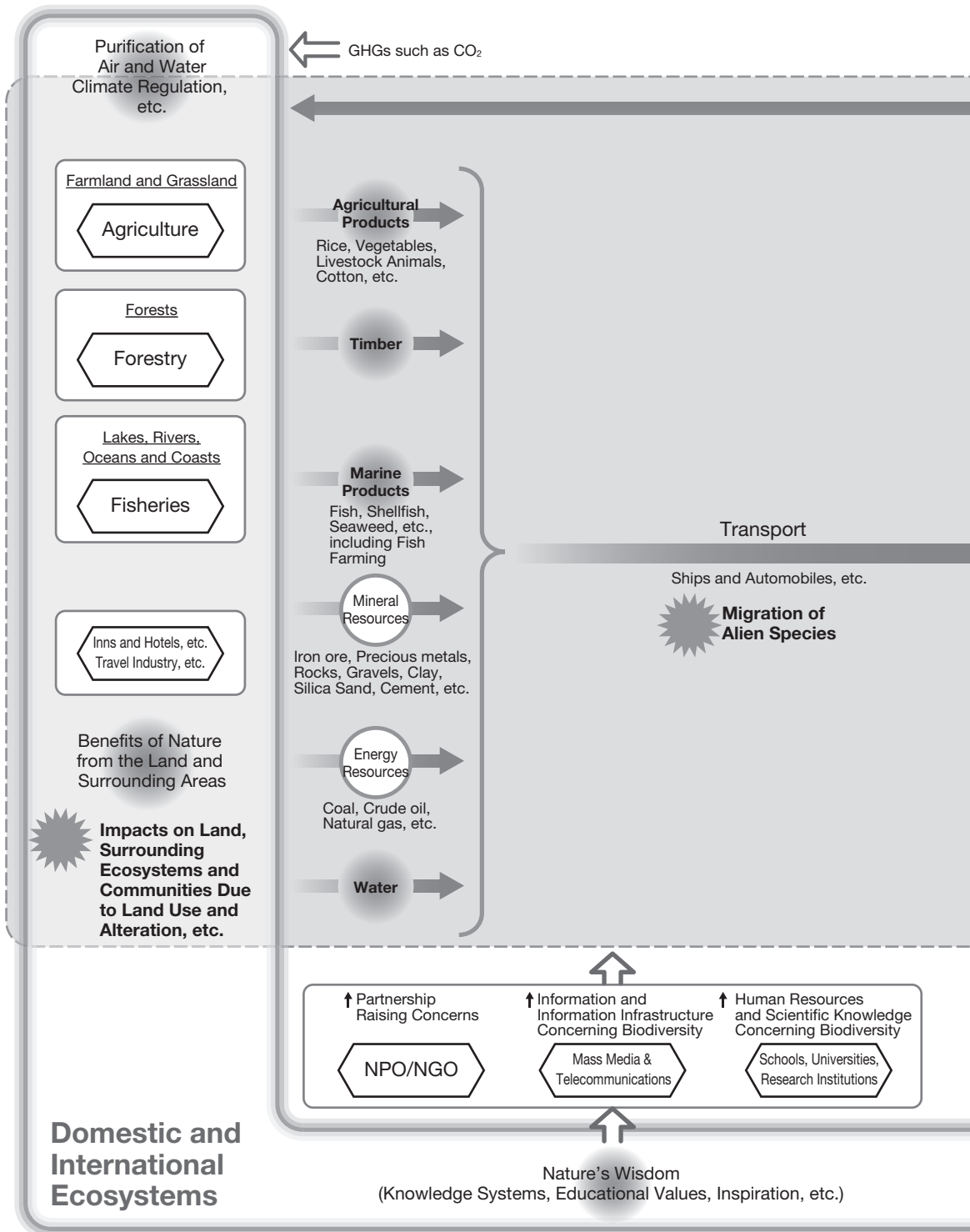
Business entities can also be involved with biodiversity through investment and lending, or through social contribution activities.

Seen in this way, it is clear that it is not only a limited number of business entities that are enjoying the benefits of biodiversity and having impacts on it.

- ① Regarding interrelationships between biodiversity and businesses See Section II, "2. Guiding Approaches" (p. 39).
- ② For advice on how business entities are related to biodiversity See Reference 1: "Examples of Procedures for Implementing Actions" (p. 48-, especially p. 49) and Reference 2: "Examples of Assessing Interrelationships between Business Entities and Biodiversity" (p. 54-).

◆ **Overview of Business Activities and Biodiversity**

This chart briefly illustrates business activities from the viewpoint of biodiversity. It is not a comprehensive illustration of all actors, activities, materials flows, etc.

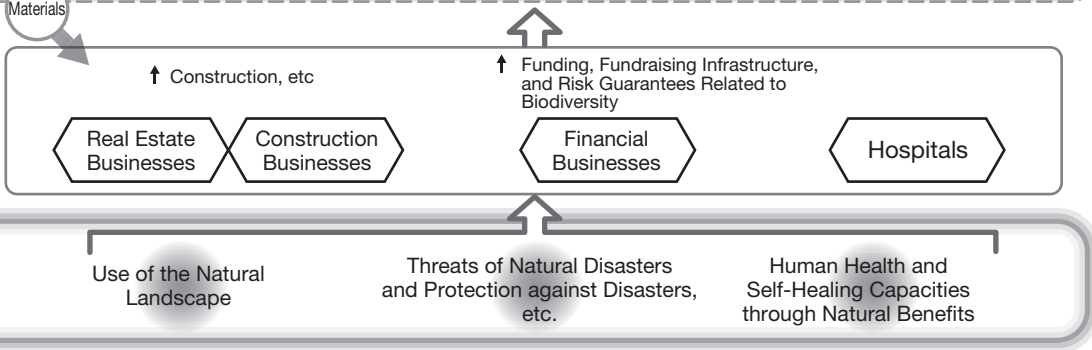
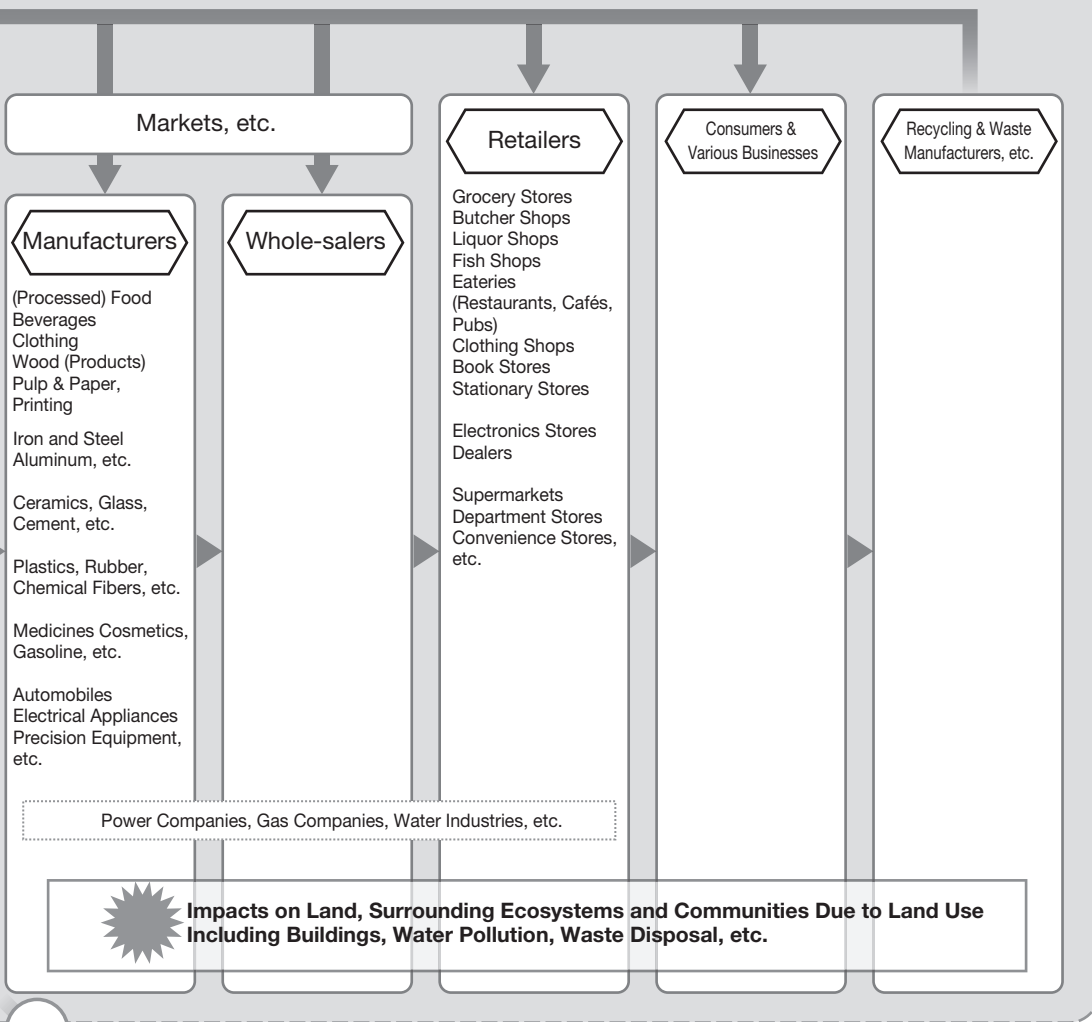
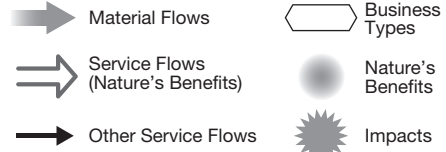




# Biodiversity Crisis Due to Global Warming

↑ GHGs including CO<sub>2</sub>

## Legend



Industries such as agriculture, forestry and fisheries, construction, manufacturing, retailing, finance, the mass media, etc. all have impacts on the activities of other entities that are directly involved with biodiversity, as well as also depending on the benefits of biodiversity through utilizing the natural environment and living resources including agricultural, wood and marine products, and through material flows of supply chains<sup>4</sup>, and investment and lending, etc.

Such benefits and impacts are global. Business entities depend on the benefits of biodiversity and influence biodiversity both inside and outside Japan through the establishment and operation of workplaces and factories, supply chains, investment and lending, etc. Because of its limited natural resources, Japan depends on the services provided by ecosystems overseas for most of its natural resources; it must be recognized that current living standards and lifestyles would not be possible without the natural resources of other countries.

The Millennium Ecosystem Assessment categorizes the benefits of ecosystems upon which biodiversity is based, into four ecosystem services. The report also identifies five main threats to biodiversity, namely, changes to habitats, overexploitation of living resources, climate change, alien species, and the accumulation of excessive nutrients (such as nitrogen and phosphorus) and pollution. If we organize the figure on the previous page from the perspective of “ecosystem services received by business entities” and “impacts given by business entities,” the following would be the result.

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4 A supply chain is the entire chain of processes involved in supplying a good or service (including procurement, development, production, transport, storage, and sales) from the initial procurement of materials to final delivery to consumers by business entities. A business management approach that evaluates the entire supply chain as a process and aims at its optimization, including improvement of the added-value of products and services, is generally called supply chain management. These guidelines discuss supply chain from the viewpoint of biodiversity-friendliness.



## Examples of Ecosystem Services and Main Threats

Benefits/impacts	Categories	Examples
Ecosystem services	Provisioning services	Services that supply resources essential to human life such as food, fuel, timber, fiber, medicines, water, etc. We maintain our life by eating animals and plants, making clothes using animal skins and fibers and make buildings with timber.
	Regulating services	Services that control the environment, for instance the role of forests in climate mitigation, flood prevention and water purification. The costs would be enormous if these services were to be provided artificially.
	Cultural services	Services that provides mental satisfaction, aesthetic pleasure, the infrastructure of religious and social systems, opportunities for recreation, etc. Appreciation of various flowers of the season, ecotourism, native costumes embracing designs derived from native species, and cuisines nurtured by unique local nature are supported by these services.
	Supporting services	Services that support the supply of the three services above. For instance, oxygen generation through photosynthesis, soil formation, nutrient circulation, water circulation, etc.
Main threats	Habitat change	The change of land use, for example through deforestation of virgin forest, which decreases the area of habitat for organisms. This also influences local communities that use living resources (See examples on p. 20).
	Over-exploitation of living resources	Excessive hunting and trapping, collecting illegally, overharvesting of populations for ornamental and commercial purposes (see examples on p. 20).
	Climate change	Greenhouse gas emissions cause climate change, which influences biodiversity.
	Alien species	Alien species influence native biota unique to an area and its ecosystems (see p. 130).
	Accumulation of nutrients and pollution	Nutrients and other chemicals influence habitats of organisms.

### 3.2. Added Benefits of Actions for Biodiversity

Business entities can gain various opportunities to advance their activities through proactively addressing the conservation and sustainable use of biodiversity. Actions for biodiversity are essential for the resource strategies of business entities.

Examples include:

- Addressing sustainable use of living resources can lead to securing long-term, stable procurement of resources.
- Biodiversity-friendly material input procurement and production can

① For advice on opportunities and risks See Reference 2: "Examples of Assessing Interrelationships between Business Entities and Biodiversity", (3) Analyzing Risks and Opportunities (p. 62-) and Reference 7: "Reference Information for This Document," 1. (3) "An Example of Opportunity" (p. 130).

improve the brand value of products. Furthermore, demonstrating engagement can help improve a business entity's corporate brand and help to acquire new clients.

- Being biodiversity-friendly and consequently community-friendly can attract investors who value socially responsible investment (SRI), etc.
- A market for new technologies can be created, enabling the promotion of conservation and sustainable use, such as technologies for the conservation of biodiversity.
- Employee satisfaction (ES) can be improved and personnel can be secured.

If business entities do not actively work on conservation and sustainable use of biodiversity, various risks may arise, instead of these aforementioned opportunities.

For instance:

- Risks of destabilized procurement of living resources.
- Risks of damage to the image of a product, brand or company.
- Risks of reduced market competitiveness of products and services due to deterioration in environmental quality.

Thus, actions by business entities for the conservation and sustainable use of biodiversity can lead to avoiding near- and long-term risks and the gaining of opportunities.

## Chapter 4: Biodiversity-Related Actions by Businesses – Domestic and International Trends

Domestic and international trends related to actions for the conservation and sustainable use of biodiversity by businesses are summarized here.

### Domestic Trends

In Japan, the responsibility of businesses was specified under the Basic Act on Biodiversity, and the interrelationships between business activities and biodiversity were specified under the Third National Biodiversity Strategy of Japan. Corporations are expected to address biodiversity-related issues in environmental reports.

- **The Basic Act on Biodiversity of Japan**: The Basic Act on Biodiversity came into effect in June 2008. The Act specifies the responsibilities of businesses in conducting their business activities, including seeking to reduce impacts on biodiversity and to achieve sustainable use by gaining an understanding of the impacts of their business activities on biodiversity, as well as conducting biodiversity-friendly business activities while aiming at coordination with other businesses and other actors concerned, in keeping with certain fundamental principles (see footnote on p. 24).
- Based on this Act, the national government shall take necessary measures to promote the use of biodiversity-friendly raw materials, ecotourism, organic agriculture and other efforts to reduce the impact of business activities on biodiversity. The government shall also disclose information on biodiversity considerations pertaining to business activities, improve understanding of the importance of biodiversity-friendly consumption lifestyles, and take other necessary measures to ensure that biodiversity-friendly business activities are promoted, in light of the fact that citizens can play a role through choosing biodiversity-friendly goods and services.
- **The Third National Biodiversity Strategy of Japan**: The Third National Biodiversity Strategy of Japan, adopted by the Cabinet in November 2007, states that private enterprises have impacts on biodiversity in addition to receiving benefits from it through the many aspects of their business activities, including procuring material inputs and the utilization of genetic information. Also, because private enterprises play an important role in incorporating the perspectives of conservation and sustainable use of biodiversity into their socioeconomic systems in connection to their overall business activities, the preparation of

**i** For reference information on leading activities by governments, multiple business entities, NGOs and others  
See Reference 7: "Reference Information for This Document," 1 (4) Leading Activities by Governments, Multiple Business Entities, NGOs and Others (p. 131-)

guidelines to promote such efforts was called for by the Third National Biodiversity Strategy of Japan.

- **Environmental Report Guidelines**<sup>5</sup>: The “2007 Environmental Report Guidelines (Fiscal Year 2007 version),” published in June 2007 by the Ministry of the Environment, contained new language concerning biodiversity. The guidelines call for environmental reports to describe the status of activities for biodiversity conservation and the sustainable use of living resources.

### **International Trends**

Internationally, the Conference of the Parties to the Convention on Biological Diversity adopted a Decision on private-sector engagement. Also, the G8 Summit discussed private sector engagement in biodiversity activities.

- **G8 Environment Ministers Meeting**: Biodiversity became an important topic for the first time in the history of the G8 at the G8 Environment Ministers Meeting in 2007. This meeting highlighted the need to enhance political measures that involve businesses and to examine economic impacts associated with the loss of biodiversity. The G8 Environment Ministers Meeting in 2008 adopted the Kobe Call for Action for Biodiversity and called for organizing the Kobe Biodiversity Dialogue, a dialogue among various stakeholders including the business sector and NGOs and NPOs.
- **Convention on Biological Diversity (CBD)**: The Convention on Biological Diversity (CBD) was adopted at the United Nations Conference on Environment and Development (The Earth Summit) held in Rio de Janeiro, Brazil in 1992, along with the United Nations Framework Convention on Climate Change (UNFCCC). The CBD has three goals, namely (1) the conservation of biodiversity, (2) the sustainable use of its components, and (3) the fair and equitable sharing of benefits arising from genetic resources.
- **CBD Decision on private-sector engagement**: The Eighth Conference of the Parties (COP 8) to the Convention on Biological Diversity, held in 2006, adopted a Decision on private sector engagement<sup>6</sup> for the first time. The Decision noted that private-sector activities have serious impacts on biodiversity, although the private sector is the stakeholder group having the least contribution to the implementation of the

5 The Global Reporting Initiative (GRI) published “Biodiversity – a GRI Reporting Resource” in 2007.

6 COP 8 Decision VIII/1 Private-sector engagement (<http://www.cbd.int/decision/cop/?id=11031>) (Reference: COP 9 Decision IX/26 Promoting business engagement (<http://www.cbd.int/decision/cop/?id=11669>) See Reference 6 (p.120-) for contents.

Convention; the Decision noted that the private sector could significantly contribute to the implementation of the Convention through promoting good practices by the private sector.

- **2010 Biodiversity Target:** Globally, the 2010 Biodiversity Target “to achieve by 2010 a significant reduction of the current rate of biodiversity loss” was adopted at the Sixth Conference of the Parties (COP 6) to the Convention on Biological Diversity. The Seventh Conference of the Parties (COP 7) adopted a Decision to develop a framework to evaluate progress towards the 2010 Target, identifying issues that are deeply related to business activities – including biodiversity-based products derived from sustainably managed sources and production areas managed consistent with the conservation of biodiversity; reducing unsustainable consumption of biological resources and consumption that impacts upon biodiversity; protecting traditional knowledge and practices; and technology transfer for developing countries. The Tenth Conference of the Parties (COP 10) to the Convention on Biological Diversity, to be held in Nagoya City, Aichi Prefecture in 2010, is scheduled to discuss actions beyond the 2010 Target.

### **Fair and Equitable Sharing of the Benefits Arising out of the Utilization of Genetic Resources**

The third objective of the Convention on Biological Diversity, the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, indicates that each country has sovereign rights relating to its domestic natural resources.

The Sixth Conference of the Parties (COP 6) to the Convention on Biological Diversity, held in April 2002, adopted the voluntary Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization as a reference to develop legislative and administrative measures and contracts to ensure the “access and benefit sharing (ABS) for genetic resources,” closely related to the third objective of the Convention.

Businesses use a variety of genetic resources, such as to breed improved varieties of agricultural products and to develop new medicines that make use of the rich genetic information of a variety of organisms. It is important to ensure that both the suppliers and users of genetic resources can enjoy benefits by improving understanding of the principle of fair and equitable sharing of benefits as stated under the Convention on Biological Diversity and accessing genetic resources in a manner that gains the trust of suppliers.

For details on access to genetic resources, please refer to the “Guidelines

on Access to Genetic Resources for Users in Japan” published by the Ministry of Economy, Trade and Industry (METI) and the Japan Bioindustry Association.

([http://www.mabs.jp/archives/pdf/iden\\_tebiki\\_e.pdf](http://www.mabs.jp/archives/pdf/iden_tebiki_e.pdf))

## Section II Policies

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Business entities, as important actors having interrelationships with biodiversity, are expected to take actions for the conservation and sustainable use of biodiversity, both domestically and internationally, which naturally includes following domestic laws and international rules related to biodiversity.

This section, “Section II: Policies,” outlines policies relevant to voluntary activities by business entities for the conservation and sustainable use of biodiversity. In keeping with the fundamental point that businesses should understand their interrelationships with biodiversity (as discussed in “Section I: A Shared Understanding of the Situation”), and in light of the fact that businesses, as members of society, should strive for the creation of a sustainable society in harmony with nature, guidance is provided below concerning key issues businesses should consider when taking action to address the global environmental problem of biodiversity from a long-term perspective:

1. Rationales: Describes the most basic objectives of actions by business entities.
2. Guiding Approaches: Describes basic approaches useful to guide efforts as business entities initiate actions.
3. Taking Action: Describes methods for taking action for initial efforts by business entities and for follow-up efforts.
4. Fundamental Principles: Describes fundamental principles that should be understood in connection with actions for the conservation and sustainable use of biodiversity.
5. Perspectives to Consider: Describes key perspectives businesses should consider when they examine and implement concrete actions.

## 1. Rationales

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These Guidelines are founded on the following rationales.

### **Rationale 1: Conservation of Biodiversity**

Biodiversity – including the diversity of ecosystems, wildlife species and their local populations and genes – should be conserved in keeping with the environmental and social circumstances of each locality.

### **Rationale 2: Sustainable Use of the Components of Biodiversity**

Biodiversity components should be utilized in a manner that does not lead to a long-term decline in the components of biodiversity or the benefits (services) derived from them.

Because the circumstances of each business entity are different – based their size, industry type, base of operations, organizational structure, specifics of operations, nature of activities, location of activities (domestic or foreign) and other characteristics (summarized below by the phrase “size and characteristics”) – it is anticipated that each business entity will utilize the guidance provided by this document in a manner appropriate to their specific situation.

The Convention on Biological Diversity (CBD) has three objectives, namely (1) the conservation of biodiversity, (2) the sustainable use of its components, and (3) the fair and equitable sharing of benefits arising out of the utilization of genetic resources; in relation to “access and benefit sharing for genetic resources,” which is closely related to the third objective of the Convention, please refer to the “Guidelines on Access to Genetic Resources For Users in Japan” published by the Japan Bioindustry Association and the Ministry of Economy, Trade and Industry (METI).



## 2. Guiding Approaches

It is desirable that business entities undertake the following actions in order to ensure the conservation and sustainable use of biodiversity.

### (1) Work to assess the interrelationships between business activities and biodiversity (both the benefits (services) received from biodiversity as well as impacts on biodiversity).

When undertaking actions for the conservation and sustainable use of biodiversity, business entities should assess the interrelationships of their business activities with biodiversity. By understanding these interrelationships, business entities can gain an appreciation of their dependence on the benefits of biodiversity and understand how their activities impact biodiversity, thus leading to a better awareness of the need for actions; such information should be linked to considerations of which actions should be given a high priority. Examples of the types of interrelationships between biodiversity and business activities include the utilization of natural resources such as food, timber and water that are benefits of biodiversity, activities that modify land, and investing in businesses that have activities impacting biodiversity.

**!** Relationships between biodiversity and business entities  
See Section I Chapter 3: "Interrelationships between Biodiversity and Businesses" (p.27-) (Including "Overview of Business Activities and Biodiversity," p.28-29)

**!** Advice for Assessing Interrelationships  
See Reference 1: "Examples of Procedures for Implementing Actions (p. 48 onward, especially p. 49)  
See Reference 2: "Examples of Assessing Interrelationships between Business Entities and Biodiversity (p. 54-)

### (2) Work to reduce impacts on biodiversity and work for its sustainable use through business activities that give due consideration to biodiversity.

In keeping with the above-mentioned understanding, business entities are expected to reduce their overall impacts on biodiversity, by giving due consideration to the relationships to biodiversity that exist through the various contexts of the business entity's activities, and to engage in sustainable use so that there will be no decrease in the benefits deriving from biodiversity into the future.

In doing so, business entities are expected to pursue actions in order of their perceived priority, in keeping with the size and characteristics of the business entity.

**!** Advice for biodiversity-friendly business activities  
See Reference 3: "Actions by Business Entities in Key Contexts" (p. 65-)  
See Reference 5: "Concrete Examples" (p. 83-)

### (3) Work to put in place systems that support actions.

As needed, business entities should put in place systems that support biodiversity-related actions, and environmental management systems.

**!** General Advice for Actions  
See Reference 1: "Examples of Procedures for Implementing Actions" (p. 48-)

### 3. Taking Actions

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There are a variety of patterns for biodiversity-related actions by business entities, based on their size and characteristics.

Those business entities that are not currently taking actions can begin their actions with the activities below.

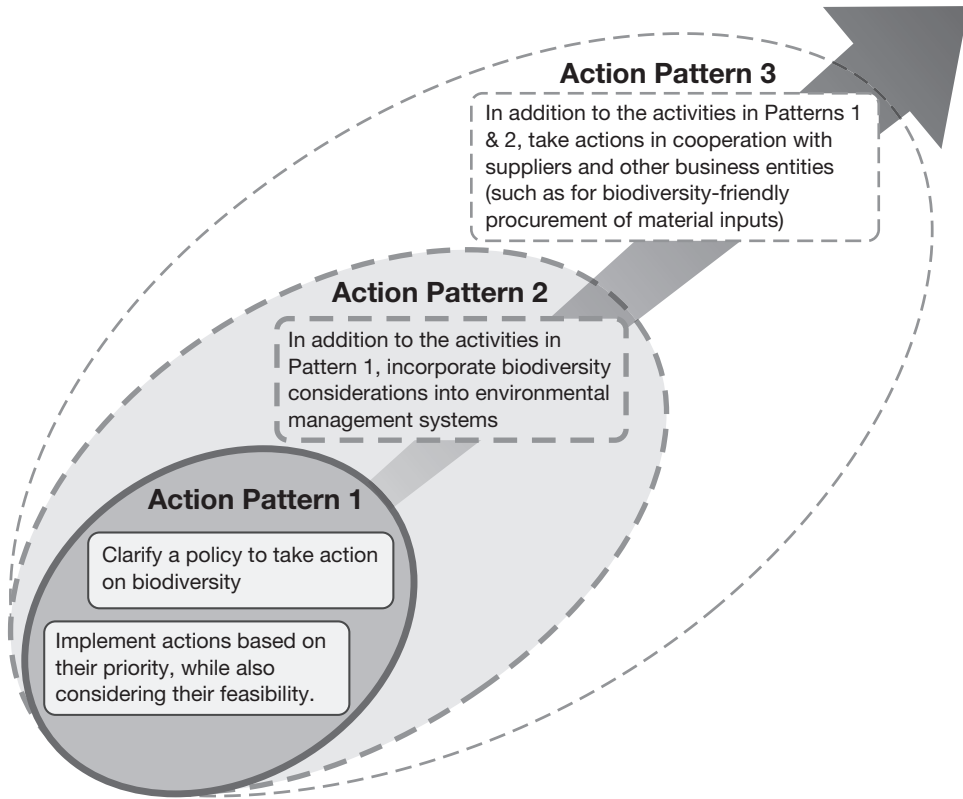
- (1) First, indicate a policy to take action for the conservation of biodiversity and its sustainable use.
- (2) Identify actions that are of highest importance based on an understanding of the business entity's interrelationships with biodiversity, then determine relative priorities among these actions, and take action with respect to those activities having a high priority. In order to achieve steady results, actions should be pursued through a step-by-step approach, taking into account their feasibility.

Those business entities that have already started undertaking actions should review previous actions, and may take further additional actions.

For example, as shown in the figure below, there are many potential patterns for what could be done, including a pattern of adopting a policy on biodiversity-related actions and undertaking specific actions such as for the conservation of biodiversity, or the pattern of expanding cooperation to engage suppliers and other business entities.

Moreover, it is expected that those business entities that have the greatest impacts on biodiversity will take actions in a more proactive manner.

◆ **Patterns of Actions – Examples**



## 4. Fundamental Principles

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The following are three fundamental principles:

### **Principle 1. Avoiding or Minimizing the Impacts to Biodiversity**

In light of the fact that changes in socioeconomic activities have led to the loss of biodiversity, and that the utilization of natural resources is likely to have impacts on biodiversity in Japan and abroad, the use of biodiversity requires sustainable methods of utilizing land and natural resources to avoid or minimize the impacts businesses have on biodiversity.

### **Principle 2. Taking Precautionary<sup>7</sup> and Adaptive<sup>8</sup> Approaches**

Biodiversity depends on a delicate balance that must be maintained; it also involves many phenomena that have not been scientifically explained; biodiversity is also difficult, or virtually impossible, to completely restore once it has been damaged. Therefore, for the conservation and sustainable use of biodiversity, efforts must be made to: improve scientific knowledge; adopt precautionary methods for biodiversity conservation; continuously monitor the status of biodiversity after a project is initiated; evaluate the monitoring results scientifically; and undertake adaptive measures through which these results are reflected in the project and other actions.

### **Principle 3. Adopting a Long-Term Perspective**

Biodiversity provides many long-term, ongoing benefits. The impacts on biodiversity involve many factors having complex interrelationships, and impacts may become gradually apparent only after a relatively long period of time. Therefore, the conservation of biodiversity and its sustainable use necessitates a long-term perspective for efforts to conserve and restore ecosystems.

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7 Precautionary approaches are measures taken in cases for which there is uncertainty and for which scientific proof is lacking; the absence of complete scientific certainty is not to be used as a reason for postponing measures, and action should be taken while also pursuing full scientific knowledge.

8 Adaptive approaches are measures taken on matters for which there is uncertainty, such as when basic information is unavailable or is continually changing; based on advance knowledge that outcomes in such cases may differ from original predictions, monitoring is undertaken, with the results providing feedback for altering activities to match updated information. This is an approach often taken in the conservation and restoration of ecosystems. Because of the complexity and ever-changing nature of biodiversity, all of the relevant factors cannot be known; it is therefore important to act with care and humility.

## 5. Perspectives to Consider

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When business entities take actions related to the conservation of biodiversity and its sustainable use, the following perspectives are expected to be considered.

### **Perspective 1: Focusing on Localities, Thinking Regionally and Globally**

The components of biodiversity may be unique to certain localities or have strong linkages to specific places. If the ecosystems, species and their genes unique to a region, are lost from their native place, they are lost from the Earth as a whole. Conservation of these biodiversity components is made possible through actions in unique natural areas, making a place-based perspective important. Also, in considering arrangements for conservation activities, it is also important to understand the circumstances of the locations where activities will actually take place.

Additionally, in light of the fact that biodiversity is deeply linked with the society and culture of a region, it is important to also give consideration to social and cultural factors, such as traditional lifestyles, knowledge, ideas and practices.

On the other hand, components of biodiversity have wide-ranging connections through material flows such as of water and sediments, and through the movements of animals, etc., and biodiversity itself depends on the unique interconnections among organisms that exist in various places. Additionally, through socio-economic activities, and due to the expansion of business activities, business entities in Japan have close interrelationships with countries throughout the world (especially centered on the Asia region), linked through the movements of raw materials and products, as well as by financial flows such as investments and loans.

Therefore, it is important for businesses to undertake domestic and international actions with a wide-ranging and global perspective, keeping an awareness of the connections linking biodiversity at the watershed and global scales, as well as linkages involving ecosystem services. In particular, given that Japan is heavily dependent on foreign resources, it is also important to have a perspective that considers impacts on ecosystems through the importation and exportation of organisms from overseas, and the supply chain, as will be addressed further below.

① See Section I, Chapter 2: “Building a Society that Will Nurture Biodiversity” (p. 24-)

① For advice related to considering partnerships with diverse stakeholders See Reference 1: “Examples of Procedures for Implementing Actions” (p. 48-, especially p. 50-), and other references.

## **Perspective 2: Partnering with Diverse Stakeholders and Considering Their Views**

In order to promote the conservation of biodiversity and its sustainable use domestically and internationally, it is important to promote the disclosure of information, and to work not only as a single business entity but also in an organic and flexible fashion through partnerships with a diverse range of stakeholders (including actors relevant to a given place – local governments, NGOs and NPOs, community residents, and indigenous people and communities, educational and research institutions, governmental agencies, international organizations, etc.). Partnerships among business entities, and among different industries, can also be effective.

It is also important to consider the perspectives of stakeholders utilizing biodiversity, including the local communities where operations are conducted and material inputs are sourced. In particular, when the location is in a developing country, in light of the fact that biodiversity shapes local society and culture, it is important to act with respect for social and cultural matters including traditional lifestyles, knowledge, ideas and practices, and not only in terms of economic concerns.

① For advice related to social contribution activities See Reference 4: “Social Contribution Efforts” (p. 81-)

## **Perspective 3: Social Contributions**

Business entities can exist only if there is a sustainable society which allows the benefits of biodiversity to continue into the future. It is important to keep in mind that business entities are not only economic actors that pursue profit, but are also members of society and will therefore be expected to contribute to biodiversity.

When conducting social contribution activities related to biodiversity, it is also important to bear in mind that actions should be pursued with clear goals and based on a long-term perspective, and to aim to contribute to the conservation of biodiversity and its sustainable use while seeking a deeper understanding of biodiversity

① For advice related to linkages with global warming and other environmental measures See Reference 7: “Reference Information for this Document,” 2 “Biodiversity and Other Environmental Measures Such as to Address Global Warming” (p. 136)

## **Perspective 4: Linkages with Global Warming and Other Environmental Measures**

As global warming progresses, there is concern that there will be severe impacts on biodiversity, including through the disruption of ecosystems and the extinction of species. This is just one example of how biodiversity is closely related to other issues.

There are thus many cases in which measures taken for other purposes – such as global warming countermeasures, including reducing emissions of greenhouse gases and managing greenhouse gas sinks; reducing and

properly disposing of waste; reusing recyclable resources; preventing pollution; green procurement; and others – will be useful for the conservation of biodiversity. There are also numerous ways in which biodiversity-related actions may be effective in other areas, such as with respect to global warming. Efforts to contribute to local communities can also be related to the conservation of their biodiversity. On the other hand, there are also cases in which some actions may undermine efforts in other environmental areas.

For these reasons, it is important to keep in mind that certain biodiversity-related actions may have beneficial effects on other environmental issues, as well as in terms of contributions to local communities, and actions should therefore be taken that will be effective in a comprehensive fashion across multiple fields.

### **Perspective 5: Considering the Supply Chain**

Business entities have connections to the conservation of biodiversity and its sustainable use in areas beyond those it can directly control, such as the procurement of material inputs by others. While there are cases in which it can be extremely difficult for business entities that procure and use raw materials to gain a full understanding regarding production sites and product lifecycles (due to the length and complexity of the supply chain), a full accounting of domestic and foreign production locations and the lifecycle of products and services may reveal significant impacts on biodiversity.

In order to ensure the conservation and sustainable use of biodiversity, it is important to undertake actions in such a way that the businesses at each stage along the supply chain can cooperate from their respective positions, thus ensuring activities throughout the entire supply chain including the procurement of natural resources and material inputs does not contribute to biodiversity loss.

### **Perspective 6: Verifying Impacts on Biodiversity**

In order to incorporate proper consideration of the conservation of biodiversity when undertaking concrete projects, it is important to keep in mind whether and to what extent a project will have impacts on biodiversity, which can be evaluated by collecting needed information through cooperation, as needed, with local governments, NGOs & NPOs, local residents and communities and other stakeholders. Considerations of impacts should include, for example, confirming whether the location of the project is of high value for the conservation of biodiversity.

① For advice related to considering the supply chain  
See Reference 2: "Examples of Assessing Interrelationships between Business Entities and Biodiversity" (p. 54-) and Reference 3: "Actions by Business Entities in Key Contexts" (1) Procuring Material Inputs (p. 66-)

**Perspective 7: Taking Actions Appropriate to the Size and Characteristics of the Business Entity**

Although interrelationships with biodiversity will of course differ widely in keeping with the size and characteristics of each business entity, all business entities have some sort of relationship to biodiversity. Business entities should take actions that make fullest advantage of their size and characteristics, and each should take proactive measures proportionate to their degree of influence on biodiversity.



This part introduces innovative actions and other activities that can serve as useful reference information, particularly for those that are responsible for project-related operations within business entities considering undertaking biodiversity-related actions. While the implementation of certain actions presented here may involve a variety of challenges, and while it is recognized that there are large differences in the characteristics and size of different business entities, these examples are presented here with the hope that they will serve as useful suggestions of possible actions and activities relating to biodiversity, and will be adapted to the actual circumstances of each business entity.

**Reference  
1****Examples of Procedures for Implementing Actions**

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This section presents and explains examples of approaches to actions on the part of management.

**Reference  
2****Examples of Assessing Interrelationships between Business Entities and Biodiversity**

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This section provides more detailed explanations of the approaches for assessing interrelationships with biodiversity presented in Reference 1.

**Reference  
3****Actions by Business Entities in Key Contexts**

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This section introduces examples of actions under a variety of possible business activity situations.

**Reference  
4****Social Contribution Efforts**

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This section introduces concepts and considerations for actions to implement social contribution efforts.

**Reference  
5****Concrete Examples**

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This section introduces examples where business entities are making innovative efforts in a variety of fields.

**Reference  
6****Recent Key Documents Related to Biodiversity**

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**Reference  
7****Reference Information for This Document****Reference  
8****Summary of Japanese Laws Related to Biodiversity**

Reference  
1

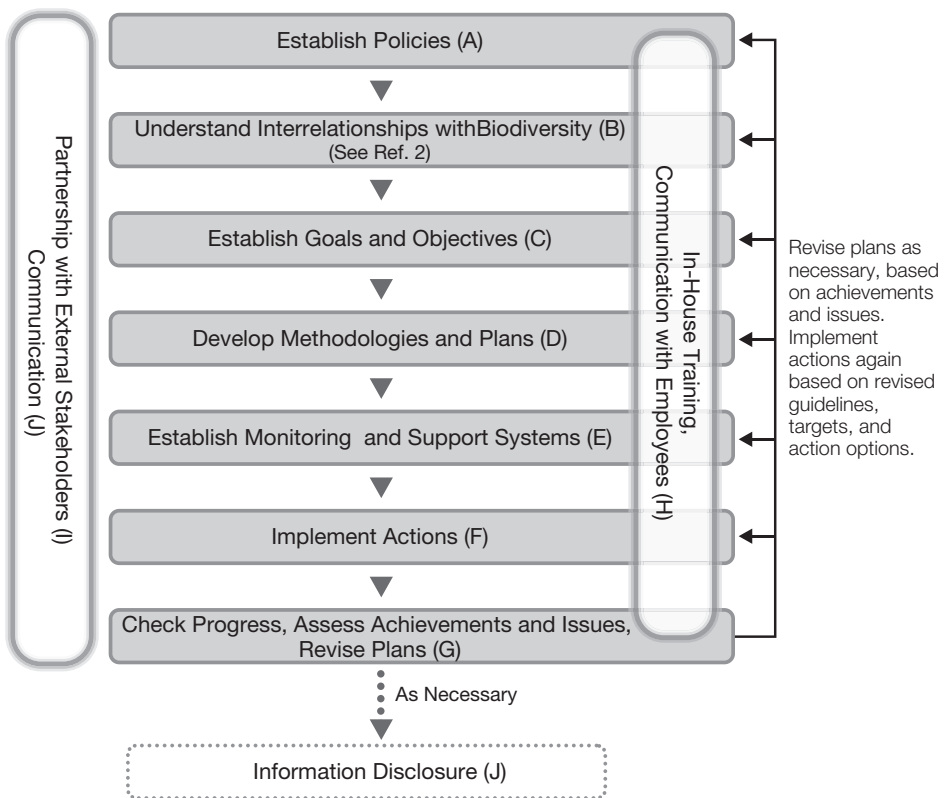
## Examples of Procedures for Implementing Actions

These “Examples of Procedures for Implementing Actions” present some approaches that the management of business entities may take in order to consider biodiversity in their planning activities.

### (1) A Schematic Model of Steps in the Process (Example)

The following flowchart shows a possible model of steps in the process.

This flowchart is one of many possibilities. It is expected that business entities will innovate and adapt the process, as appropriate, depending on their own specific characteristics, scale of operations, and so on.



Schematic Model of Steps in the Process (Example)

To check efforts, and evaluate their effectiveness and the degree to which objectives are achieved, it is valuable to consider the establishment of indicators appropriate for the actual circumstances of each business entity, and also useful to have multiple business entities and organizations conduct research and development of the indicators.

## (2) An Approach to Planning (Explanation of “A Schematic Model of Steps in the Process”)

Businesses and other entities that already prepare documentation such as environmental plans and environmental reports, or that have already introduced environmental management systems, may be able to incorporate biodiversity issues into them. When doing so, it is important to remember the importance of a long-term perspective for actions relating to biodiversity.

The following are examples of possible specific actions for each of the items in the flowchart (example) above.

### (A) Establish Policies

- Example** • Announce policies to undertake measures for the conservation and sustainable use of biodiversity.

### (B) Understand Interrelationships with Biodiversity

- Example** • Analyze benefits that an entity’s business activities receive from biodiversity, as well as their impacts on biodiversity. Also, determine the priority items to address, and consider their level of priority, etc.

**i** For more detail, see Reference 2: “Examples of Assessing Interrelationships between Business Entities and Biodiversity” (p. 49-).  
Section I, Chapter 3: “Interrelationships between Biodiversity and Businesses” (see p. 27-)  
(including “Overview of Business Activities and Biodiversity” (see pp. 28-29))  
(See Section II, 2: “Guiding Approaches” (p. 39))

### (C) Establish Objectives and Targets

- Example** • Establish objectives for actions addressing biodiversity, and define realistic, measurable targets to be monitored and adjusted every two to three years.
- Where necessary, explain the biodiversity targets to suppliers, and develop cooperative relationships with them.

### (D) Develop Examples of Methodologies and Plans:

- Example** • Based on the interrelationships with biodiversity, develop methodologies and plans to achieve the objectives and targets.
- When doing so, it is important to make an effort to gather scientific knowledge, and also to take a precautionary approach.

### (E) Develop Systems for Advancing Measures and Managing Progress

- Example** • Incorporate the conservation of biodiversity into the business entity’s environmental management system, and formulate biodiversity indicators (see p. 52-).

- Decide who is to promote actions at the executive and senior management levels.
- Appoint a responsible individual within the business entity to steer all activities relating to biodiversity, and for reporting to the management board.

#### (F) Implement Actions

- Example** • Implement actions under the institutional structure that has been established.
- When implementing actions, it is important to make steady progress by tackling the high-priority items in order of feasibility—in other words, through taking a step-by-step approach.

① Advice for biodiversity-friendly business activities  
 See Reference 3: “Actions by Business Entities in Key Contexts” (See p. 65-)  
 See Reference 5: “Concrete Examples” (See p. 83-)

#### (G) Check Progress, Assess Achievements and Issues, Revise Plans

- Example** • Check the implementation status and results of actions, and identify achievements and issues. To resolve problems and undertake improved actions, adopt an adaptive approach to the review of methodologies and plans, etc.

#### (H) In-House Training, Communication with Employees

- Example** • To promote biodiversity-conscious actions within the activities of the business entity, establish, implement and maintain methodologies for internal communication (such as in-house training, etc.) at various levels and among the various departments concerned.

#### (I) Partnership with External Stakeholders

Partnership with external stakeholders makes the actions of business entities more effective, and is essential to promote the smooth implementation of actions.

- Example** • Because expert knowledge is important for the conservation and sustainable use of biodiversity and ecosystems, collaborate with experts outside the company, such as research institutions and specialized NGOs and NPOs, etc.
- Business entities should actively seek the input of external stakeholders (e.g., research institutions, NGOs and NPOs, local residents, local governments, etc.) and seek collaboration at each stage of actions—from conceptualization (when establishing policies and targets and

developing plans for actions), through monitoring and evaluation. (Such a stance may increase the level of trust between stakeholders and the business entity, and may make it easier to obtain information and ideas that would be difficult for the relevant parties within the business entity to obtain on their own.)

The following are examples of actors that could be considered to be external stakeholders:

- Governments
- Local public entities (local governments, etc.) (provision of local biodiversity information, coordination with various actors, etc.)
- NGOs and NPOs (input regarding impacts on biodiversity of a business entity's activities, collaboration in developing policies and in social contribution efforts, etc.)
- Local residents (collaboration in social contribution efforts, etc.)
- Educational and research institutions (universities, museums, etc.) (provision of scientific knowledge and information about traditional ecological culture of local communities, etc., and implementation of research relating to local ecosystems and social systems, etc.)
- International organizations
- Business partners, other corporations, and other industry sectors

**i** Section I, Chapter 2: "Building a Society that will Nurture Biodiversity" (p. 24-)  
Section II, 5. "Perspectives to Consider," Perspective 2: "Partnering with Diverse Stakeholders and Considering Their Views" (p. 44-)

#### (J) Communication with External Stakeholders, Information Disclosure

From the perspective of accountability and the necessity of providing information to stakeholders, as well as for businesses to earn the public's trust when conducting biodiversity-conscious actions in their business activities, it is important to disclose environmental information and work proactively to ensure good communication.

- Example**
- Disclose information about the business's interrelationships with biodiversity, and about related activities and their outcomes.
  - Promote communication relating to biodiversity-related actions, using a variety of vehicles, such as environmental reports and two-way communications such as meetings to exchange opinions with NGOs, NPOs, researchers, etc.



#### Reference Materials:

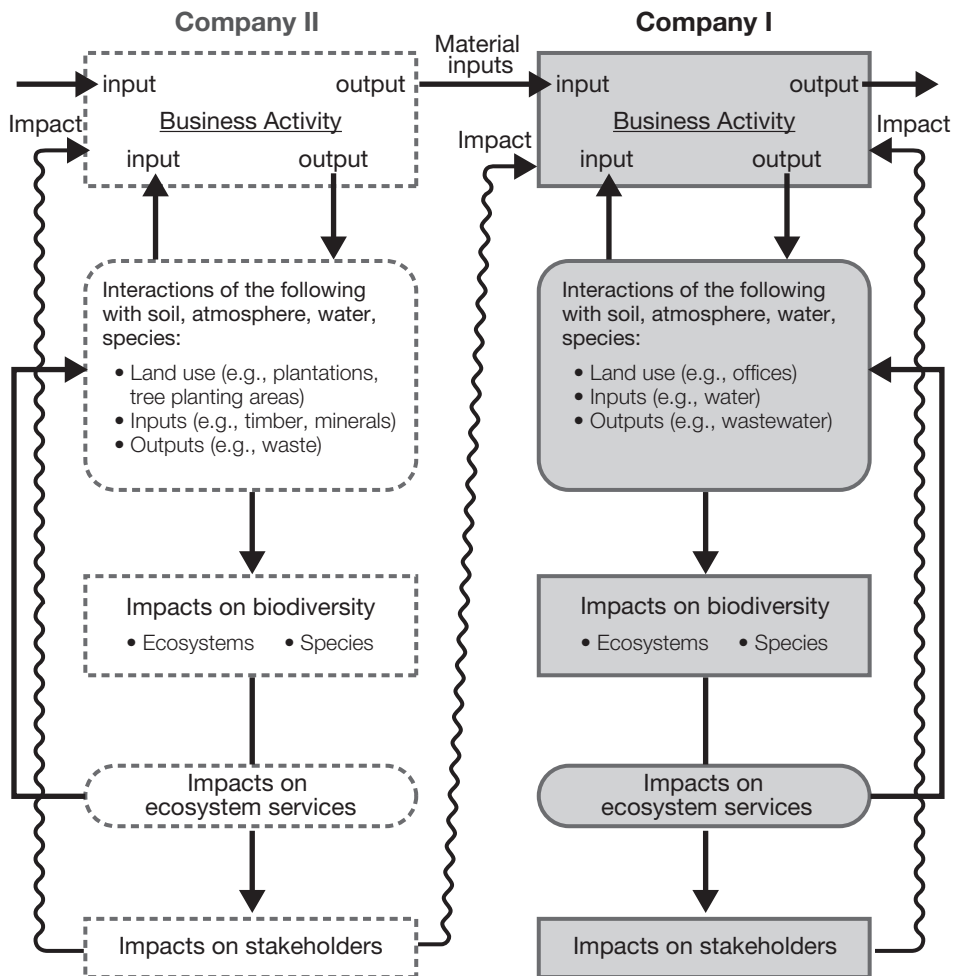
"Environmental Reporting Guidelines: Towards a Sustainable Society" (Fiscal Year 2007 Version)  
(Ministry of the Environment, Japan, 2007)

<http://www.env.go.jp/en/policy/economy/erg2007.pdf>

**i** Reference Information

**Examples of Approaches to Biodiversity Information and Indicators**

A variety of indicators may be considered to help explain biodiversity-related actions, their results, and related matters. The figure below takes the example of Company I (a user of material inputs) and Company II (a supplier of material inputs), and categorizes and symbolically illustrates the biodiversity impacts of their activities. The accompanying table provides examples of biodiversity information and indicators for each category indicated in the figure.



Conceptual Diagram of Relation between Business Activities and Biodiversity Information and Indicators

Because one indicator alone cannot convey everything, it is important to use both quantitative information and descriptive information. Furthermore, the value of quantitative information can be increased by providing additional explanations that will help with interpretation—for example, the trends behind the quantitative information, and the causes and actual circumstances that brought about the results indicated.

The “Environmental Reporting Guidelines” (Fiscal Year 2007 Version), regarding the “status of conservation of biodiversity and sustainable use of biological resources,” specifies required information and indicators, as well as information and indicators that are desirable to also include.

## Examples of Approaches to Biodiversity Information and Indicators<sup>1</sup>

Category		Examples of Information and Indicators
Activities by business entities	Land use	<ul style="list-style-type: none"> <li>• In regions thought to have high conservation value<sup>2</sup> in terms of biodiversity, information on ownership and size of land holdings.<sup>3</sup></li> <li>• Biodiversity conservation status, etc., on land holdings, and adjacent land</li> <li>• Details of changes to habitat caused by actual or planned business activities; actions for avoiding or reducing their impacts on biodiversity; ratio of habitat protected or restored, etc.</li> </ul>
	Inputs	<ul style="list-style-type: none"> <li>• Policies on considering possible biodiversity impacts due to procurement of material inputs, etc.; actions to avoid or mitigate those impacts</li> <li>• Policies for the notification of information relating to the consideration of biodiversity at places and times of collection of material inputs, etc., used in business activities</li> <li>• Total material inputs (including water resources) and measures to reduce them</li> </ul>
	Outputs	<ul style="list-style-type: none"> <li>• Status of efforts to avoid or mitigate the biodiversity impacts that could occur from emissions of pollutants, chemicals or wastes into the environment as a result of business activities</li> <li>• Products and services for which biodiversity has been considered in the procurement of material inputs and in production processes; their ratio within total products and services</li> <li>• Amount of wastewater discharge, water quality, amounts of emissions of chemical substances, and measures to reduce them</li> </ul>
	Other (social contribution efforts, etc.)	<ul style="list-style-type: none"> <li>• Programs being actively conducted to conserve or restore ecosystems; and their targets</li> <li>• Area of land restored to natural conditions in order to conserve biodiversity</li> <li>• Status of communications with major stakeholders regarding biodiversity and other related activities</li> </ul>
Impacts on biodiversity	Status of and changes in biodiversity	<ul style="list-style-type: none"> <li>• Impacts on biodiversity, ecosystems, and species inside and outside the country associated with planned or actual business activities (including impacts of material input procurement and processes); evaluation and countermeasures (avoidance, reduction, etc.) to address those impacts</li> <li>• Information relating to biodiversity and species inhabiting land holdings and adjacent land (in particular, information about threatened and endemic species)</li> <li>• Biodiversity or ecosystem impacts of planned projects on areas that are rich in biodiversity or have high conservation value, and other areas</li> </ul>

1. Information and indicators were prepared with reference to "Environmental Reporting Guidelines" (Fiscal Year 2007 Version).

2. See p. 71-.

3. The term "land holdings" refers to land that is owned, leased, or managed.

Reference  
2**Examples of Assessing Interrelationships between Business Entities and Biodiversity**

As shown in Reference 1, “Examples of Procedures for Implementing Actions,” (see p. 48, etc.), when undertaking biodiversity actions, before formulating a plan, it is hoped that business entities will assess the interrelationships between their activities and biodiversity. It is important that, by assessing these interrelationships, a business discovers how it depends on the benefits of biodiversity and what kinds of impacts its activities have, and that it becomes more conscious of the necessity of actions and considers their levels of priority.

In terms of methods of assessing the interrelationships between a business entity and biodiversity, it is hoped that a business entity will innovate and adapt its actions depending on the business’s characteristics and size, etc. The material below provides concrete examples, for reference, of the processes of considering the priority of actions, based on a determination of the scope of the business entity’s activities, an assessment of the interrelationships (benefits and impacts) with biodiversity, and an assessment of risks and opportunities.

When it comes to critical decision-making related to launching or expanding a business, etc., because the resulting activities can have large impacts on biodiversity, it is particularly important in such situations to consider interrelationships with biodiversity.

- **Determining the Scope of Activities:** Specify the scope of activities (activities, organization, time period, etc.) of the business entity. In addition to the aspects over which a business entity has direct control, there are also other interrelationships with biodiversity—such as through procurement of material inputs from living resources. In some cases it may be extremely difficult to assess this information, such as when the supply chain is long or complex, but in such cases the scope of activities can still be specified by keeping in mind the feasibility of assessing this information and the size of predicted impacts on biodiversity—with the supply chain in mind.
- **Assessing Interrelationships with Biodiversity:** Confirm the benefits that the business entity may be relying upon within the scope of the specified business activities. One approach to assessing the benefits is to consider the “provisioning services,” “regulating services,” “cultural services,” etc., as appear in the “Millennium Ecosystem Assessment.” The possible impacts on biodiversity are also assessed. When investigating impacts, it is worth examining them from the perspective of, for example, alterations to species’ habitats, overharvesting of living resources, introduction of alien species, pollution, climate change, etc.
- **Analyzing Risks and Opportunities:** Based on the results of the assessment of benefits and impacts, and on the characteristics and scale of the business entity, it is



worth considering the risks of not taking action on biodiversity and the opportunities available if action is taken.

- **Considering the Priority of Actions:** Based on the interrelationships with biodiversity, and on other factors, the business entity considers the priority levels of actions. When considering priorities, it is worth considering which benefits or impacts are likely to be greatest.

The pages that follow provide some detailed explanations about each item in the examples provided above.

**i** See Section I, Chapter 3: "Interrelationships between Biodiversity and Businesses" (p. 27-) (including "Overview of Business Activities and Biodiversity," pp. 28-29)  
Section II, 2. "Guiding Approaches" (p. 39)  
Reference 1: "Examples of Procedures for Implementing Actions" (p. 48-, particularly p. 49)

### (1) Determining the Scope of Activities

To begin with, a business entity must specify the scope of activities (activities, organization, time period, etc.) to be considered. By specifying the scope, it becomes possible to clarify what needs to be analyzed and to consider the most feasible actions.

In terms of the biodiversity benefits that are relied upon, as well as impacts on biodiversity, in addition to those things that a business entity has direct control over, there are also other interrelationships such as through procurement of material inputs from living resources. Regarding the benefits that the business entity may be depending on, and impacts that it may be causing, the business specifies which activities to assess among those that it can manage directly, activities relating to the supply chain for the procurement of material inputs, activities relating to the use, disposal, and recovery of products, and so on. In some cases it may be extremely difficult to assess this information, such as due to a long or complex supply chain, but in such cases the scope of activities can still be specified by keeping in mind the feasibility of grasping this information and the size of predicted impacts on biodiversity, with the supply chain in mind.

For example, for the paper manufacturing industry, activities would involve a series of processes throughout the lifecycle, such as the procurement of timber and other material inputs, manufacturing, distribution, product use, waste, and recovery. In the financial sector, for example, specified activities may include activities such as investing and lending that a corporation can identify.



Depending on the business entity, in some cases not all processes are conducted within the organization; production may be transferred to affiliated organizations inside or outside the country, and shipping and other functions may be subcontracted out to other affiliated parties. In such cases, the entities relevant to such activities may be specified, for example, by targeting all the entities that are subject to consolidated financial reporting.

The time period covered by the scope of activities being assessed is also to be specified.

## **(2) Understanding Interrelationships with Biodiversity**

### **(i) Classifying the Specified Scope of Activities**

When assessing interrelationships with biodiversity, there are various ways to classify the scope of the activities of the organization, depending on the nature of a particular business entity. Businesses are expected to innovate and adopt good ideas, as appropriate, depending on their specific characteristics and sizes, etc.

#### **Suggestions for Classifying the Scope of Activities**

- By the business sectors involved, or through which activities are being implemented
- By the departments within the company
- By the materials having the greatest inputs and outputs in the material balance
- By the suppliers of material inputs
- By the lifecycles of major products and services
- By the ecosystems involved
- By the business sectors of borrowers or activities invested in and so on.

### **(ii) Assessing Possible Dependencies upon Biodiversity Benefits**

Within the scope of the activities that have been classified, the business entity assesses the biodiversity benefits upon which it may depend (ecosystem services<sup>1</sup>, such as provisioning services, regulating services, cultural services, etc.).

For example, a business in the food industry may rely upon provisioning services for crops, livestock, etc., and a business in the tourism industry may rely upon cultural services such as recreation and ecotourism.

In addition, useful results may be obtained if analysis goes beyond the actual business entity concerned to also include the biodiversity benefits relied upon by suppliers, customers, borrowers, and financially related entities, etc.

#### **Suggested Questions for Identifying Benefits**

- Are living resources (food, timber, fiber crops, etc.), and water, etc., being used in the activities of the business entity? If they are being used, are those resources tending

to increase or decrease? Is the speed of increase or decrease large or small? Are the supply levels of those resources high or low? If that resource becomes unavailable, is another resource available that can be purchased at a reasonable price (e.g., food produced in another location)?

- Are genetic resources and or properties of life forms, etc., being used in the activities of the business entity? If so, can business activities be maintained favorably in the future without using them?
- Is the business entity engaged in activities that utilize the natural environment (ecotourism, natural landscape, wildlife, etc.)? If so, can business activities be maintained favorably in the future if they disappear?
- Are the natural disaster-prevention benefits of ecosystems closely linked to the stable continuation of business activities, good business performance, etc.?

### (iii) Assessing Possible Impacts on Biodiversity

Based on the scope of activities classified above, possible impacts on biodiversity are assessed.<sup>2</sup>

Useful results may also be obtained if analysis goes beyond the actual business entity concerned to also include analysis of the extent of the following types of impacts caused by suppliers, customers, borrowers, financially related entities, etc. (see p.62).

It is important to note that impacts may be positive in some aspects, and negative in others.

#### Suggested Questions for Ascertaining Impacts

- What land is being used, and to what extent, in the activities of the business entity? From the perspective of biodiversity, what are the characteristics of the land being used? In terms of biodiversity conservation, does the land include areas of high conservation value? To what extent are business activities reducing or fragmenting species' habitats?
- What living resources are being used, and to what extent, in the activities of the business entity?
- Are the business activities causing the introduction of alien species, or causing genetic contamination?
- Are the business activities causing environmental pollution or environmental changes, and are they having an impact on species or on habitats?
- Are the above impacts limiting the benefits of biodiversity being enjoyed by other parties?
- Are the above impacts having an effect on the local community or culture?
- Are those effects increasing or decreasing? etc.

**Example of Assessing Benefits from and Major Threats to Biodiversity**

Activities of business entities	Product A	Product B	Product C	Material A	Material B	Material C
<b>Benefits</b>						
<b>Provisioning services</b>						
Crops				● Material input		
Livestock						
Capture fisheries	● Material input					
Aquaculture						
Wild food						
Timber and other wood fiber		● Material input				● Material input
Other fibers (cotton, hemp, silk, etc.)						
Biomass fuel		○	○			
Freshwater	●	●	○		●	●
Genetic resources						
Biochemicals, natural medicines						
<b>Regulating services</b>						
Air quality regulation						
Climate regulation	○	○				
Regional and local climate regulation	○	○				
Water regulation	○	○				
Erosion control		○				
Water purification and waste treatment						
Disease regulation						
Pest and weed regulation		○				
Pollination						
Natural hazard regulation	○		○	○		
<b>Cultural services</b>						
Recreation and ecotourism						
Other						
<b>Supporting services</b>						
Nutrient cycling						
Primary production						
Water cycling						
<b>Major threats</b>						
Loss, reduction, fragmentation of habitat			○	● Mining	● Farmland	●
Overharvesting of living resources	● Fish	● Timber			● Crops	●
Introduction of alien species						
Pollution (discharge of nitrogen, phosphorus, chemical substances into water, etc., and their use in the environment)		○		● Drilling, etc.		
Climate change		○	○			
Other			○			

**Legend**

- A black circle indicates that the relationship to the activities of the business entity are large and impacts are large.
- A white circle indicates that there is a relationship with the activities of the business entity.

## Note 1. Ecosystem Services

The “Millennium Ecosystem Assessment” defines “ecosystem services” as the benefits humanity receives from ecosystems.

Ecosystem services are classified into four types: provisioning services, regulating services, cultural services, and supporting services.

### ○ Provisioning Services

This term refers to services providing important resources for humanity – such as food, fuel, timber, fiber, medicines, water, etc. – which are essential for the maintenance of human lives and livelihoods. Even if they are currently not yet known or their utility value is not yet adequately understood, they may in the future be found to be useful for human survival.

Biodiversity is extremely important with respect to provisioning services, due to the potential it provides for the use of valuable resources.

#### Examples of Provisioning Services

Service		Description
Food	Crops	Cultivated plants or agricultural produce harvested by people for human or animal consumption as food <i>Examples:</i> grains, vegetables, fruit
	Livestock	Animals raised for domestic or commercial consumption or use <i>Examples:</i> cattle, pigs, chickens
	Capture fisheries	Wild fish captured through non-farming methods <i>Examples:</i> tuna, shrimp, cod
	Aquaculture	Fish, shellfish, crustaceans, and seaweed bred and raised using ponds and other freshwater or saltwater areas for purposes of harvesting <i>Examples:</i> shrimp, oyster, eel, dried laver seaweed (“nori”)
	Wild foods	The influences ecosystems have on local or regional temperatures, precipitation, and other climatic factors <i>Examples:</i> Land cover changes that can alter temperature and precipitation
Timber and fiber	Timber and other wood fiber	Products made from trees harvested from natural forest ecosystems, afforested land, etc. <i>Examples:</i> logs, wood pulp, paper
	Other fibers	Non-wood and non-fuel fibers extracted from the natural environment or grown and harvested by humans for a variety of uses (cotton, hemp, silk, wool, etc.) <i>Examples:</i> textiles (clothing, etc.), rope
Fuel		Living or recently living organisms that are used as a source of energy <i>Examples:</i> fuelwood, charcoal, plants for fuel production, manure
Freshwater		Inland bodies of water, groundwater, rainwater, and surface waters for household, industrial, and agricultural uses, etc. <i>Examples:</i> Freshwater for drinking, industrial processes, electricity generation, or as a mode of transportation
Genetic resources		Genes and genetic information used for animal breeding, plant improvement, and biotechnology <i>Examples:</i> genes used to increase crop resistance
Biochemicals, natural medicines		Medicines, biocides, food additives, and other biological materials derived from ecosystems for commercial or domestic use <i>Examples:</i> alginic acid, ginseng, camphor

○ **Regulating Services**

“Regulating services” are services that help regulate the environment—for example, in the ways that forests regulate the climate, reduce flooding, and purify water. The costs of these services would be enormous if they had to be provided artificially, through human intervention.

High levels of biodiversity may lead to more stable regulating services, as well as an increased ability to recover from external disturbances and unforeseen conditions.

Examples of Regulating Services

Service		Description
Air quality regulation		The influences ecosystems have on air quality, through emitting chemicals or removing chemicals from the atmosphere <i>Examples:</i> Lakes serve as a sink for sulfur compounds; burning vegetation emits particulates, ground-level ozone, and volatile organic compounds
Climate regulation	Global	The influences that ecosystems have on the global climate through emitting greenhouse gases or aerosols or through absorbing greenhouse gases or aerosols from the atmosphere <i>Examples:</i> Forests capture and store carbon dioxide; wetlands, cattle, and rice paddies emit methane
	Regional and local	The influences ecosystems have on local or regional temperatures, precipitation, and other climatic factors <i>Examples:</i> Land cover changes that can alter temperature and precipitation
Water regulation		The influences ecosystems have on the timing and magnitude of water runoff, flooding, and aquifer recharge, particularly in terms of the water storage potential of the ecosystem or landscape. <i>Examples:</i> Permeable soil facilitates aquifer recharge; river floodplains and wetlands retain water—which can decrease flooding during runoff peaks—reducing the need for engineered flood control infrastructure
Erosion control		Roles that vegetative cover plays in soil retention and landslide prevention <i>Examples:</i> Vegetation such as grass and trees that prevents soil loss due to wind and rain
Water purification and waste treatment		Roles that ecosystems play in the absorption and decomposition of organic waste in water; roles in assimilation and detoxification of compounds through soil and bottom sediment processes <i>Examples:</i> Soil microbes that degrade organic waste
Disease regulation		Influences that ecosystems have on the incidence and abundance of human pathogens <i>Examples:</i> Intact forests that reduce the occurrence of standing water—a breeding area for mosquitoes—which can lower the prevalence of malaria
Pest/weed regulation		Influences that ecosystems have on the prevalence of crop and livestock pests, weeds and diseases <i>Examples:</i> Predators from forests near farmland—such as bats, toads, and snakes—that consume crop pests and weeds
Pollination		Roles that ecosystems play in transferring pollen from male to female flower parts <i>Examples:</i> Bees from forests near farmland that pollinate crops
Natural hazard regulation		The capacities of ecosystems to reduce damage caused by natural disasters, such as typhoons and high tides, and to maintain natural fire frequency and intensity <i>Examples:</i> Mangrove forests and coral reefs that protect coastlines from storm surges; biological decomposition processes that reduce potential fuel for wildfires

## ○ Cultural Services

“Cultural services” include opportunities for spiritual fulfillment, aesthetic enjoyment, religious and social system foundations, recreation, etc. Many local cultures and religions are supported by local endemic ecosystems and biota.

Biodiversity could be described as the foundation of such cultures. The loss of species can ultimately lead to the loss of that local culture.

### Examples of Cultural Services

Service	Description
Recreation and ecotourism	Recreational pleasure that people derive from natural ecosystems, etc. <i>Examples:</i> hiking, camping, bird-watching
Other	Spiritual, religious, aesthetic, intrinsic “existence,” or other values people attach to ecosystems, landscapes, or species <i>Examples:</i> Spiritual fulfillment derived from sacred land and rivers; belief that all species are worth protecting regardless of their utility to people

## ○ Supporting Services

These are services that support the supply of provisioning services, regulating services, and cultural services. Examples include the production of oxygen through photosynthesis, soil formation, nutrient cycling, water cycling, etc.

### Examples of Supporting Services

Service	Description
Nutrient cycling	Roles that ecosystems play in the flow and recycling of nutrients (e.g., nitrogen, sulfur, phosphorus, carbon) through processes such as decomposition and/or absorption <i>Examples:</i> Soil fauna and microbes that decompose organic matter and contribute to soil fertility.
Primary production	The formation of biological material through plant photosynthesis and nutrient assimilation <i>Examples:</i> Algae transform sunlight and nutrients into biomass, thereby forming the base of the food chain in aquatic ecosystems.
Water cycling	The flow of water circulating through ecosystems in its solid, liquid, or gaseous forms <i>Examples:</i> Transfer of water from soil to plants, plants to air, and air to soil through rain, etc.



### References:

- “Annual Report on the Environment and the Sound Material-Cycle Society in Japan 2007” (Ministry of the Environment, 2007, in Japanese)
- Millennium Ecosystem Assessment Synthesis Reports
- “The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities Arising from Ecosystem Change” (Version 1.0), 2008. These are guidelines developed by the World Business Council for Sustainable Development (WBCSD), Meridian Institute, the World Resources Institute (WRI), and others. This publication systematically presents methodologies to support strategy formulation for corporations to analyze ecosystem services, risks, and opportunities.  
<http://www.wbcsd.org/Plugins/DocSearch/details.asp?DocTypeId=25&ObjectId=Mjg5NjQ>

**Note 2. Examples of Possible Impacts Caused by Business Entities**

Impacts	Examples of Possible Impacts Caused by Business Entities
Habitat change	<ul style="list-style-type: none"> <li>• Reduction in the area of species' habitat due to land transformations such as factory construction, real estate development, agricultural use, waste treatment, etc. Reduced population numbers and numbers of species in the area concerned. Fragmentation of animal migration routes.</li> <li>• Fragmentation of species' habitat due to construction of structures</li> <li>• Habitat changes due to alteration of the watercourses of rivers, lakes, etc., due to construction of structures, or changes in flow volume or water volume due to water intake, etc.</li> <li>• Changes in species' habitat due to large-scale plantation developments</li> </ul>
Overharvesting of living resources	<ul style="list-style-type: none"> <li>• Overexploitation or depletion of living resources such as forests, fish, and shellfish, or other flora and fauna</li> <li>• Decrease in population numbers due to collection of rare or endangered species</li> <li>• Reduction in traditional uses of living resources in local communities</li> <li>• Decline in local traditional cultures based on living resources</li> </ul>
Alien species	<ul style="list-style-type: none"> <li>• Ecosystem impacts due to the introduction of alien species through transportation activities</li> <li>• Ecosystem impacts due to the use of alien species in greening or aquaculture, etc.</li> </ul>
Pollution	<ul style="list-style-type: none"> <li>• Changes in species' habitat due to the discharge of pollutants into the environment (water bodies, etc.)</li> <li>• Reduction in diversity due to loss of species, reduction in population numbers or numbers of species, due to discharge of pollutants into the environment (water bodies, etc.)</li> </ul>
Climate change	<ul style="list-style-type: none"> <li>• Acceleration of climate change and increased impacts on biodiversity due to emissions of greenhouse gases</li> </ul>
Other impacts on biodiversity	<ul style="list-style-type: none"> <li>• Habitat changes due to night-time illumination, etc.</li> <li>• Impacts on animal reproduction due to noise</li> <li>• Impacts on bird migratory routes due to installation of large wind turbines for electricity generation</li> </ul>

Source: This table was developed with reference to the classification of impacts based on "Main Direct Drivers of Changes in Biodiversity and Ecosystems" in the "Millennium Ecosystem Assessment."

**(3) Analyzing Risks and Opportunities**

Based on the results of the assessment of biodiversity benefits and impacts, and on the characteristics and scale of the business entity, the next steps are to enumerate the possible risks of not taking action on biodiversity and the opportunities available if action is taken, and to analyze their levels of importance for the business entity concerned.

**Advice for Analysis of Risks and Opportunities**

- Is there a threat of declines in ecosystem services – such as food, timber, fiber crops, water, etc. – or the loss of access to them, and the threat of impacts on business operations?
- Is there a threat of violating laws by overharvesting of living resources, etc.?
- Could the public reputation be damaged as a result of being perceived as having a negative impact on biodiversity?
- Could actions related to biodiversity bring advantages in terms of investments or an improved reputation in the market?



## Examples of Risks and Opportunities

Type		Examples of Risks and Opportunities
Operational	Risks	<ul style="list-style-type: none"> <li>• Scarcity of material inputs or increased costs of procurement of material inputs, such as due to declines in living resources</li> <li>• Reduced output or productivity, or disruption of business operations, due to declines in living resource availability</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Development of production processes that are less affected by scarcity of material inputs, by means of sustainable use or reduction in use of living resources</li> <li>• Strengthening of the supply chain through the promotion of actions by suppliers</li> </ul>
Regulatory/ legal	Risks	<ul style="list-style-type: none"> <li>• Imposition of fines, suspension or rejection of licenses or permits, lawsuits, etc., due to legal violations related to biodiversity conservation</li> <li>• Cuts in quotas for living resources, or imposition of new user fees</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Official approval received to expand operations, thanks to consideration of biodiversity</li> <li>• Development or sales of new products that comply with new regulations, etc., relating to biodiversity</li> </ul>
Reputational	Risks	<ul style="list-style-type: none"> <li>• Damage to brand or corporate image, challenge to social “license to operate” due to discovery of negative impacts on biodiversity</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Demonstration of consideration of biodiversity improves brand image, appeals to consumers, and differentiates company from others in the industry</li> <li>• Consideration of biodiversity helps obtain the understanding of the local community or strengthen relationships with locals residents and other stakeholders</li> </ul>
Markets / products	Risks	<ul style="list-style-type: none"> <li>• Loss of customers due to promotion of green procurement in public and private sectors</li> <li>• Decline in market competitiveness of products or services due to lower environmental product quality</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Development of products or services that consider biodiversity, and new markets for certified products, etc.</li> <li>• Development of new technologies, products, etc., that promote conservation and sustainable use of biodiversity</li> <li>• Appeal to consumers who have high ethical sensitivity for environmentally concerned corporations and products, etc.</li> </ul>
Financing	Risks	<ul style="list-style-type: none"> <li>• Potential refusal of financing requests due to more rigorous lending criteria at financial institutions</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Appeal to investors who emphasize social responsibility</li> </ul>
Internal	Risks	<ul style="list-style-type: none"> <li>• Decline in employee morale</li> </ul>
	Opportunities	<ul style="list-style-type: none"> <li>• Improved employee morale</li> </ul>

#### (4) Setting Priorities

Based on the analysis of biodiversity benefits and impacts as well as risks and opportunities, the next step is to consider the priority level for actions by the business entity. When deciding on priorities, the following points are worth considering:

- Items having a high level of dependence on biodiversity benefits or a high level of impacts on biodiversity
- Items having a medium level of dependence on biodiversity benefits or a medium level of impacts on biodiversity, but that involve large risks or opportunities

Depending on the priority level assigned, the next step is to identify activities (from among the range of items specified through the earlier determination of the scope of the business entity’s activities) that should be undertaken due to being particularly important from the medium-to-long term perspective for the conservation and sustainable use of biodiversity, and those that are relatively lower in priority but should be undertaken in the future.

#### Example of Assessing Benefits from and Major Threats to Biodiversity

Business Activity \ Risk/ Opportunity	Product A		Product B	
	Opportunities	Risks	Opportunities	Risks
Operational			● Able to secure stable supply of material inputs thanks to consideration of sustainable use	● Failure to consider sustainable use may result in difficulties in securing material inputs
Regulatory/legal	○ By considering biodiversity, business entities can develop the trust of stakeholders and authorities	○ Failure to consider biodiversity may result in rejection of applications for permits for resource gathering		
Reputational			● Consideration of biodiversity enhances brand image	
Market/product	● Develop new customers by using certification system			
Financing				
Internal				

**Legend**

- A black circle indicates a high level of risk or opportunity
- A white circle indicates an activity that involves risk or opportunity



**Consideration of Priority Activities**

**Reference Materials:**

- “The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities Arising from Ecosystem Change” Version 1.0 (WBCSD Meridian Institute, WRI, 2008)

**Reference  
3**

## Actions by Business Entities in Key Contexts

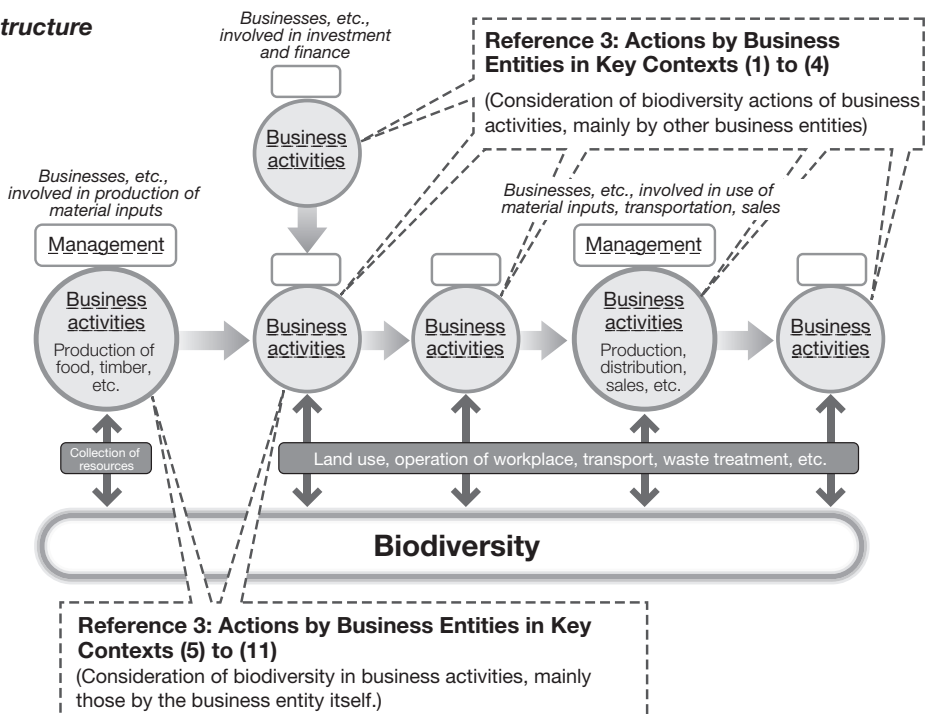
Business entities have a wide variety of interrelationships with biodiversity—through the vast variety of contexts in which they operate.

For key situations where businesses are engaged in business activities, the following pages show the possible impacts of business activities on biodiversity, possible actions for the conservation and sustainable use of biodiversity, and some actions thought to be particularly progressive. It should be noted that many of the activities provided as examples here require expert collaboration in order to boost their effectiveness.

For examples that are related to biodiversity through the supply chain, investment and financing, etc. (examples (1) through (4)), please refer also to examples (5) through (11) regarding how business entities and projects and activities of financially related businesses entities interact with biodiversity.

- |                                   |   |
|-----------------------------------|---|
| (1) Procuring Material Inputs     | (6) Land Use                            |
| (2) Sales                         | (7) Development of Non-Living Resources |
| (3) Investment and Financing      | (8) Operation of the Workplace          |
| (4) Research and Development      | (9) Use of Living Resources             |
| (5) Large-Scale Projects Overseas | (10) Transport                          |
|                                   | (11) Outdoor Tourism                    |

**Structure**



Note: This figure is intended to explain the structure in simple terms. It is not meant to suggest that a business entity at a given stage will necessarily have any particular situation. In reality, a great variety of business entities face many situations, including some not represented above.

### (1) Procuring Material Inputs

In addition to what a business entity has direct control over, there are also other interrelationships with biodiversity, such as through the procurement of material inputs, etc. Business entities that procure and use material inputs in some cases have great difficulty in assessing the situation, for example, in the regions that produce those inputs—due to the length and the complexity of the supply chain. Meanwhile, activities in the producing region (e.g., land use, the use of living resources) can have large impacts on biodiversity, through the procurement of material inputs of living resources, etc. (e.g., timber, fisheries products, agricultural products).

Note: Please see (5) through (11) for possible impacts of suppliers on biodiversity.

#### Examples of Possible Actions

- Strive to reduce the amount of resources used.
- Encourage business entities at every stages of the supply chain to consider biodiversity when procuring material inputs.
  - For living resources and other material inputs procured, consider the observation of laws and regulations (legal compliance); ensure that procurement is not causing the conversion of land use in areas thought to have high conservation value for biodiversity conservation (e.g., development in forested areas or coastal zones); and ensure that procurement works through management systems, etc., based on sustainable use, etc. (sustainability). (See “(5) Large-Scale Projects Overseas.”) Exercise social consideration, such as respect for indigenous rights, etc.
  - Identify, differentiate, and display biodiversity-friendly material inputs separately from other material inputs, in order to promote actions that consider biodiversity in areas that produce living resources, etc., and in order to offer consumers a choice in product selection.
  - Use certified items, etc., in the material inputs being procured.
- Cooperate and work to raise awareness in the supply chain, within the scope allowed by the company’s sphere of influence.

**i Reference Information**

**Basic Policy for the Promotion of Procurement of Eco-Friendly Goods and Services**

Japan's "Basic Policy for the Promotion of Procurement of Eco-Friendly Goods and Services," based on the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (the Law on the Promotion of Green Purchasing) stipulates basic matters indicating that the government and related independent administrative agencies are to comprehensively and systematically promote the reduction of environmental impacts (including consideration of biodiversity) in the procurement of material inputs, parts, products, and services.

For certain paper products, the Basic Policy states that one criterion for procurement decision-making is that logs used for virgin pulp (excluding virgin pulp manufactured from forest thinnings, or from recycled materials, such as cuttings left over in plywood factories and sawmills), must be logged legally under the forest legislation of the producer country; also, as a factor for consideration, where virgin pulp is used as a material input, any logs used must be produced from a sustainably-managed forest.

**i Reference Information**

**Certification Programs**

Forest Certification

These are systems in which an independent third party certifies forests that are properly managed and the production and distribution of forest products from such forests—environmentally, economically, and socially.

[Major Forest Certification Schemes]

**Programme for the Endorsement of Forest Certification Schemes (PEFC): PEFC Council**

This is the world's largest forest certification program, with the PEFC Council serving as the international managing body that runs the forest certification program, in order to promote mutual recognition between systems, and to review the forest certification schemes developed separately in each country. It provides forest certification, and certification for the chain of custody (CoC – meaning the flow of forest products from forest to market). Currently, 25 systems have mutual recognition, and forests already certified under these systems cover more than 200 million hectares worldwide.

Reference: <http://www.pefc.org/internet/html/>



**Forest Stewardship Council (FSC)**

This is a certification scheme under the Forest Stewardship Council, an open-membership organization of stakeholders involved in forest management. It offers two types of certification: Forest Management (FM) certification applies to forests and forest land, and Chain of Custody (CoC) certification applies to the management of production, processing, and distribution processes. Under FM certification, as of December 2008, there were more than 100 million hectares certified in 954 locations in 81 countries worldwide. Biodiversity conservation is included within the principles of the FSC.

Reference: <http://www.fsc.org/>



**Sustainable Green Ecosystem Council (SGEC)**

This is a forest certification system operated by the Sustainable Green Ecosystem Council, a body established by 74 founding organizations from a wide range of fields in various industries in order to create a forest certification system suitable for Japan. There are two systems: the SGEC Forest Certification System, and the SGEC Separation and Labeling System. As of December 25, 2008, a total of about 740,000 hectares of forestland were certified. Biodiversity conservation is one of the standards of SGEC.



Reference: <http://www.sgec-eco.org/>

- Examples of products using forest certification: paper, stationery, construction materials, etc.

**Goho-wood Mark: Japanese Federation of Wood-industry Associations**

This is a label established as a symbol for activities to address the problem of illegal logging and to raise awareness of systems for wood and wood products for which legal compliance has been verified (referred to as "goho-mokuzai" in Japanese, which means "legal timber"). Verification is based on written "Guidelines for Verification of Legality and Sustainability of Wood and Wood Products" elaborated by Japan's Forestry Agency. The mark is used by businesses that want to show that they are supplying legal timber, and is also used as a promotional tool for the legal timber verification system, and for raising awareness about legal timber.

Reference: Council for Tackling the Illegal Logging Issue, <http://goho-wood.jp/mark/index.html>

**Marine Certification**

This is a system in which an independent body certifies the sustainability of fisheries and the trade in fisheries products.

[Major Marine Certification Schemes]

**Marine Stewardship Council (MSC)**

The MSC is an international non-profit organization that operates this certification system for fisheries industries that consider sustainability and the environment. There are certification for fisheries and a chain of custody certification for marine product traders and others. The organization conducts certification audits of the status of the resource, impacts on ecosystems, and on management systems, based on the MSC "Environmental Standard for Sustainable Fishing."

Reference: Marine Stewardship Council (MSC) <http://www.msc.org>



### Marine Eco-Label Japan (MELJ): Japan Fisheries Association

This is a scheme operated by MEL Japan, established within the Japan Fisheries Association. The Operation Division of the Japan Fisheries Association serves as the secretariat. It handles certification in the production stage (fishery certification), and certification in the distribution and processing stage (chain of custody certification). Criteria for the fishery certification include three components: the management system, target resources, and consideration of the ecosystem.



Reference: Marine Eco-Label Japan <http://www.melj.jp/index.html>

### Other Certification Systems for Natural Resources

#### RSPO Certified Sustainable Palm Oil

This is a certification system of the Roundtable on Sustainable Palm Oil (RSPO), a multi-stakeholder initiative concerning sustainable palm oil. The sustainable production of palm oil and the sustainable supply chain of palm oil are the targets of certification. The former system has eight “RSPO Principles and Criteria for Sustainable Palm Oil Production,” of which one is “Environmental responsibility and conservation of natural resources and biodiversity.”

Reference: The Roundtable on Sustainable Palm Oil (RSPO) <http://www.rspo.org/default.aspx>

## (2) Sales

Impacts on biodiversity can be caused indirectly from the selling of products and services, etc., that have a large impact on biodiversity. Also, if there is a failure to properly identify and differentiate between products and services that are biodiversity friendly and those that are not, this can have an impact on the spread of biodiversity-friendly products, etc., and actually hamper actions relating to biodiversity.

Meanwhile, by conveying information at the time of sale to buyers (such as general consumers) regarding consideration of biodiversity in products and services, it is possible to heighten their awareness of those products, and thereby bring about a change in consumer behavior, to indirectly promote actions for biodiversity.

### Examples of Possible Actions

- Verify the biodiversity impacts of goods and services being handled.
- Properly identify and differentiate items that are biodiversity friendly and those that are not.
- Promote biodiversity-friendly items in the product line.
- Display information about aspects and criteria taken into consideration relating to biodiversity-friendly products and services, etc.
- Promote communication relating to biodiversity, as a part of marketing and promotion activities.

### (3) Investment and Financing

Through investment and lending for projects and businesses, it is possible to have an indirect impact on biodiversity as a result of the activities of projects and business activities of financially related entities.

Note: See (5) through (11) for possible biodiversity impacts of projects and businesses receiving investment or financing.

#### Examples of Possible Actions

- Incorporate consideration of biodiversity into review criteria for decisions on project financing. In particular, in cases where the financing method allows identification of the specific project, apply the Equator Principles when classifying environmental risk; and, where necessary, by demanding environmental impact assessments that include biodiversity as a part of the overall review; also ensure that in terms of biodiversity the investment does not involve land-use changes that may affect land with high conservation value (See “(5) Large-Scale Projects Overseas”).
- When investing in or lending to businesses, verify that the business concerned is considering biodiversity in its activities. (For example, confirm that it has adopted policies for biodiversity conservation and sustainable use, and is incorporating biodiversity into environmental management systems, etc.)
- Consider the Principles for Responsible Investment (PRI) and consider biodiversity as one of the environmental issues and other problems being addressed.
- Develop financial products that consider biodiversity (for example, funds that use a biodiversity index).
- Disseminate information about approaches to biodiversity-conscious financing, and provide useful information to investors.



#### Reference Materials:

- Equator Principles  
These are international standards voluntarily adopted by a variety of financial institutions worldwide. For projects being considered for financing, the financial institution evaluates the project from the lender’s perspective in terms of assessments and management of environmental and social impacts. The Equator Principles were first adopted in June 2003.
- Principles for Responsible Investment (PRI)  
Voluntary investment principles formulated upon the request of the United Nations Secretary-General. Among other things, the PRI list environmental, social, and governance issues to be incorporated into the decision-making processes of institutional investors.
- International Finance Corporation’s Performance Standards on Social & Environmental Sustainability (IFC, 2006)  
The IFC’s Performance Standards define the roles and responsibilities of clients in terms of the client’s project management, and defines the requirements that must be met in order to receive financing from the IFC. There are eight performance standards, of which the sixth is “Biodiversity Conservation and Sustainable Natural Resource Management.”



#### (4) Research and Development

Because business activities such as production processes and construction methods, as well as goods and services themselves, can have impacts on biodiversity, related research and development can cause or reduce impacts on biodiversity.

##### Examples of Possible Actions

- In research and development related to production processes, construction methods, etc., consider impacts on biodiversity.
- When conducting research and development for goods and services, consider the impacts on biodiversity over the entire life cycle.
- Investigate services, and sales and marketing methods that consider biodiversity.
- Consider business models that are biodiversity friendly.
  - Conduct research and development for production methodologies, to reduce the use of material inputs.
  - Conduct research and development for construction methods that can reduce the impacts on biodiversity.
  - Conduct research and development of goods that lead to a reduction of the amount of waste emitted.
  - Conduct research and development on certification methods to indicate considerations related to biodiversity.

#### (5) Large-Scale Projects Overseas

Overseas projects relating to large land-use developments and the development of non-living resources, and the use of living resources, etc., can potentially have large impacts on biodiversity. It is necessary to comply with related legislation and ordinances, etc., in the countries and regions concerned.

##### Examples of Possible Actions

- Implement environmental impact assessments, as needed, based on the special characteristics of the project concerned.
- Flow of Considerations—
- (i) Consider the importance of the impacts of the project concerned on biodiversity and the local community, and judge whether or not it is necessary to conduct research, etc., toward the conservation and sustainable use of biodiversity.
  - (ii) Based on the judgment in (i), conduct research, projections, and assessments of those impacts and related matters, and consider actions and related issues toward the conservation and sustainable use of biodiversity. In the case of land development and other related activities, consider actions based on prioritization of impact avoidance, reduction, and compensatory mitigation measures (projects to create environments similar in type to the environment lost).

- (iii) For implementation of projects, implement the actions considered in (ii) above. Subsequently, as required, determine their results and other impacts, etc., and reconsider the actions, etc.
- When implementing the above, consider seeking the collaboration of external stakeholders, and strive for information disclosure and communication.
  - Using lists and other information about the designation of protected areas and important natural environments, confirm that the project site is not an area considered to be of high conservation value in terms of biodiversity conservation (e.g., national parks, wildlife preserves, areas designated under international conventions such as the World Heritage Convention and Ramsar Convention; habitats of rare wild species – also areas which, even if not officially designated, include vulnerable ecosystems and their surroundings, virgin or high-conservation-value forests, important coral reefs, important wetlands, forests on which local communities depend.)
  - By conducting the actions listed above, a business may find that it has an improved corporate brand image, which may result in improved credibility when developing new similar projects in the future.



#### Reference Materials:

- JBIC Guidelines for Confirmation of Environmental and Social Considerations  
These are standards for procedures and evaluations by the Japan Bank for International Cooperation (JBIC) to confirm environmental and social considerations, and criteria for projects to be financed, etc., which must undergo environmental and social review; the aim is to encourage project-implementing bodies to undertake proper environmental and social considerations in accordance with these guidelines. Checklists for different industrial sectors have also been prepared. The amended guidelines, “Environmental and Social Considerations Required for Funded Projects,” released in July 2009, include newly added approaches to ecosystems and biota.

## **(6) Land Use (Land-Use Change, Building Construction, Land Management, Vacant Land Use, Redevelopment, etc.)**

Land use changes, such as the construction of a factory or business establishment on agricultural or forest land, etc., may cause decreases in size, fragmentation, alterations or other impacts on species’ habitats. Even for land that is not altered, there may be impacts on river ecosystems and marine biodiversity through soil runoff, wastewater discharge, and the construction of structures, etc.

Biodiversity impacts sometimes also cause the degradation of local traditional culture that may be strongly rooted in living resources.

Impacts on biodiversity can also occur as a result of the introduction of alien species and other activities associated with management methods for landholdings, the use of vacant land, and redevelopment. Meanwhile, in some cases, the consideration of biodiversity can increase real estate values. For example, in Tokyo, research has shown a correlation between real estate values (rent value of rental properties, property prices,

etc.) and the ratio of green cover or the extent of green areas in a city (see p. 130).

Note that for land use in Japan, where there is a risk of significant impact on the environment including biodiversity, depending on the characteristics of a project, there may be a requirement to conduct an environmental impact assessment based on the Environmental Impact Assessment Act and other regulations.<sup>9</sup>

#### Examples of Possible Actions

- When making a change in land use, give proper consideration to biodiversity.
- When managing landholdings, consider how to avoid causing negative impacts on local biodiversity (e.g., the introduction of alien species), and consider how to have positive impacts (e.g., the creation of habitat and the creation of ecological networks).
- Regarding land use (e.g., land alteration; construction of buildings; management of landholdings; use of vacant land; redevelopment; fragmentation of aquatic systems such as rivers and lakes, etc.), relevant parties including property owners, managers, developers and builders are to consider the conservation and sustainable use of biodiversity, in keeping with their respective roles.
- When making a change in land use, consider collaboration with stakeholders.
- When making a change in land use, consider communication and collaboration with a variety of external stakeholders, while disclosing information to the extent possible and necessary—from the business entity’s planning stage for the activity, through to the implementation stage. (This may enable more effective environmental consideration, for example, by efficiently obtaining local environmental information, and by understanding the community’s shared vision for the local environment and its unique values.)
  - From an early stage, in order to conduct efficient and effective environmental consideration, through evaluating several alternative proposals, disclose information to the extent possible and necessary, and discuss matters with the aim of communication and collaboration with external stakeholders.
  - Aim for communication and collaboration with external stakeholders, who may possess significant local environmental information that cannot be obtained by business entities working alone. These stakeholders might include government agencies in charge of the environment (environmental departments and bureaus of local governments, local environmental offices of the Ministry of the Environment, etc.), experts, NGOs and NPOs.

<sup>9</sup> A framework for appropriate environmental consideration for large projects that pose the risk of significant environmental impacts. In keeping with the characteristics of a project, from the project planning stage through the project implementation stage, a business entity conducts its own studies, projections and assessments, giving consideration to the opinions of relevant governmental bodies, residents, and others, and reflects the results in the decisions relating to the project plan and implementation. Regarding actions at the stage of developing the project plan, please refer to the “Strategic Environmental Assessment Guideline” issued by the Ministry of the Environment to relevant ministries to request actions.

- Through communication and collaboration with NGOs and NPOs, a business entity's actions may be publicized, and this publicity may have a positive effect on the business entity's main business.

—Changes in Land Use, Construction of Buildings—

- Avoid land developments on land that has high conservation value in terms of biodiversity conservation (see “(5) Large-Scale Projects Overseas”).
- When developing land, a business owner considers biodiversity conservation when selecting the construction contractor, deciding on the development plan, managing the construction, etc.
- When altering land where natural ecosystems remain, the contractor considers reducing the amount of area to be altered, or reducing the impacts on high biodiversity areas to the extent possible, or considers reducing to the extent possible the impacts on areas that are important as part of a network of habitats, and implementing conservation of rare species, etc.
- In the construction of buildings, give proper consideration to biodiversity; when planning, study not only the project site, but also the natural environment in the surrounding area, and consider ecological networks when developing construction plans; when constructing, consider locating temporary structures to not disturb species living there, conduct noise reduction measures, etc.
- For construction activities, consider impacts on biodiversity not only from the construction work itself, but also from the procurement of construction materials, and the handling of construction waste soil and other construction waste.
- When creating areas of greenery, give consideration to the use of endemic species, and be careful about the introduction of alien species. Give consideration to the relationship with ecosystems in the surrounding area, for example, by considering networks of habitats, etc.

—Land Management—

- On corporate green spaces such as company-owned land and company-owned forests, establish biotopes with the aims of conservation of local ecosystems, environmental education for employees, etc. Assess the impacts on biodiversity, through timely monitoring, such as in collaboration with local universities, NGOs and NPOs, etc.
- Undertake multifaceted evaluations of management and operations on landholdings, etc., covered by vegetation, based on evaluation systems for green spaces (e.g., the Social and Environmental Green Evaluation System, or SEGES; see Note).
- Possible parties for consultation include local universities, NPOs, etc.

—Vacant Land Use—

- While considering networks with surrounding ecosystems, plant vegetation to allow the land to return, as quickly as possible, to the type of vegetation that existed before

the land alteration, or to return to the local natural vegetation, etc.

—Redevelopment—

- Create green spaces and biotopes, while considering networks with surrounding ecosystems, and local natural vegetation, etc.

Note: Social and Environmental Green Evaluation System (SEGES) official website: <http://www.seges.jp/>

## (7) Development of Non-Living Resources (Mineral and Energy Resources)

With the development of non-living resources (minerals, energy resources), the stripping of the land surface often results in the loss of large areas of existing ecosystems, the dumping of large amounts of mine waste, and also the development of infrastructure such as roads and ports, etc. Furthermore, in mining and primary treatment processes such as ore processing, a number of impacts may affect river and marine ecosystems as a result of water intake, water pollution, and soil contamination. If activities like the extraction of minerals and rocks, etc., and the disposal of tailings<sup>10</sup> are not conducted properly, the results may be the loss or contamination of soil, and the loss of species' habitat, resulting in impacts on biodiversity. Furthermore, the development of non-living resources may also trigger other developments that can affect biodiversity as a result of the construction of access roads.

These biodiversity impacts sometimes also cause the degradation of local traditional culture that may be strongly rooted in the living resources.

### Examples of Possible Actions

- Investigate biodiversity-friendly extraction methods throughout the planning, construction, operation, closing and completion stages of a mine.

—Planning Stage—

- Avoid mining developments on land that has high conservation value in terms of biodiversity conservation (see “(5) Large-Scale Projects Overseas”). Consider establishing ecological corridors.
- Consider biodiversity-friendly methods for extraction and other activities (e.g., to the extent possible, reduce the area of land to be altered; seek ways to avoid disrupting water flows, and relocate rare species if negative impacts cannot be avoided or reduced).
- Consider biodiversity when selecting the location for tailing dams and road construction, etc.

—Construction Stage—

- Strive to carefully manage construction waste soil, wastewater discharges, etc.
- Prevent soil runoff or leaching from excavation sites, road slopes, and construction

<sup>10</sup> Low-grade ores remaining after extracting usable minerals.

waste soil areas.

- Develop and implement plans to prevent spills, etc.

—Operations Stage—

- Strive to reduce the environmental burdens (water, noise, etc.) of extraction, etc.
- Implement measures to control wastewater, waste materials, chemical substances, and accidents that may occur in the course of extraction, concentration, etc.
- Carefully select disposal sites and implement strict measures to handle mining waste, such as large amounts of waste soil.
- Take measures to prevent oil spills.
- Reduce the consumption of water, energy, etc.

—Mine Closing and Completion Stage—

- On former extraction sites, return the soil cover and leftover soil, and develop and implement plans such as for the planting of vegetation to restore the site to the vegetative cover prior to the alteration.
- Conduct monitoring of leachate.



**Reference Materials:**

- 10 PRINCIPLES (ICMM)

These are ten principles that member companies of the International Council on Mining & Metals (ICMM) in 2003 committed to implement. Principle 7 states, “Contribute to conservation of biodiversity and integrated approaches to land use planning,” and references are also made to matters such as respecting legally-designated protected areas, promoting practices for biodiversity assessment and management, and the dissemination of related scientific data.

- Good Practice Guidance for Mining and Biodiversity (ICMM, 2006)

This guidance was formulated through dialogue between the ICMM and the International Union for Conservation of Nature (IUCN) on various dimensions relating to biodiversity conservation in the mining and metals sectors. It provides information relating to biodiversity that can be used for planning and implementation at all stages of activities by companies engaged in mining, from the exploration stage through mine closure.

## **(8) Operation of the Workplace**

Water pollution due to effluent discharged from factories and other workplaces can potentially affect species’ habitat in rivers and marine areas. Furthermore, although much is still unknown, it has been pointed out that chemical substances may pose risks of impacts on ecosystems. It has also been pointed out that light (nighttime lighting, etc.) has impacts on living organisms, including insects and plants.

As for operations at workplaces, it is requested to observe effluent standards, etc.

### **Examples of Possible Actions**

- Regarding wastewater volume, water quality, chemical substances, etc., implement measures to assess their biodiversity impacts, confirm the types and amounts, etc., and implement measures and steps to reduce such impacts.

- Regarding lighting, give adequate consideration, depending on the location and other factors, to prevent light leakage,<sup>11</sup> and to control lights depending on the season of the year and time of day, etc.



#### Reference Materials:

- Guidelines for Light Pollution Control Measures (Ministry of the Environment, 2006)  
The excessive or inappropriate use of lighting has been reported to negatively impact astronomical observations, cause discomfort due to brightness, reduce the ability of people to discern important information from traffic signs and signals, and to have negative impacts on wild fauna and flora and crops, etc. These Guidelines were formulated with the aims of creating a better lighting environment and contributing to efforts to stop global warming, by promoting the optimal use of outdoor lighting. This document explains the impacts of artificial light on living organisms and offers approaches for countermeasures.

## (9) Use of Living Resources

Examples of the use of living resources include the use of fisheries resources, forest resources, and agricultural resources.

The excessive use of fisheries and forest resources can lead to the destruction or deterioration of individual species or entire ecosystems.

Converting land for plantations, afforestation, and the building of aquaculture farms, etc., can lead to changes in natural ecosystems, and may cause changes to the habitats of living organisms. Meanwhile, tree-planting projects and other activities on degraded land can restore forests, thus creating species' habitat.

With regard to agricultural products, the excessive use of agricultural chemicals and fertilizers or the use of harmful chemicals and fertilizers, as well as activities for improving farmland and watercourses that put priority on economy and efficiency, can affect biodiversity.

Such biodiversity impacts sometimes also cause problems for the local economy and society, as well as traditional cultures that may be strongly rooted in the living resources. On the other hand, the consideration of biodiversity may lead to opportunities, such as gaining the trust of stakeholders.

Conversely, reduced human utilization of living resources, such as found within Japan's "satoyama" (the mosaic of forest and agricultural lands traditionally maintained by rural communities) can actually lead to declines in species that had once been commonly seen, and to loss of biodiversity; in such cases, the sustainable utilization of living resources can lead to the conservation of biodiversity.

### Examples of Possible Actions

- Use living resources with an emphasis on conservation and sustainable use of biodiversity.

<sup>11</sup> Light from lighting fixtures that illuminates areas other than those intended.

- Study past experience to determine if land and marine areas subject to the use of living resources are areas having high biodiversity conservation value.
- Avoid land-use conversion on land that has high conservation value in terms of biodiversity conservation (see “(5) Large-Scale Projects Overseas,” on p. 71). Alternatively, take the approach of using zoning to classify areas that can be used for economic activities and those that should be left untouched.
- Carry out appropriate monitoring of changes in ecosystems, and be flexible in revising management and usage activities depending on the results of the monitoring (adaptive approaches, etc.).
- Conduct timber production activities, etc., based on the “Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests” issued by the International Tropical Timber Organization (ITTO).
- Consider biodiversity by making use of certification systems for sustainable forestry and fisheries.
- Avoid the use of alien species as pollinators or for exterminating pests.<sup>12</sup>



**Reference Materials:**

- Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests (ITTO, 2008)

These Guidelines were adopted by the ITTO in 2008. They provide guidance for forest-policy makers, forest owners, forest managers, and others, regarding methods to conserve biodiversity in tropical timber production forests. They are an amended version of earlier guidelines issued in 1993. The Guidelines provide eleven principles of biodiversity conservation in tropical timber production forests, plus guidelines and priority actions, etc., for each principle.

**(10) Transport**

Biodiversity impacts may arise from the introduction of alien species through the transport of goods, etc., including impacts on marine and coastal ecosystems as a result of ship ballast water and organisms attached to ships’ hulls.

**Examples of Possible Actions**

- Consider how to avoid transporting alien species into an area.
- Consider biodiversity when establishing transport routes.
- Take measures such as using low-emission vehicles, preventing vehicle engine idling, etc.
- Consider and implement countermeasures relating to ballast water.
- Take steps to control insects, seeds, etc., attached to containers, pallets, etc.
- Cooperate with quarantine systems, undertake voluntary fumigation, etc.

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<sup>12</sup> Pollinators include insects that act as a medium for transmission of pollen required by plants. Examples include bees, flies, moths, etc. (see p. 130).



## (11) Outdoor Tourism

Tourism poses risks of impacts on biodiversity, through the construction of facilities such as lodging and parking lots, discharges from facilities, illumination of natural sites, emissions associated with transporting travelers, and the large-scale planting of decorative varieties of plants in natural areas, etc.

Furthermore, tourism poses risks of impacts on biodiversity when tourists and travelers are brought into areas including mountains and wetlands, resulting in damage to plants from being trampled when people walk off paths, discarding of wastes, and the introduction of non-native plants when seeds are carried on shoes, etc.

### Examples of Possible Actions

- Consider biodiversity when constructing accommodation facilities, parking lots, etc. (see (6) “Land Use,” p. 72-).
- Consider biodiversity when planning discharges from and illumination of accommodation facilities, etc. (see (8) “Operation of the Workplace,” p. 76).
- For the transport of tourists and travelers to tourist destinations, consider biodiversity through actions such as preventing vehicle engine idling, and by using low-emission vehicles, etc. (see (10) “Transport,” p. 78).
- Solicit local input regarding consideration of local biodiversity in the planning and implementation of tours.
- When guiding tourists and travelers, give consideration to information provision and awareness raising so that they avoid inadvertently damaging plants by walking off paths and trample them, do not discard waste improperly, etc.
- Make an active effort to use local food ingredients, and promote local production for local consumption.

### Reference Information **Ecotourism**

- In recent years, awareness about the environment has increased, and demand for the direct experience of nature has also increased.
- At the same time, in some cases, concerns have been raised about impacts on biodiversity resulting from short-term excessive impacts from tourism.
- In this context, the Act on Promotion of Ecotourism was passed into law in June 2007, and it entered into force in April 2008, setting forth a comprehensive framework relating to regional ecotourism activities, with the aim of preserving the natural environment of Japan for future generations, and contributing to the assurance of a healthy and cultured lifestyle for citizens.
- “Ecotourism” is an activity whereby tourists and travelers receive explanations and advice from persons knowledgeable about natural touristic resources, and come in contact with those resources and contemplate their conservation while deepening related knowledge and understanding. (Reference: Act on Promotion of Ecotourism, Article 2)

#### Ecotourism Basic Rationale, etc.

The basic rationale for ecotourism is the use of the natural environment as a place for conservation and environmental education, and for activities to stimulate the tourist industry and local economies; for these activities, it is desirable to take voluntary actions while developing local innovations and adaptations.

#### Factors to Consider relating to the Protection of Biodiversity in Ecotourism

- Implement tourist activities in keeping with previously established rules and norms, continuously monitor the condition of the natural resources valuable for tourism, evaluate the results scientifically, and consider how to reflect these results in adaptive management approaches to uphold desired rules and activities.
- In natural areas of high vulnerability, such as wetlands, alpine vegetation, etc., operate with flexibility, such as by limiting the number of users, as necessary, and consider ways to avoid concentrated use in specific areas—by discovering and creating new natural touristic resources.
- Consider how to avoid negative impacts on endemic biota and ecosystems—impacts from alien species (invasive species) introduced from overseas or other areas within the country, whether intentionally or unintentionally, at a range that exceeds the natural mobility of wild species. Consider how to avoid causing disturbances at the genetic level such as by the release in other areas of killifish, fireflies, etc., with different genetic characteristics even among the same species.
- In areas where biodiversity has deteriorated as a result of the reduction of human activity in nature—for example in villages and “*satoyama*” that have traditionally been maintained in the context of human activities—it is hoped that the use of ecotourism (such as incorporating land upkeep activities into the program) will restore biodiversity.



#### Reference Materials:

- Basic Guidelines for Ecotourism  
These Guidelines were adopted on June 6, 2008, based on the provisions of Article 4, Paragraph 1, of the Act on Promotion of Ecotourism. The Guidelines indicate the directions for ecotourism to aim for, and set forth basic points for use when regions promote ecotourism, so as to regain the connections between people and nature, and among different people, as well as in order to create healthy local communities and society while also conserving biodiversity.

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This section introduces concepts and considerations for actions relating to biodiversity conservation implemented as social contribution efforts.

**Background**

Human society has advanced by enjoying the benefits of biodiversity, while also placing burdens on it. Humanity can only exist if it has sustainable societies able to enjoy the benefits of biodiversity into the future—but the present day's crises of biodiversity and ecosystems services have become serious problems. It is therefore important to promote the conservation and sustainable use of biodiversity.

Businesses are not only profit-seeking economic entities, but are also members of society, and it is hoped that through their activities they will contribute to the conservation and sustainable use of biodiversity.

It is hoped that business entities will not only contribute to society through their core businesses and through managing the environmental impacts of their business activities, but also that they will conduct social contribution efforts on issues relating to biodiversity—issues that cannot be resolved simply by reducing their impacts on biodiversity.

**Approaches to Actions****Considerations from the Perspective of Biodiversity**

- Consider implementing actions with a long-term perspective, based on the fact that long-term actions are important for the conservation and sustainable use of biodiversity.
- Clarify objectives, and consider how the activities in question impact and effect biodiversity.
- Regarding tree-planting activities, which are commonly implemented as social contribution efforts, when securing land, avoid converting natural forests and other natural ecosystems (see (9) "Use of Living Resources," p. 77-).
- Gather knowledge relating to local flora and fauna, and make the greatest possible effort to avoid the use of alien species.
- Consider how to implement tree planting with consideration of biodiversity at the genetic level—for example by not causing genetic disruption (genetic pollution) of local varieties of native species.
- Consider making contributions in a variety of ways, not only in areas relating to a business entity's core business, but also by making flexible use of its technological and economic capabilities.

### Some Thoughts on Collaboration with Stakeholders

- From planning to the implementation stage of actions, consider promoting partnerships, information disclosure, and communication with a variety of external stakeholders.
- For the formulation of strategies relating to biodiversity as a part of social contribution efforts, and the planning and implementation of monitoring, it is also effective to collaborate with stakeholders such as local residents, local public entities, and educational and research institutions that have a high level of expertise related to local ecology and environmental sociology, etc.
- In addition to collaboration with external stakeholders, planners should also consider the participation of a broad range of related actors, including members and employees of business entities, their families, etc.
- For collaboration with external stakeholders, particularly with NGOs and NPOs, consider working with a broad range of organizations, and collaborate based on a long-term perspective of having all parties benefit—both the business entity, and NGOs and NPOs.
- Through collaboration with NGOs and NPOs, a business entity's actions may be publicized, and this may have a positive effect on its environmental image.

#### Examples of Possible Actions

- Implement contribution activities relating to the conservation of local biodiversity both in Japan and overseas, along with proper management, restoration, etc.
- Implement contribution activities relating to the conservation, etc., of species diversity, both in Japan and overseas.
- Implement contribution activities relating to the removal, etc., of alien species.
- Implement environmental education and public relations activities, etc., relating to biodiversity.
- Implement actions, keeping in mind the perspective of mutual development, while aiming for biodiversity-related collaboration with NGOs and NPOs, local residents, local public entities, research institutions, etc.

This section introduces examples of cutting-edge actions that have been carried out by business entities; these examples may serve as useful references for business entities considering actions related to biodiversity, consistent with the issues covered in Reference 1 through Reference 4, including “Actions by Business Entities in Key Contexts.”

Because the aim of this document is to introduce the variety of initiatives undertaken by business entities, and not to publicize particular profit-making corporations, the names of companies are therefore kept anonymous.

Information on additional actions by companies that are members of the Nippon Keidanren Committee on Nature Conservation is available through the following website.

Nippon Keidanren Committee on Nature Conservation website with examples of actions

[http://www.keidanren.or.jp/kncf/en/members\\_activity\\_index.html](http://www.keidanren.or.jp/kncf/en/members_activity_index.html)

### Concrete Example 1: Establishing Action Guidelines

Company Information	Business Activities	Construction, development, design and engineering, etc.
	No. of Employees	Approximately 8,800 (as of 3/31/2008)
	Year Established	1930 (founded in 1840)

#### Background

##### Background for Action Guidelines

Company A mentioned “conservation of ecosystems” in its Environmental Policy and as part of its medium-term environmental targets, but efforts to conserve ecosystems were confined to individual projects (planning, construction, etc.). Because there were no specific guidelines or framework in place, it proved difficult to implement policies across the company. Also, while Company A was a leader among general construction companies in ecosystem-related technologies, a low level of recognition of these technologies within the company resulted in many instances in which there was not an appreciation of the effectiveness of consideration of ecosystems in the upstream project planning stage. To address this lack of effort on a company-wide basis, a study group was voluntarily formed around 2004 by a group of ambitious young employees, which took the leading role in forming the Ecosystem Conservation Committee (later renamed the Biodiversity Conservation Committee) as an expert committee under the company-wide Environmental Committee. This committee was comprised of members from the Technical Research Institute, the Civil Engineering Management Division, the Civil Engineering Design Division, the Building Construction Management Division, the Architectural Design Division, the Real Estate Development Division and the Environmental Engineering Division.

With increasing public interest in biodiversity, this became an increasingly important aspect for the smooth operation of projects in the construction business, which is a field in which human society and the natural environment meet head on. Also recognizing the fact that this area could present new business opportunities, this committee took a central role in formulating the “Company A Ecosystem Conservation Guidelines” in August 2005.

## Details

**Company A Ecosystem Conservation Guidelines (full version)****Fundamental Principles**

Company A conducts its construction business with the aim of establishing a high-quality infrastructure for society that supports human lifestyles and industrial development, as a social mission to realize a “truly comfortable environment for people.”

In the 21st century, building a sustainable society based on harmonious coexistence with the natural environment is fast becoming the most pressing issue for humanity. Japan formulated its revised National Biodiversity Strategy of Japan in 2002, and the importance of biodiversity and ecosystem conservation has now been widely accepted throughout society.

In recognition of this, Company A has placed a high priority on the social mission of conservation of ecosystems, based on the following guidelines, and pursuing sustainable development for society, its clients and the company through strategic measures for ecosystem conservation.

**Conservation Guidelines**

1. Management Systems: Company A places importance on ecosystem conservation as an important issue for environmental management, and will promote ecosystem protection measures in its business activities.
2. Compliance: Along with respecting laws relating to ecosystem protection, Company A will inform itself of relevant government policies and social concerns, and strive to reflect this knowledge in its business activities.
3. Education: Company A will educate its employees on matters such as basic knowledge necessary for ecosystem protection, relevant laws, applicable technology, and prior cases, and increase employee understanding of ecosystem value.
4. Construction Business Measures: Company A aims to protect and create sound ecosystems through its construction business, by ensuring good communication with customers, communities, and society, by including environmental information and technology in customer proposals, and by taking environmental measures during construction.
5. R&D: Company A will gather information on ecosystems and knowledge of applicable technology, and actively promote relevant research and technology development.
6. Social Contribution: Company A will actively undertake cooperation with academic societies, while supporting employee volunteer activities, and community activities for ecosystem protection.

**Key Details**

- Constructed an “Ecosystem Information Management System” to share information about technologies owned by the company and its track record in applying these technologies. Able to acquire and utilize appropriate information such as related laws and regulations and social trends at any stage, from planning to design to construction.
- Developed the “Company A Introduction to Ecosystem Conservation and Biodiversity” as an internal educational kit, and making use of it for in-house education.
- Incorporated biodiversity into the environmental management plan and added a chapter about ecosystems to the “On-Site Environmental Management Handbook.” a textbook that all on-site workers must carry.

### *Difficulties*

- With respect to the “Ecosystem Information Management System,” in some cases, innovative ways of addressing issues are not shared beyond the worksite, so there has not been an increase in examples inputted into the system.

### *Successful Initiatives*

- By formulating guidelines, a shared understanding between related internal departments and senior management has been achieved.
- The guidelines have functioned as a “backbone” for ecosystem conservation-related initiatives and technology development, which has made it easier for company officers to carry out work.
- By establishing the guidelines at a relatively early stage, the company became recognized as a leader in the construction industry with respect to biodiversity.

**Concrete Example 2: Actions in Food Manufacturing and Related Industries**

Company Information	Business Activities	Foods, amino acids, pharmaceuticals, health
	No. of Employees	Approximately 3,600 (as of 3/31/2008)
	Year Established	1925 (founded in 1909)

**Background**

Company B Group has developed locally-rooted businesses throughout the world, centered on food, amino acids and health. The Group's business activities depend on ecosystem services; the raw ingredients for its products come from agricultural and fisheries resources, and genetic resources are used in its fermentation technologies and the other biotechnologies that the Group excels in. The Group would not be able to maintain or expand its business activities without sound ecosystems and rich biodiversity.

In celebrating its 100th anniversary, Company B has reflected on its first 100 years and has set "working for life" as its goal for the next century. Supported by the functions of living things and the benefits of nature, Company B, which is "working for life," recognizes that it must make efforts through its businesses to support the global and regional environment, as well as ecosystems and biodiversity, which support healthy lives. Based on this understanding, the company has positioned conservation of ecosystems and biodiversity as one of its most basic and important initiatives.

**Details**

Ecosystems and biodiversity comprise the foundation of all business activities. In order to protect these, efforts across a wide range of areas are needed, including the construction of management systems and the utilization of these systems in business operations. All initiatives to protect the environment and promote sustainability are related to conservation of ecosystems and biodiversity. Key initiatives closely related to ecosystems and biodiversity implemented thus far are as follows:

- Conduct business activities based on the recognition that ecosystems and biodiversity are the most fundamental environmental issues (stating this in its Environmental Philosophy and Basic Policies, confirm that business plans and product development projects take ecosystems and biodiversity into consideration)
- Proactively consider biodiversity when procuring raw materials and goods
- Partner with primary industries and local communities that support these to pursue and support agriculture, livestock and fishing that do not impact the ecosystem
- Promote biodiversity-related joint research and partnerships with companies and NPOs
- Design business sites which utilize local nature

The following is an example of an initiative concerning fishery resources.

Company B Group uses a variety of fishery resources. For example, it is estimated that bonito fish used by the Group accounts for several percent of Japan's total catch. In order to maintain a sustainable supply of bonito, Company B has begun working with people in the fishing industry and researchers to study the bonito's ecology and the stocks of bonito in the ocean. The studies have shown that the bonito has not been overfished and that there is a rich supply in the ocean. However, there is rising concern about future supply, given the increase in global seafood consumption and effects of climate change, etc. Thus, Company B is partnering with various relevant parties to consider the best ways to ensure a sustainable supply of bonito going forward.

Also, Group companies have evolved their thinking from "procuring resources" (depletion) to "re-producing resources" (sustainability), and are aiming to protect and secure resources by (1) increasing the use of managed fish-farming and cultivated items, (2) confirming for themselves that the impact on the natural environment is small, and (3) supporting sustainable activities.



Going forward, Company B will need to clarify in specific terms the relationship between its business activities and biodiversity. The Company recognizes that it must shift from recognizing biodiversity as being important to developing specific programs that address key issues built on a comprehensive understanding of the company's interrelationship with biodiversity.

**Concrete Example 3: Actions in the Food Service Industry**

Company Information	Business Activities	Hamburger steak restaurants and other restaurants
	No. of Employees	Full-time: Approximately 700; Part-time: Approximately 2,800 (as of March 2008)
	Year Established	1976 (founded in 1968)

**Background**

Company C is the headquarters of a restaurant chain that operates hamburger steak restaurants. In addition to ensuring that its food is safe and customers feel comfortable eating at its restaurants, the company believes that it is essential to carry out initiatives in agriculture, which is the base for food production, as well as work to conserve the natural environment.

One reason for this is that the restaurant industry depends on sustainable agricultural production. The loss of biodiversity, climate change, or an increase in pollutants will result in a drop or stoppage in the supply of food and other items used in restaurants. If this happens, business activities will be disrupted.

Furthermore, the company has stated that its mission, or *raison d'être*, is to resolve problems in society, and that it considers addressing environmental problems, such as those discussed in the Framework Convention on Climate Change and the Convention on Biological Diversity, as one of its obligations as a company.

**Details****Prohibiting the use of, and working to exterminate exotic insects used in agricultural production as an effort to conserve biodiversity**

Since 2005, the company has been working with contracted farmers towards ending the use of the Buff-tailed Bumblebee (*Bombus terrestris*, an exotic insect, see Note) which had been used in production of tomatoes in greenhouses, and making sure that no such tomatoes were procured by restaurants under direct management (completed in 2008). Likewise, the company has been working with local residents and farmers since 2004 to rid neighboring rape blossom fields of this insect (ongoing effort).

Note: *Bombus terrestris*: Designated as a specified exotic organism under the Non-Native Organisms Act.

**Purchasing biodiversity-friendly food as an effort to contribute to sustainable use**

In addition to purchasing tomatoes as discussed above, research on species is being conducted on some of the fields and rice paddies of the rice farmers producing rice for the hamburger steak restaurants, and on the Group companies' fields and rice paddies, in order to study and observe how the biota is changing in areas where pesticides are not being used. While this does not represent academic data, they are thinking of continuing the studies in order to reflect the results in procurement standards, etc.

**Holding symposia and events related to the eradication of alien species and the study of living organisms in order to raise the level of interest in biodiversity**

In 2003, the company held the "Hokkaido-New Zealand Biodiversity Symposium" and arranged opportunities for local residents to learn about biodiversity. Also, by having local residents participate in the aforementioned efforts to get rid of *Bombus terrestris* and study the organisms in agricultural fields, as well as by having elementary school students join as part of their integrated studies curriculum, these activities have given many people a chance to learn about biodiversity.

***Benefits***

Benefits of the program include the following: striving for agriculture that is in harmony with nature; taking biodiversity into consideration when purchasing goods; finding new innovations for pursuing better food and materials, as efforts are directly connected to the food industry; and increased opportunities to have Company C share its approach to food with local residents and communities by working with them to study living things.

## Concrete Example 4: Environmental Conservation Actions Utilizing the Core Production Business of the Brewing Industry

Company Information	Business Activities	Sake brewing
	No. of Employees	13 (includes part-time workers, as of July 2009)
	Year Established	1961

### Background

Company D is a sake brewery located near Lake Kasumigaura. The company was approached by an NPO with an office in the area and asked if it would brew sake using rice (of a special kind used for sake) produced as part of a nature revival project in the Kasumigaura watershed carried out jointly by the NPO and an electronics manufacturer. Company D agreed to the request, as it would be a way of contributing to environmental conservation in the Lake Kasumigaura area through its core business.

### Details

#### *Overview of Initiative*

Company D is participating in an environmental conservation project in the Kasumigaura watershed (the Yatsuda Revival Project). As part of a joint effort by an NPO and an electronics manufacturer to revive *yatsuda*<sup>13</sup> in order to contribute to the improvement of Lake Kasumigaura's water quality, Company D was asked to brew Japanese sake using the rice from wet low-lying paddy areas.

Employees of the electronics manufacturer and their family members participated in growing the rice in a *yatsuda* area, and Company D provided them with an opportunity to take part in brewing the sake as well.

The future aim is to promote the conservation of the local environment through a cycle in which rice harvested from local environmental conservation programs is used locally to make sake, which is sold locally and consumed by people in the local community. Company D recognizes the significance of contributing to the revival of Lake Kasumigaura by participating in the creation of such a cycle, and is able to conserve the local environment through its core business and support the program being carried out by other companies and the NPO.

#### *Difficulties*

The flavor of sake is determined by the rice quality and the degree to which the rice is polished. The rice used in this project was not of high quality, since it was grown without the use of pesticides or fertilizers. As a result, they had a somewhat difficult time finding the right balance of sugar and alcohol in the main fermenting mash<sup>14</sup>, and struggled to a certain extent with the temperature management of the malted rice<sup>15</sup> and yeast mash<sup>16</sup>.

#### *Benefits of Actions*

This program provided a good opportunity for individuals in the company to interact with people in the local NPO and employees of the electronics manufacturer. It was also a good chance for parents and children to spend quality time together and for children to have hands-on interaction with nature. Additionally, it helped rejuvenate the local community and had social welfare-related benefits as well. Because it was a program through the company's core business, the company was able to naturally contribute to the revitalization of local industry.

13 Wet, low-lying paddy areas in ravines.

14 Brewed sake that still has residues remaining.

15 Made by steaming rice and cultivating the koji mold (*Aspergillus oryzae*) in the rice.

16 Made by cultivating yeast mash, which is needed to brew Japanese sake. Made by adding yeast to malted rice, steamed rice and water.

Furthermore, it was an example of three different entities (an NPO, an electronics manufacturer, and a brewery) having three different objectives (conserving the Kasumigaura watershed environment, stimulating environmental awareness through a hands-on experience, and conserving the environment through a core business, respectively) forming a partnership and achieving each of their objectives. This project allowed an NPO and businesses to work together and create interaction with the local community while stimulating local industry.

The effort to revive the natural environment and grow rice without pesticides or fertilizer resulted in the making of sake, and the meaning behind this sake was able to be communicated to a large number of consumers. This sake was meaningful in the following ways:

- People were interested in the project.
- It is a result of reviving nature.
- It taught people that maintaining the ecosystem and rich biodiversity yields the “blessing” of sake.
- It provided a concrete example of rice farming and sake brewing that is compatible with plant and animal life.
- It brought together the traditional wisdom of the local community, and has become the basis of a network connecting differing aims, such as ensuring food safety and peace of mind, and conserving biodiversity, which were the aims of the NPO and the businesses involved.

#### *Future Development*

With some additional cooperation, this community effort can become a model of a program that creates a “material-recycling society” through revitalizing and conserving the natural environment. To achieve this, it is important that all involved parties make an effort to continue the program with a shared understanding that it is a program that will take 100 years for its aims to be realized.

#### *Message*

Just growing rice without the use of pesticides and fertilizer would make this activity a success as a nature revival project, but by making sake from the rice many people are able to learn the significance of the sake. This sake is meaningful in a number of ways: people are interested in it; it contributes the revival of nature; it maintains the ecosystem and biodiversity; the rice farming is in harmony with plant and animal life; and it leads to food safety and peace of mind.

The project is also deeply-rooted in the community with the participation of local businesses, and helps revitalize the local economy.

If this type of program were to spread to other sake breweries throughout the country, there would be a regeneration of lost *satoyama* landscapes, and plant and animal life would once again flourish.

## Concrete Example 5: Actions Related to Procurement of Material Inputs (Palm Oil)

Company Information	Business Activities	Development, manufacturing and sales of residential and industrial use soaps, disinfectants, oral rinses and other hygiene products, dispensers, health foods, etc.; consulting related to food and occupational sanitation, other
	No. of Employees	Approximately 600 (as of June 2008)
	Year Established	1952

### Background

Company E's relationship with palms dates back to its founding in 1952. The company's initial product, a medicated soap, was made using palm oil. In 1971, when detergent pollution became an issue, the company developed a plant-derived neutral kitchen soap and began selling it as a commercial soap for school cafeterias and similar facilities. The product then became available to the general public in the 1980s, and went on to become Company E's leading product. The advertising phrase used for many years on this product is "Good for your skin and the environment." The reason it claimed to be good for the environment was it was highly biodegradable by microorganisms after entering the wastewater stream. The detergent was formerly made only from palm oil taken from coconuts (native to Asia), but around 1990 the company began to combine palm kernel oil extracted from seeds of the African oil palm (*Elaeis guineensis*, native to West Africa), which is very similar to coconut oil in terms of its elemental composition.

However, starting around 2000, the media began to report on the disappearance of the tropical rain forests in Malaysia and Indonesia in conjunction with the rapid expansion of oil palm plantations, and the associated crisis facing wildlife. This was followed by reports that this product, which was supposed to be good for the earth, was made from ingredients whose procurement was in fact harming the environment. These reports led to consumer boycotts and other unfavorable reactions. After being interviewed by reporters for a special TV feature about Borneo that aired in August 2004, the company began an on-site investigation as well as conservation activities. When activities were launched, it became clear that there were major problems with the development of oil palm plantations in Malaysia and Indonesia, and while the situation was completely unknown in Japan, approximately 90% of the palm oil extracted from oil palm was consumed as cooking oil, and its production method was being vehemently criticized by NGOs and others in Europe. The Roundtable on Sustainable Palm Oil (RSPO), an international initiative related to the palm oil industry, was subsequently formed, amid strong calls for wildlife conservation in places such as Sumatra and Borneo.

### Details

In December 2004, the company sent an international cooperation expert hired as a contract employee to Borneo to begin research as a way to start its efforts to address this issue. The expert studied the activities being carried out by JICA's Borneo Biodiversity & Ecosystem Conservation Program (BBEC) as well as the work being carried out by international NGOs, and held interviews with relevant people to learn about the situation. In January 2005, Company E was the first Japan-headquartered company to join the RSPO as a direct participant. In addition, the company began working with the Sabah Wildlife Department on a project to rescue the Borneo elephant, which was facing extinction, which was even highlighted in television programs. In November 2005, at the Second General Assembly at the 3rd Roundtable Meeting of the RSPO, a resolution to restore forests within 1 kilometer of both shores of key rivers where oil palm plantations had been developed was submitted to the General Assembly, but it was shelved following opposition from plantation members. Realizing that it would be necessary to establish an organization to carry out this plan, a former JICA wildlife specialist sent on assignment to the area worked with the Sabah Wildlife Department to establish an organization licensed by Malaysia's Sabah State Government in October 2006 in Kota Kinabalu.

Company E's president served as a director of this organization. The program's concept was to first work in the Kinabatangan River watershed where international NGOs had already done some environmental monitoring studies, then establish a "Green Corridor" where wildlife could survive, and then spread this successful model throughout Asia. Starting in May 2007, Company E supported this program by giving the organization 1% of its sales (of the amount sold by the manufacturer) of the aforementioned detergent. At the same time, the company launched a campaign targeting consumers to inform them about the palm oil industry, in which most palm oil is used as cooking oil. Information was disclosed through advertisements, websites, at stores, and in other ways. However, efforts by Company E alone to inform the public were insufficient, so in May 2008, a group to support this organization in Japan was established. Help has been received from individuals, zoos and companies, and the support network throughout the country has expanded.

Through this effort, the company focused mostly on risk management for the brand, which symbolizes the corporation's dedication to detergent. At the time, when there was a lack of precedent, and when CSR and biodiversity were just starting to become hot topics, the company disclosed as much information as possible despite the risks involved in the procurement of its raw materials, and not only provided financial assistance but also sent company officials to the local area and directly communicated with relevant parties on an ongoing basis. Such efforts proved to be extremely important.

As a privately held company, the high level of concern for the environment on the part of the executives themselves was also a key factor in ensuring that the program proceeded smoothly.

## Concrete Example 6: Actions Related to Company-Owned Forests and the Procurement and Distribution of Timber

Company Information	Business Activities	Forest development, harvesting and management, both within Japan and overseas; import, manufacturing, processing and sales of lumber and construction materials; housing and housing-related business, real estate sales and rentals
	No. of Employees	Approximately 5,100 (as of 12/31/2008)
	Year Established	1948 (Founded 1691)

### Background

Company F manages approximately 40,000 ha. of company-owned woodlands in Japan. Also, in addition to being Japan's largest distributor of timber and construction materials, it is the leading supplier of custom-built wooden houses. The company's activities thus cover the entire spectrum from the upstream business to the downstream business, from forest development to home construction. As a company involved on a global basis in all businesses related to wood and housing, and given the decline in forests throughout the world, in October 2005 Company F established its own timber-related procurement standards and introduced a process for confirming the legality of the timber it procures. Also, in June 2007, Company F established and released its Timber Procurement Philosophy & Policy, which stipulates the company's philosophy on biodiversity conservation. This document expressed Company F's desire to fulfill its social responsibilities as a leading company in the field of timber, and was written following repeated discussions with third-party experts in the Timber Procurement Subcommittee comprised of multiple departments. Company F is proactively working to accomplish the main action targets, which include using timber that has been confirmed as legal, using domestic timber, promoting the use of timber from plantation forests and expanding its tree-planting program.

### Details

Company F manages its company-owned woodlands in Japan (approximately 40,000 ha.) based on its *Basic Policy on Biodiversity Conservation*, and obtained forest certification from the Sustainable Green Ecosystem Council (SGEC) in September 2006. The company also produces its own Red Data Book from the standpoint of biodiversity conservation. In fiscal 2008, in order to ascertain the impact of its forest-related policies on biodiversity, Company F formulated a monitoring system for birds and mammals as an indicator, beginning with company-owned woodlands in Shikoku Region.

Company F's Timber Procurement Review Subcommittee, which meets regularly, examines the legality and traceability of timber that it handles, based on the Timber Procurement Standards that the company has established for itself. If document review alone is insufficient for confirming the timber's legality, local employees and/or head office employees dispatched to the logging area work on such confirmation. In fiscal 2007, the company completed the examinations of all overseas suppliers that it directly imports from, with two-thirds of them being confirmed as legal. For the others, the company is continuing its review in order to confirm the rules in the producing country or because documents and other information was insufficient. In checking legality, there are instances when the company needs to hold detailed talks with other parties to ensure traceability, even those parties having only indirect impacts on the supply chain. These cases include instances when, during the process between the logging activity and the import to Japan, the country producing the logs is different from the country where the logs are processed, when there are a number of sources of logs at a local sawmill, or when the scale and/or frequency of transactions with the supplier makes it necessary. Such confirmation work is sometimes extremely difficult, and there are various issues which are difficult for one private enterprise to resolve on its own. In the future, the company will need to work with NGOs and government authorities in order to reach its goal of using only lumber that has been confirmed as being legal.

Company F Group's domestic and overseas production plants and the Wood Products Trading Division of the Timber & Building Materials Business Headquarters have obtained Chain of Custody (CoC) certification from the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification Schemes (PEFC) and the Sustainable Green Ecosystem Council (SGEC), and the company is working to expand the distribution of certified timber from forests where biodiversity is maintained. The company is also working to produce wood products using timber from plantation forest trees in a manner having a high level of transparency.

Proactively using domestic timber results in a relative improvement in "wood mileage," ensures legality, contributes to the regeneration of Japanese forests, and ultimately helps conserve biodiversity. From this perspective, Company F is working to increase the ratio of domestic wood for key structural members used in homes. The company set a target of increasing the ratio of key domestic timber to 70% during fiscal 2008.

Going forward, Company F will continue to proactively work to increase its use of wood from plantation forest trees, timber from certified forests, Japanese timber, and to also actively plant trees, as it continues its corporate activities that benefit the environment, the economy and society.



## Concrete Example 7: Actions Related to Residential Construction

Company Information	Business Activities	Contracting of industrialized housing, real estate sales, etc.
	No. of Employees	Approximately 22,000 (consolidated; as of 1/31/2009)
	Year Established	1960

### Background

#### Ecosystem-friendly Landscaping and Greenery Business

The housing industry has a significant impact on the natural environment, as it involves the large-scale use of natural resources, land development, and other activities that impact the environment. In procuring raw materials and developing land, this company formerly focused on protecting the natural environment on an individual project basis.

However, in order to draft a more advanced environmental management policy that could be applied on a company-wide basis, in 1999 the company established its Environmental Future Plan, its own basic policy on the environment. After gaining experience in urban development that took environmental conservation and greenery planting into consideration, in 2001 the company enhanced the plan, adding “developing gardens that enhance life” as one of its values, and launched landscaping and greenery work that involved planting both native and indigenous species of plants that are of high value to living things. Although intended to conserve local ecosystems and biodiversity, a name was chosen that would evoke thoughts of birds and butterflies.

#### Timber Procurement Guideline – Biodiversity-friendly Supply Chain Management

Furthermore, in 2005, the company announced its Declaration of Sustainability. The declaration defines the core of its management as contributing to the building of a sustainable society, positioning “a balanced, global eco-system” as the foundation of a sustainable society. In 2007, as part of its considerations for developing its business model, the company decided to work with its supply chain to procure the massive amounts of timber needed for building houses from sustainable forests where no species are threatened by extinction.

### Details

#### Ecosystem-friendly Landscaping/Greenery Business

In planning this business, the company used *satoyama*, a unique Japanese concept for the natural environment, as a model. The Japanese people have developed a culture that supports a rich ecosystem by appropriately taking care of the natural environment. By planting both native and indigenous species of plants suited to the local climate, the company is aiming to create small natural environments within the confines of gardens. By doing so, the home gardens produced by the company and town areas can become connected like stepping stones, and these gardens then become connected to forests in the outskirts of urban areas and the rural backwoods. In this way, the company is aiming to create a “network of nature” that is effective in both conserving the ecosystem and biodiversity as well as adding new vigor to both.

People living in urban areas have fewer opportunities to enjoy nature than before. By having birds and butterflies visit their gardens and being close with nature, a garden can become an important place for children to develop an appreciation for how “life” is connected.

For homebuilders, building houses that last longer is an important environmental issue. As such, an important theme in the industry is how to create rich living environments based on the concept of “beauty with age,” where homes and urban areas become more precious over time. Planting vegetation as part of this business supports such “beauty with age.” In formulating its business plan, the company received support from an NGO representative with a deep love of living things, and also listened to the opinions of the company’s arborist. Also, the company has partnered with 80 landscaping companies and producers across Japan to establish a supply framework in order to plant both native and indigenous species of vegetation that differ from the breeds normally used.

Timber Procurement Guidelines

These guidelines are comprised of 10 principles. The guidelines aim to raise the procurement level by working with the supply chain based on comprehensive numerical assessments of lumber, with biodiversity conservation comprising an important cornerstone of the guidelines. The guidelines were formulated in cooperation with an international NGO in order to ensure a high level of transparency and objectivity, and the guidelines are being adhered to in order to ensure sustainable lumber procurement.

## Concrete Example 8: Actions in the Paper Industry

Company Information	Business Activities	Manufacturing, processing and sales of paper, pulp, and photosensitive materials
	No. of Employees	Approximately 4,600
	Year Established	1898

### Background

Due to the fact that the paper manufacturing industry uses timber, a living resource, as a key raw material, the industry must consider the impact that logging has on forest biodiversity. While recycling of paper is a strategy that has been employed to reduce the amount of logging, the use of recycled paper pulp has been limited in producing high-quality paper such as coated paper and inkjet printer paper, due to quality reasons.

Meanwhile, in addition to reducing the amount of logging, the “recycling of forests” themselves is also critical. In recycling forests, woodlands must be managed appropriately. In other words, forests must be managed in a manner that takes the amount of growth and biodiversity into consideration.

Company G uses large quantities of wood pulp. Along with its measures to use recycled paper, the company has also worked to procure wood from properly managed forests, thereby receiving FSC forest certification.

### Details

In 2001, Company G was the first Japanese paper manufacturer to obtain forest certification. At the time, forest certification was not well known, so the company started with a public relations campaign about the certification system. At the same time, the company worked to acquire FSC forest certification of company-owned overseas plantation forests in order to ensure a stable supply of wood from certified forests. It took roughly five years for the public to understand the significance of certified forest paper.

FSC certification is a system for certifying that a forest is managed appropriately with respect to social, environmental and economic factors. Particular importance is placed on environmental protection for “high conservation value forests.” The high conservation value forest is a concept proposed by the FSC, and represents a forest whose protection is considered necessary, regardless of whether the forest is legally protected or not. Biodiversity conservation is an important issue for FSC certification.

FSC certified paper includes paper made from certified timber as well as paper made from wood resources other than FSC certified wood. Certified wood is from forests where biodiversity is conserved through the work needed to obtain and keep FSC certification. Wood resources from sources other than certified wood refers to wood from forests where biodiversity is conserved through confirmation that no harmful impact is being made on high conservation value forests.

Since 2005, Company G has been confirming that all of the wood it procures meets FSC standards. This confirmation is based on document checks, but when documentation is insufficient, the company sends company representatives to the supplier’s forests to perform direct, on-site verification. Company representatives check a number of points, including whether or not the logging activity is negatively impacting the surrounding ecosystem, as well as whether or not protected areas have been established in order to protect rare plants and animals. Although this work takes time and involves costs, the company views it as necessary, both to lower the risk of biodiversity loss stemming from its procurement of wood, and to give consumers peace of mind.

Following the FSC certification program allows Company G to conserve biodiversity through its management of its own plantation forests and its timber procurement.

### Concrete Example 9: Actions Related to the Procurement of Material Inputs and Sales (Coffee)

Company Information	Business Activities	Import, processing and sale of coffee, black tea and cocoa; manufacturing and sale of canned coffee and other beverages; purchase and sale of materials for foods and beverages.
	No. of Employees	Consolidated: Approximately 3,700; Unconsolidated: Approximately 800 (as of 3/31/2008)
	Year Established	1951

#### Background

Company H is dedicated to “doing all they can with coffee to make customers smile” and is directly involved in every stage of the coffee production process, from the growing of coffee beans to the coffee drinker’s cup. The company opened its first company-managed coffee estate in Jamaica in 1981, and now also operates estates in Hawaii and Indonesia. Based on its experiences around the world, the company became aware that in order to support the natural environment it was necessary for the coffee bean growing business to contribute to the protection of the natural environment, for coffee estates to be healthy, and for workers to be happy.

As part of this, the company encountered an estate certified by an international organization dedicated to protecting the environment. Agreeing with the organization’s philosophy and activities, Company H formed a formal partnership with this organization. The company also began to sell coffee certified by this organization (“certified coffee”), and worked to grow its popularity and educate the public about certified coffee in the Japanese market. Currently, Company H is the leading seller of certified coffee in Japan.

Company H also believes that the natural environment must remain vibrant in order to produce delicious coffee, and thinks that it is also important to conserve biodiversity in order to maintain a robust natural environment. Company H has formed a partnership with an international environmental NGO dedicated to conserving biodiversity; as part of its strategy to conserve “biodiversity hotspots,” this NGO provides various kinds of support to coffee producers.

In 2008, Company H began full-fledged sales in the Japanese market of coffee harvested in areas that this same international environmental NGO supported by growing coffee. The coffee was marketed based on the idea that the coffee contributes to environmental and biodiversity conservation.

#### Details

Company H was the first company in Japan to begin selling certified coffee, launching sales of certified regular coffee in 2004. Subsequently, it expanded its product lineup to include coffee concentrate, coffee gifts and other products, thereby giving a wide range of consumers the chance to taste the goodness of certified coffee.

At the same time, the company has tried to educate people about certified coffee and expand the product’s consumer base.

For example, the company has been a sponsor of hands-on seminars that teach people about certified coffee as well as music events based on the theme of environmental protection, while selling certified coffee at such events. Also, the company has added certified coffee to the coffee menus at restaurants and cafes directly managed by the Company H Group.

In 2006, Company H was the first Japanese company to receive an award by the aforementioned environmental organization for its contribution to the creation and growth of the certified coffee market in Japan.

Also, Company H has been actively protecting the environment on coffee estates that it manages directly. In 2007, Company H's Lington Mandheling Coffee Estate in Indonesia obtained certification from this same organization, making it the first coffee estate in Asia to do so. In 2008, the directly-managed Company H Blue Mountain Coffee Estate in Jamaica obtained the same certification, making it the first coffee estate in the Caribbean to do so.

As part of the partnership with the aforementioned international environmental NGO, Company H began selling *Company H Café Nature*. In 2008, this coffee was served at both the G8 Environment Ministers Meeting in Kobe and at the G8 Hokkaido Toyako Summit. The coffee was touted as contributing to biodiversity conservation and helping smallholder farmers, and received much attention at both meetings.

As highlighted in the activities discussed above, Company H's coffee business is important for the protection of the environment, and going forward the company will continue to enhance its environmental protection activities, with Company H coffee being a good partner for environmental protection.

### Concrete Example 10: Actions to Sustainably Produce Coffee and to Improve Local Biodiversity

Company Information	Business Activities	Coffee cultivation, instruction regarding selection, import, roasting and sales
	No. of Employees	5 (as of June 2009)
	Year Established	2008

#### Background

Coffee bean prices on the international market are highly volatile, and this price volatility has a large impact on producers' quality of life.

Also, for companies involved in selling coffee in the countries where coffee is consumed, significant swings in prices make it difficult to manage business in a stable manner. The price of coffee beans is determined more by the supply and demand situation in the market than the quality of the coffee, environmental considerations, or other factors.

As a result, coffee producers have little incentive to improve the quality of their coffee, to ensure its safety, to protect the environment, or to improve the living environment of producers and laborers. In order to produce and distribute safe, high-quality coffee that is produced in an environmentally-friendly manner, these types of issues need to be resolved.

Meanwhile, coffee beans are one of the few crops that can grow without direct sunlight, and can be cultivated and harvested in the shade of forest trees. Therefore, it is possible for local residents to grow coffee beans in a way that protects forests and also provides them with cash revenue, thereby both conserving biodiversity and contributing to the local economy.

The founder of Company I spent many years working in a coffee producing country and has a wealth of knowledge about coffee producers and production areas. He took note of the aforementioned characteristics and issues involving coffee, and is now working to provide high-quality, safe coffee, and to raise the level of biodiversity and the lifestyles of local people through sustainable coffee growing.

#### Details

Company I works with farmers that produce quality coffee using biodiversity-friendly practices, and builds schemes enabling the production of a high-quality product while also conserving the biodiversity in the area.

Company I formulated standards for coffee growing, selection and packaging. After communicating these standards to producers and providing technical instruction and other support, Company I selects producers that grow high-quality coffee and then directly purchases the coffee.

The standards include details about product quality, as well as considerations of human rights, environmental conservation and other factors. Company I is thus aiming to be a leader in coffee, not only in terms of coffee quality, but also in terms of improvements to biodiversity and conditions for producers.

#### *Difficulties*

- Finding land that will produce high-quality coffee in a stable manner that does not negatively impact biodiversity.
- Finding producers that are very aware and that also have the technical capabilities to deliver.

#### *Successful Aspects*

- The producers that Company I partnered with are highly satisfied because their production and their livelihoods became more stable.
- Able to add new values (biodiversity conservation and local economic development) to coffee and provide it to consumers.
- Going forward, the company will advance its initiatives to achieve biodiversity conservation in production areas and to ensure quality, and will build even better cooperative relationships with producers, distributors and consumers.

### Concrete Example 11: Developing Product Certification in the Retail Industry

Company Information	Business Activities	General retail
	No. of Employees	Approximately 14,900 (Including part-time staff)
	Year Established	1926

#### Background

Given the issue of sustainability, Company J began offering Marine Stewardship Council (MSC) certified products as an initiative to continually provide safe seafood to customers.

In addition, Company J was the first domestic company in the retail industry to obtain a CoC (Chain of Custody) license.

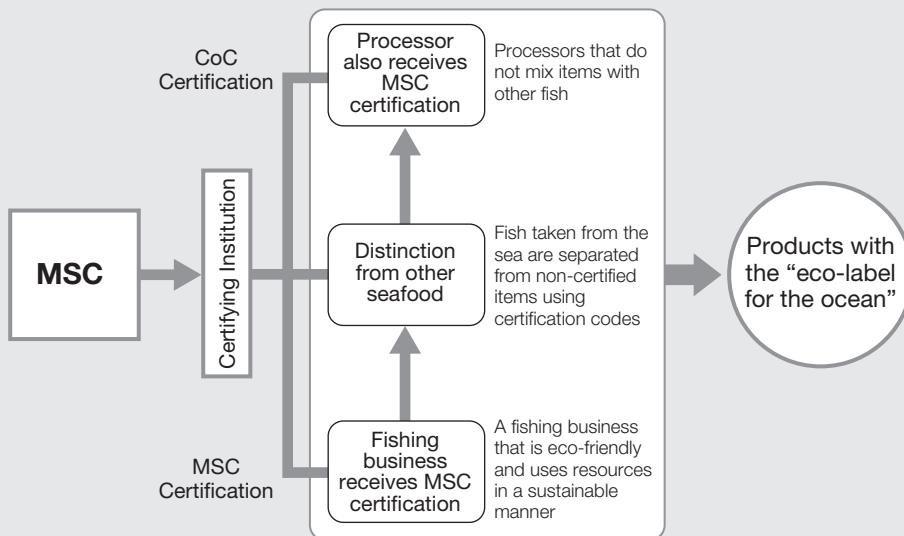
#### Details

##### Marine Stewardship Council (MSC) Certification (Eco-label for the ocean)

###### “Sustainability of Natural Marine Resources”

Marine resources are on the decline throughout the world. MSC certification is a system for certifying that a fishing business is sustainable and managed appropriately so that marine resources are not exhausted and people can continue to enjoy the ocean’s bounty. MSC certification is called an “eco-label for the ocean,” and Company J sells 15 items of MSC certified seafood, including sockeye salmon and salmon roe from Alaska. In addition, Company J’s stores have received CoC (Chain of Custody) licensing to process and distribute MSC certified products. Company J also sells products made from MSC certified fish.

MSC Certification Flow Chart



**Concrete Example 12: Setting Policies as Retailers**

Company Information	Business Activities	Mail order sales, book publishing
	No. of Employees	Approximately 400 (As of 4/1/2008)
	Year Established	1976

**Background**

One of Company K's corporate philosophies is to conduct its business in harmony with the Earth. This is based on its recognition that mail-order marketing is one of the industries that has most sharply exposed the problem of "coexistence between the earth and business" which is facing the modern consumption society, as well as the understanding that in today's world it is essential to work to achieve both "business satisfaction" and "Earth satisfaction."

Since around 1991, Company K has been actively working to protect the environment. One example of this is printing features in its mail-order catalogs about "tools to reduce garbage" and other such topics. The company president at the time believed that businesses which are not serious about protecting the environment will not be able to survive. Based on this recognition, Company K has been working to protect the environment in every way possible as a retailer.

In 2001, Company K formulated a policy concerning the products it sells, and disclosed its measures to protect the environment. This policy brought together all of Company K's environmental activities up until that point.

**Details**

As a measure related to biodiversity, Article 1 of the policy states "We shall do our best to sell products that will not harm the Earth, its plant life or animals." (2009 version)

To put Article 1 into practice, the company has enacted rules which restrict the sale of certain products. Such rules include only selling products not suspected of having endocrine disruptors and doing its best to not sell products that contaminate rivers. Furthermore, the company has stated that it will not sell products that use wood from tropical rainforests or products that use leather or fur of animals other than cows, pigs, horses, sheep, goats, deer, boar, or buffalo.

The company does all it can to verify the materials used in products and the processes by which they are manufactured. If the product violates the policy, Company K will ask the manufacturer to use an alternate material or otherwise try to resolve the issue.

While the effects of this policy are difficult to quantify, Company K feels that it has been a great boon to its corporate image.

**Policy Concerning Products We Sell (2009 version)**

- Article 1 We shall do our best to sell products that will not harm the Earth, its plant life or animals.
- Article 2 We shall do our best to sell products designed to last; that can be fixed instead of being thrown away.
- Article 3 We shall do our best to extend the life of our products as long as possible by finding second users for them after the original owners have no further use for them.
- Article 4 We shall do our best to recycle products that are no longer useful.
- Article 5 The company shall do its utmost to limit its own production of waste and CO<sub>2</sub>.



## Concrete Example 13: Setting Policies and Standards for Finance in the Forestry and Forest Products Sector

Company Information	Business Activities	Financial services
	No. of Employees	Approximately 335,000 (As of January 2009)
	Year Established	1865

### Background

In September 2003, Company L adopted the Equator Principles, a voluntary agreement among private sector financial institutions regarding environmental and social considerations applied to project finance activities.

The adoption of the Equator Principles and the subsequent bolstering of related initiatives led to the formulation of Company L's Forest Land and Forest Products Sector Policy. Although forestry accounts for only a small percentage of Company L's overall business, forestry represents an important part of its sustainability strategy due to the fact the potential environmental and social impacts of forestry are large.

To begin with, in 2004 Company L established the Forestry Sector Policy, an overview of the company's framework for involvement with the forestry sector. This policy was then updated and its scope expanded in 2008.

### Details

#### Forest Land and Forest Products Sector Policy (2008 updated version)

The Forest Land and Forest Products Sector Policy applies to all lending and other forms of financial assistance, debt and equity capital markets activities, project finance and advisory work. Company L will continue to provide support to clients that are compliant with the policy, as well as those clients that are making progress towards obtaining certification. If certain aspects of the client's operations appear to be non-compliant with the policy, an outside expert is consulted and the situation is clarified. Meanwhile, in accordance with Company L's requirement that clients meet the standards of this policy by 2009 (within five years), Company L will take measures to exit its relationships with clients that are either not compliant with Company L's policy or are not making progress towards obtaining certification.

Certification may be neither a straightforward nor a quick process. Typically, clients follow a step-wise approach, either implementing certification progressively in different operations or providing assurance of legality before proceeding to sustainability.

The details of the Forest Land and Forest Products Policy (2008 updated edition) are shown below:

#### Policy Prohibitions

Company L will not provide financial services which directly or indirectly support companies that purchase, trade or process timber related to the following activities:

1. Illegal logging and selling or purchasing illegally logged forest products;
2. Operations in UNESCO World Heritage Sites; and
3. Operations in wetlands on the Ramsar List

#### Certification Standard

Company L requires clients to obtain independent certification, to its standard, that their timber operations and/or their supplies of timber products are legal and sustainable. The standard is based on the Principles and Criteria of the Forest Stewardship Council (FSC) certification scheme and on Company L's commitment to the Equator Principles.

### Certification Technique

The method for assessing the level to which clients are compliant with Company L's policy utilizes a matrix, with categories of "fully compliant," "near compliant" and "non-compliant." The clients are considered fully compliant with the policy and become financing clients when their business activities are at least 70% (in terms of region or volume) certified as sustainable under a system that meets Company L's standards and there is evidence that the remainder is legal.

### Use of Certification Schemes

National and international certification schemes provide assurance on the legality and sustainability of activities in the forestry sector. Company L uses outside experts to examine the extent to which these schemes meet its standards. These schemes are reviewed regularly and help Company L determine whether or not clients meet its standards.

### Other Restrictions and Guidance

Company L has set forth the additional standards with respect to the following areas:

- HCVF (High Conservation Value Forests): Where clients are not fully compliant with our policy and operate in countries with a high incidence of illegal logging, impacts on biodiversity or social conflict, independent confirmation will be required that their non-certified operations do not impact adversely on HCVF.
- Plantations: We will not finance plantations converted from natural forest unless they are independently certified or confirmed as not having impacted adversely on HCVF (since June 2004).
- Pulp and Paper: We will not finance clients that manufacture pulp and paper where raw material supplies of wood are not certified in accordance with our policy.
- Biofuels: Cultivation of crops for biofuels has increased, leading to the conversion of HCVF into plantations, with potential wide impacts on biodiversity and communities. As such, we adopt a cautious approach to financing biofuels that may impact sustainable development.
- Palm Oil and Soy: We do not finance plantations for timber, palm oil or soy that have been converted from tropical forests or HCVF. We ask clients involved in oil palm plantations to participate in and receive certification from the Roundtable on Sustainable Palm Oil.
- Peat: Commercial activity in peatlands can have negative impacts on biodiversity and local communities, as well as wider impacts on climate change due to the carbon dioxide captured in peat. We therefore take a cautious approach to business proposals in this sector.

## Concrete Example 14: Offering Preferential Interest Rates for Loans Based on Environmental Rankings

Company Information	Business Activities	Financial institution
	No. of Employees	1,064 (as of 12/31/2008)
	Year Established	2008 (founded 1951)

### Background

Bank M has more than 40 years of investment and financing experience in the area of environmental financing, starting with pollution prevention. In recent years, the bank has enhanced its environmental financing. In addition to providing conventional funding for capital investment for end-of-pipe technologies, the bank has bolstered its financing options that support overall fundraising to encourage environmentally-friendly management.

Bank M enhanced its efforts following the adoption of the “Tokyo Principles” (a conference statement which called for the development of financial products that contribute to the environment) at the UNEP FI Tokyo Conference co-hosted by Bank M in October 2003. With the adoption of these Tokyo Principles, Bank M worked with the Ministry of the Environment to build a screening system, and in April 2004 Bank M became the first institution in the world to begin environmental ratings-based financing activities.

### Details

These environmental ratings were numerical scores indicating the level of a company’s environmental management as researched through interviews and other methods. Bank M then selected high-scoring companies and established three levels of preferential interest rates according to the scores. Over the years, Bank M has provided such financing to large, medium and small-sized companies. Specifically, there have been 170 loans provided, amounting to a combined total of over ¥240 billion (as of 7/31/2008).

Bank M’s environmental ratings are determined from a screening sheet comprising approximately 120 questions about environmental management, including topics such as corporate governance, compliance, risk management, biodiversity and global warming countermeasures.

Due to the stringent assessments, Bank M’s environmental ratings have recently become a status symbol among companies. An increasing number of rated companies are publicizing the fact that they have received a good rating through their environmental reports and other means.

In step with this trend, there has been a sharp increase in joint financing activities, built upon the strong environmental ratings received from Bank M.

In addition to joint financing with the borrower’s main bank (such as regional banks), there has been a significant amount of syndicated loans arranged with Japan’s largest banks and trust banks.

Among the companies that have obtained an environmental rating, since fiscal 2007 Bank M has been offering preferential interest rates to companies that have pledged to reduce carbon dioxide emissions per unit by at least 5% within the coming five years. In this way, Bank M’s environmental rating also operates as a platform for curbing global warming.

In addition, there are cases in which companies that are signatories to the Leadership Declaration for the Business and Biodiversity Initiative and companies participating in the RSPO are making use of Bank M’s environmental rating. Bank M recognizes that biodiversity will receive increasing attention going forward, and will work with NPOs and other experts to carefully check companies’ biodiversity considerations as part of the environmental rating assessment process.

**Concrete Example 15: Establishing a Fund for Biodiversity Conservation**

Company Information	Business Activities	Business group engaged in securities business and other businesses
	No. of Employees	14,456 (as of March 31, 2008)
	Year Established	1943

**Background**

This initiative came about as a result of points originally raised in the third-party opinions section of Company N's Sustainability Report for both 2006 and 2007.

After receiving a proposal from an international environmental NGO, Company N established a fund as an expression of agreement with its belief that while tree-planting and other activities carried out by many companies to tackle environmental issues are certainly important, it is more important to reduce the poverty level in surrounding communities, which is the fundamental cause of the conversion of forest ecosystems to other uses. This fund is being used to support projects that aim to foster eco-friendly businesses, such as eco-tourism which makes use of valuable natural heritage sites.

This initiative was launched based on the idea that negative impacts such as deforestation could be converted into positive impacts such as protecting the natural environment and reducing poverty, as well as the idea that finance could play a role in protecting biodiversity. The company has thus been working in the area of multi-sector social finance as a means of directing money towards endeavors that aim to contribute to society and the environment.

**Details****Biodiversity Conservation Fund**

One initiative of the World Heritage Local Ecological Entrepreneurship Program (WH-LEEP) carried out primarily by the United Nations Development Programme (UNDP), the United Nations Foundation (UNF) and an international environmental NGO is to provide support aimed at helping communities surrounding World Natural Heritage sites to launch and operate businesses that conserve the environment and to help with capacity-building. This effort was funded by a donation from a group company affiliated with Company N that operates and sells Company N's Eco Fund.

Company N partnered with the aforementioned international environmental NGO to conserve ecosystems in eight regions in seven countries from among the many biodiversity hotspots on Earth by working with communities positioned near World Heritage sites.

The money contributed by the fund will be used to provide assistance in developing eco-friendly businesses in local communities that have up until this point had no choice but to depend on income from illegal logging and other such activities. Specifically, the money will be used to cover expenses for business training as well as accounting and financial management training in order to launch eco-tourism and agro-forestry businesses involving crops such as cocoa and coffee beans.

As soon as the planning process is finished, pilot projects will first be executed in Belize, Dominica, Mexico and Madagascar. Knowledge gained from these projects will then be utilized at other project sites.

## Concrete Example 16: Considering Biodiversity in Construction

Company Information	Business Activities	University
	No. of Employees	Employees: Approximately 4,800 (as of May 2008) Enrolled Students: Approximately 11,800 (as of May 2008)
	Year Established	1991 (Date university established)

### Background

O University's campuses were formerly separated from each other and had ageing facilities. Additionally, redevelopment of facilities on the former campuses would have been difficult given the particulars of their locations. The university thus considered the option of building a new campus. In 1991, the relocation site was chosen and in 1993 the new campus area was selected. Subsequently, the Basic Plan for Development and the basic plan for the entire campus (*Master Plan*) were formulated, and construction work on the new campus began in 2000, with use of the new campus beginning in 2005.

The basic plan for the new campus included five basic principles. One of these principles was the "Creation of a futuristic campus that makes use of nature and effectively utilizes resources and coexists with the environment." In building the new campus, 275 ha. of *satoyama* was developed, but the university was mindful of the need to conserve both the diversity of species as well as the forest ecosystem's functions based on an understanding of the global environmental crisis.

### Details

The project for conserving the biodiversity in O University's new campus involved the goals of avoiding a reduction in forest area and avoiding a loss of species living within the campus. To accomplish these goals, the university made sure to protect both plant and aquatic life. The goal of "avoiding the loss of species" was set in order to conserve biodiversity. Believing that it would be insufficient to only protect endangered species, the conservation effort was based on the idea of avoiding any loss of species in the campus site.

Of the 275 ha. of land comprising the new campus, 99 ha. was left as conserved green space, and a plan was put in place to turn the 22 ha. of sloping land built around the campus into woodlands as much as possible.

With respect to woodlands, the university maintained the area of forests, excluding bamboo groves and fruit orchards. To make up for the loss of bamboo groves and fruit orchards, the university carried out a greening project in the academic zone of the campus and increased the percentage of the developed land to be covered with vegetation. These efforts were part of an overall plan to maintain the amount of woodland. In developing the land, trees were relocated using a variety of techniques, including forest floor transplanting, tall tree transplanting, and root transplanting. Furthermore, faculty members and a local volunteer organization took the leading role in devising a plan to build a forest by growing seedlings from acorns from the new campus's forests, and received help from local elementary and junior high school students in implementing the plan.

A detailed study of the distribution of plants was carried out, with 658 species of plants confirmed within the campus grounds. To avoid losing any of these plant species, the development plan was modified slightly to account for species of plants only found in the development area as well as those species that would be impacted greatly by development. Individual transplanting and other measures were taken to avoid any loss of species.

Ponds were relocated and newly built in order to conserve aquatic plants and animal life.

*Satoyama* refers to an ecosystem used by humans in a variety of ways, such as for rice paddies and fields, and is maintained by cutting underbrush, thinning trees and other types of management. As such, *satoyama* cannot be maintained just by implementing conservation measures and protecting the land. The grounds for the new campus had been left untouched for roughly 10 years since being designated as the location for the new campus. As a result, there was the risk that the expansion of bamboo groves would kill off native trees, so a local volunteer group and a university-based NPO have been helping with a variety of activities, including the clearing and removal of bamboo trees.

Thanks to the understanding and help of many people, the project to conserve the biodiversity on O University's new campus has been successful. The woods have remained intact. Wild cherry blossoms bloom in the spring, while at night Japanese raccoon dogs and hares run freely. In May, the *genji-botaru* (*Luciola cruciata*, a native firefly) dance in this *satoyama* that has been conserved. The area is also home to the clouded salamander and the Japanese pond turtle, both of which are endangered species. This conservation project has been recognized throughout the world, with the academic journal *Science* writing a feature on O University's biodiversity conservation project.

The efforts at the new campus are also being utilized in education. Small seminars are being held about the efforts to conserve the forests and living things on the new campus, with the active involvement of an NPO based at the university.

## Concrete Example 17: Consulting on Management of Company Owned Green Spaces, While Considering Biodiversity

Company Information	Business Activities	Landscaping works, construction and landscaping consulting
	No. of Employees	Approx. 400
	Year Established	1997

### Background

- In response to demand by corporations starting around 2000 to pursue CSR through utilizing company-owned green spaces, Company O launched a one-stop service (known as "eco-asset" in Japan) as a joint venture with other firms to provide related planning, design, construction, management, administration and communications activities.
- Urban green space provides functions due to its existence (climate regulation, flood control, water resource augmentation, etc.) and its uses (recreation, space for cultural activities, environmental education, etc.); however, because there had been no CSR-oriented green space assessment and consulting businesses at that time, the service incorporated the perspective of biodiversity and worked to promote the renewal of green spaces around buildings and their use by stakeholders.

### Details

- Noting a conspicuous heat-island effect during their renewal of an intelligent building, Company O made greater use of plantings, introducing light and wind by pruning tall trees, especially to enhance the climate adjustment function. There is a widespread misconception that it is generally best for the environment to leave trees alone after they have been planted, but in this case the service providers convinced the building owners that, also considering the crime risk aspect of building management, ultimately the trees that humans had planted needed to be cared for by humans to preserve good greenery.
- Also, while this has now become common, Company O proposed that the building owners offer opportunities for employees working in the building and nearby residents to learn about the necessity and importance of urban green space directly with their own senses, by establishing a gardening area in a corner of a rooftop garden and opening it to them.
- In green space management, the volume of agricultural chemicals used was greatly decreased by banning in principle the general applications formerly used by the building's gardeners, adopting spot applications and control by pruning. Similarly, the users of the above-mentioned gardening corner practice organic agriculture.
- Through such efforts, the building employees came to gather in the green spaces, and some of them formed a bird monitoring group. Three years of fixed-point wild bird observations are clarifying the relationship between the composition of urban plantings and the visitation of wild birds. The building owners have expressed their desire to further contribute to the preservation of biodiversity by serving as a base for a local ecological network. The company is now advancing a plan which selects the types of birds to attract, and then chooses tree varieties and tree composition, re-evaluates the water environment, and otherwise revises the green space environment accordingly.
- These types of efforts provide a concrete reference example of specific improvements to the relations among cities, biodiversity, and ecosystem services.

**Concrete Example 18: Consideration of Biodiversity in Mining Management**

Company Information	Business Activities	Management of a copper and gold mine in Indonesia
	No. of Employees	Japanese headquarters: 12 Local unit (joint venture): approx. 4,000, plus approx. 4,000 local subcontractors
	Year Established	1997

**Background**

The part of Indonesia where Company P conducts businesses is both a rich tropical rainforest area and a place of great poverty. Mine development at such locations requires (1) minimizing the impact on ecosystems and the environment, (2) prompt and maximum restoration from any negative impacts, (3) positive protection and improvement of ecosystems, and (4) active participation in community development. Local acceptance of these efforts may be considered a “social license” with respect to the development and operation of a project. The mining industry’s efforts toward environmental and biodiversity conservation and community cooperation have been advancing in recent years, and best practices are being accumulated, centered on the International Council on Mining and Metals (ICMM), an industry organization.

Company P is addressing these points while maintaining close cooperation and dialog with its joint venture partner (a U.S. mining company), the local government, local communities and other local stakeholders (NGOs and others). As its standards for these efforts – in addition to local government regulations and guidance and environmental and social guidelines set by the financing banks (the Japan Bank for International Cooperation, etc.) – the company has voluntarily adopted U.S. (State of Nevada) standards and is actively incorporating the best industry practices, aiming at the top level worldwide.

**Details**

(Items Related to Biodiversity Only)

**1. Minimizing Impact**

Efforts to minimize negative impacts, including minimizing the development area and achieving zero river emissions by using mine effluent recycling facilities that require large capital investment.

**2. Efforts to Protect Rare Species**

Efforts to protect an endangered bird, the yellow-crested cockatoo (*Cacatua sulphurea*), by closing roads to prevent hunting by trespassers, conducting public information and education programs, planting nesting forests, and relocating noisy facilities.

**3. Efforts at Revegetation**

Company P immediately undertakes concurrent reclamation and revegetation in areas affected by development works and areas where tailings accumulate, without waiting for the mine to close. The company aims at natural restoration, planting native species, using revegetation techniques developed in large-scale tests over an eight-year period in cooperation with banks.

**4. Environmental Programs for Neighboring Regions**

Company P is implementing community environment programs for nearby environmental concerns where protection and improvement are desirable but which are not actually impacted by mining activities, including the following programs which concern biodiversity.

- Protection of Sea Turtles: Education about protection, efforts to increase the percentage of eggs protected through dialogue with egg harvesters (for food and for sale), and guidance and support of a local NGO artificial incubation project.
- Mangrove Planting: Implemented in cooperation with communities and NGOs, and with the participation of schoolchildren, etc.



- Coral Reef Rehabilitation: Efforts (which have already achieved substantial results) to restore reefs harmed by fishing with explosives and poisons, by sinking reef balls (semi-spherical modules to which coral can easily adhere).

#### *Assessment*

Company P has received local government awards for its revegetation efforts and planting of nesting forests for the yellow-crested cockatoo. It also maintains the highest environmental ranking in the industry from the Ministry of Environment of the government of Indonesia. The company has upheld close friendly relations with local communities through these types of activities.

**Concrete Example 19: Protecting and Cultivating Rare Plants in Mining Activities**

Company Information	Business Activities	Cement manufacturing and sales
	No. of Employees	Approx. 2,000
	Year Established	1881

**Background**

Mine Q, located in Chichibu City, Saitama Prefecture, and operated by a subsidiary of Company Q, is a limestone mine on the west face of Mt. Buko established in 1923 to supply raw materials for the manufacture of cement at Company Q's factories. The mine area includes plants unique to Mt. Buko and to limestone environments that should be protected and cultivated from a botanical perspective.

A mined-area revegetation measures research committee was formed at Mine Q in 1971, which initiated activities for the protection and cultivation of rare plants. Subsequent agreements concluded with Chichibu City in 1978 and again in 1983 stipulate the protection and cultivation of rare plants. The Plan for the Protection, Cultivation and Transplantation of Plants in the Takeyama District prepared in 1986 based on those agreements specifies 65 relevant plant species. With the addition of six more species in 2005, the company is now working to protect and cultivate a total of 71 plant species.

**Details**

At Mine Q, seeds and branches for cuttings are collected from the 71 species of rare plants that require protection (using the best methods for each species such as layering when cuttings are difficult), and then transplanted to a botanical garden and nursery established within the mine and propagated, protected and cultivated. The company also conducts growth management of plants after they have been returned to nature, placing importance on this activity, which includes regularly inspecting replanted areas, maintenance, making observation records and taking photographs. The company acquired ISO14001 certification in 1997, and is advancing these efforts as an environmental management program with continuous reviews of activities. As these actions demonstrate, plant protection requires time and effort. The botanical garden and nursery where the protected plants are grown were damaged by deer, wild boar, monkeys and mice, and some of the plants were in danger of extinction. Further animal damage was averted using fences, nets and other countermeasures.

While the company has been advancing activities to protect and cultivate plants for over 20 years, even today there are still species that cannot be confirmed as growing in the wild or which are said to have become extinct on Mt. Buko. The 71 plants include species listed as endangered on the Red Data Book by Japan's Ministry of the Environment, and the need for stable protection and cultivation activities has become even greater. To avert species extinction from natural disasters, plant disease infestations and other unforeseen events, since 1995 Company Q has been conducting research on preservation and tissue culture propagation using Company Q biotechnology for eight species of herbaceous plants and six species of trees that are particularly rare and difficult to propagate (a total of 14 species), with some success.

The activities for the protection and cultivation of rare plants on the mountain still face many issues and difficulties. The company plans to steadily continue advancing actions under annual plans while reconfirming the significance of these activities and receiving guidance from experts and other concerned parties.

## Concrete Example 20: Considering Biodiversity in Marine Transport

Company Information	Business Activities	Marine Transportation and other Logistics
	No. of Employees	Approx. 31,400 (consolidated; as of fiscal year-end 2007)
	Year Established	1885

### Background

The transport to other sea areas of shellfish, algae and other marine organisms and pathogens in ballast water, affecting the ecosystems of the destinations, occurs worldwide and has become a global problem. In February 2004, the United Nations agency the International Maritime Organization (IMO) adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments (the Ballast Water Management Convention), which prohibits the discharge of ballast water that does not meet certain water quality standards. Company R anticipates that the regulations may come into effect as early as 2012, and compliance measures must be taken quickly, as they may cover portions of ships built as early as 2010. With this background, Company R is devoting every effort to the development of ballast water processing technologies and research and development on management methods not only from a compliance standpoint, but as a company aiming to become an outstanding, cutting-edge environmental corporate group.

### Details

Company R exchanges ballast water on the open seas, works not to introduce ballast water into each country's waters, and is actively pursuing development of ballast water processing systems and research and development on management methods.

Company R's affiliate, Company S, jointly developed with Company T a ship ballast water processing system which has Japan's highest processing capacity of 1,000m<sup>3</sup>/hr, and initiated field testing onboard a large cargo vessel from November 2008. These tests are presently continuing toward acquiring final approval from the IMO and type approval from the Japanese Ministry of Land, Infrastructure, Transport and Tourism within fiscal 2009.

One difficult point in the field testing to date was that because the test vessel travels a route which does not include any port calls in Japan, the researchers had to meet the ship at ports in other countries together with the manufacturer's engineers to carry out the experiment. Nevertheless, since the vessel called at ports in diverse countries, they were able to conduct the experiment under all conditions – using seawater, brackish water (see Note), fresh water, and water that was highly transparent as well as polluted water with low transparency.

This system also filters out relatively large marine organisms and returns them directly to the sea when the vessel takes on ballast water, to prevent their transport to other marine regions. The researchers have used trial and error to find ways to protect the organisms and return them alive.

Through repeated meetings with Company T, which has been participating in the development of the ballast water processing equipment from the initial stages and is a joint developer, the system was made suitable for actual vessel operations and structures from the standpoint of shipping companies, by using a design which reduces environmental load and gives consideration to space conservation and crew members' ease of use.

Company R is now working toward rapid approvals and commercialization, and to establish management methods for the early installation of the equipment on all vessels.

Note. Brackish water: Seawater with low salinity, resulting from the mixing of fresh water and seawater.

**Concrete Example 21: Biodiversity-Friendly Ecotourism**

Company Information	Business Activities	Eco-tour planning and implementation, guide training, environment-related surveys, etc.
	No. of Employees	12
	Year Established	2001 (initiated activities)

**Background**

Company U was established and initiated its activities in 2001, as a result of noting the mismatch between tourists' needs and the products being supplied by the tourism industry, as well as a consideration of the purposes of tours and the messages they wanted to convey to tourists through tours.

Company U conducts ecotourism based on the understanding that their mission is to provide "happiness" rather than "tourism," that all the four parties involved with tourism (customers, natural resources, local residents, and guides) should be happy, and that tourism should be balanced and not be based on the sacrifice of any one of these parties. The company is working toward gradually increasing the sense of happiness by helping regions achieve their potential, starting with sustainable tourism that is practical now.

**Details**

Company U is advancing ecotourism forming a balance among ecotourism operations, tourism and nature, giving consideration to ecosystems and biodiversity and using biodiversity as a tourism resource through tours of outlying islands and nearby fishing villages and the seacoast around Toba City, Mie Prefecture.

The tours take advantage of all that the remote islands have to offer, with their unique nature, history, tradition and way of life and culture, including natural encounters and interactions with local residents just as they are. The tours have had a large economic ripple effect on primary industries through increasing sales of marine products and advancing local production for local consumption. Through these efforts, the tourism businesses and the residents of Toba City and the remote islands have joined together to form a sustainable tourism structure.

Considering the impact on the environment, especially from rocky shore observations, the company drafts voluntary rules regarding biodiversity and the environment in connection with using coastal areas, presents these rules to the local fishing cooperative, and ensures that the rules are observed under the responsibility of the guides leading the tours. To make sure that the rules are followed, participants are provided with oral explanations of the rules, and programs are crafted and led by guides in such a way that participants follow the rules naturally and complying with the rules does not become unpleasant for the participants.

Additionally, to fulfill their responsibility as a firm operating nature experience programs, from 2008 the company began surveys of the load on the ecosystem from the programs they themselves implement.

**Sample Rocky Shore Observation Rules**

- Feel gratitude for entering the island
- Plan and operate in compliance with laws and regulations
- Give prior notification to fishing cooperatives every time, specifying the tour areas, number of participants and time period
- Do not take away any living things from the shore
- Follow methods having low impact on nature and living things (no running on the shore; gently returning stones; using gloves so as to not touch living things with bare hands; picking up one individual of one species per person at a time, in turn; avoiding prolonged holding of organisms in containers; returning organisms to the ocean after observation in accordance with the habitat conditions, etc.)

- Set regulations on taking home shells and stones from areas near the shore
- Do not leave any trash (conversely, take home any trash found)
- Set limits on the number of participants for each location
- Do not enter the same shore area for more than two consecutive days
- Implement additional voluntary regulations depending on the temperature and living conditions of organisms
- Give effective orientations (concerning the island's background, the importance of the island to local residents, cautions to be followed when observing living things) to guide and motivate customers before entering rocky shore areas, without fail.

## Concrete Example 22: Wildlife Conservation & Management Project, and Related Ecotourism Activities

Company Information	Business Activities	Ecotourism, wildlife protection and management, environmental education, ecotourism support
	No. of Employees	No. of Employees: 18 (as of Jan. 2009)
	Year Established	2003

### Background

Garbage scavenging by Asiatic Black Bears has long been a problem at villas in Karuizawa Town, Kitasaku Gun, Nagano Prefecture. In many places, people have tried to eradicate the bears to eliminate this problem, but that approach is not very effective in practice. This is because the bears that are killed are not necessarily the “dangerous” bears that cause this problem, and the damage will continue as long as the cause – uncovered garbage – remains.

Company V has been pursuing bear protection and management actions based on the policy of Karuizawa Town, with the first use of “bear dogs” (dogs trained to manage bears) in Japan and other advanced techniques toward creating an area where people and bears can coexist and which avoids the killing of bears whenever possible.

### Details

Company V is engaged in the ecotourism business utilizing various natural resources (forests) while conserving the diversity of local ecosystems through wildlife protection and management activities for the Asiatic Black Bear.

#### Contents of Asiatic Black Bear Protection and Management

- **Efforts Not to Attract Bears**  
Company V developed animal-proof dumpsters that cannot be raided by wild animals. The number of units sold is steadily increasing, with purchases made by the town, local inns, etc. The dumpsters are proving effective in preventing bears from coming to know the taste of human food.
- **Capture and Release**  
When bears scavenge garbage or cause damage to crops, instead of immediate extermination they are captured, subjected to aversive conditioning (frightened with firecrackers and other loud noises so they will learn to avoid humans), and then released back to the mountain. Because released bears may reappear, they are tagged with radio transmitters so their behavior can be monitored.
- **Late-Night Patrols (Tracking Behavior and Driving Off Bears)**  
In the summer, when the bears are most active, the locations and behavioral patterns of the bears with transmitters are monitored during their daily active hours (nighttime). This facilitates the accumulation of data on bear behavior. When bears are approaching garbage collection sites and areas where they should not enter, they are driven off using firecrackers and bear dogs (see Note), aiming at a learning effect for the bears (teaching them which areas they should not enter).

Note. Bear dogs are Karelian dogs used in Finland for hunting brown bears that have been specially trained to drive off bears without killing them. Company V employs Karelian dogs and handlers that have been trained by an established bear management organization in North America.

#### Ecotourism Based on Biodiversity Conservation Efforts

While cooperating with efforts to conserve the diversity of local ecosystems centered on Karuizawa Town through the types of approaches presented above, Company V is engaged in the eco-tour business, introducing the magnificence (appeal, fun and wonder) of local nature to tourists visiting Karuizawa.

*Difficulties Encountered, Etc.*

It is particularly difficult to gain sympathy from local residents, who feel anxiety or have suffered damage, and to have them gain an appreciation that we need to leave a rich forest where bears and many other organisms can live for future generations, because their worries and anxieties are reasonable. Nevertheless, Company V says they would be delighted if their efforts protect the abundance of the local nature and lead to environmental wealth for local residents, and if other localities pursue biodiversity conservation and other activities using the efforts in Karuizawa as a reference.

**Concrete Example 23: Social Forestry by an Overseas Affiliate Company**

Company Information	Business Activities	Wood processing (plywood, laminated wood, particle board)
	No. of Employees	Approx. 2,000
	Year Established	1970

**Background**

- The conditions for shifting the source of lumber supply to plantation trees came into place from the late 1990s with the decrease in natural forests as a lumber source, an active global movement to protect rainforests, and the development of machines that can efficiently process smaller diameter lumber, thus facilitating the use of small-diameter plantation trees for uses other than pulp.
- The local residents (mostly very small-scale farmers) had little motivation to plant trees because they could not develop buyers or negotiate prices even if they were to pursue small-scale forestry on their own. Company W (an Indonesian group affiliate of a Japanese firm) offered purchase guarantees for cut lumber and proposed fast-growing trees that can be harvested in 5-7 years for quicker conversion to money. This provided the foundation for a sudden increase in the motivation to plant trees.
- Company W determined that, in this era when it is necessary to consider social contributions for local residents from a CSR perspective (as the Indonesian affiliate of a Japanese company), the provision of free seedlings for afforestation and the guaranteeing of purchases of cut lumber at market prices constituted an ideal system linking social contribution activities with its primary business; the company therefore launched this system starting in 2002.

**Details**

- Company W began afforestation in Eastern Java from 1999 with a few farmers on an area of a few dozen hectares. To date more than 6,000 farmers have participated in planting over 7,000 hectares.
- This is not regular, monoculture forestry. The seedlings are planted on open spaces and on ridges between fields. There are no natural forests nearby. The area has a lot of farmland and many orchards. While no surveys were conducted, the area has been farmed from long ago, and should not be home to any rare flora or fauna.
- The trees planted are a fast-growing variety harvested in seven years. The company projects a harvest on the order of 200m<sup>3</sup>/ha seven years after planting.
- The price of lumber has been increasing, dramatically changing the income of local residents, so the motivation to engage in forestry is rising more and more.
- These effects may not be possible everywhere, since they were first achieved using a system which guarantees lumber sales regardless of the number of trees planted. This would have been impossible without the cooperation of Company W, which uses large volumes of local wood products without fail. In that sense, Company W plays an extremely major role.
- With the overall increase in local income, the farmers no longer engage in excessive logging or farming of marginal areas, so this initiative has indirectly reduced the human impact on local ecosystems and is also contributing to the maintenance of biodiversity.
- As a biodiversity consideration, Company W's policy instructs the farmers to set aside a minimum of 10% of the land they are planting as protected areas, and to leave forests mostly along riverbanks untouched. When the protected areas are planted, they are planted using local native species, not the fast-growing plantation trees.
- Also, a 152-ha. forest run by a cooperative of 259 farmers in the relevant forest planting area acquired Forest Stewardship Council (FSC) certification in December 2008 with guidance from Company W. This was achieved via close mutual trust between Company W and local residents. The certification process required a great deal of time and the involvement of highly skilled experts.



- Even when it does not lead to FSC certification, spreading these types of afforestation activities – which involve local residents and incorporate nature protection – requires steady efforts that cannot be achieved with just money. The required conditions must be achieved, one at a time.

Reference  
6

## Recent Key Documents Related to Biodiversity

## COP 8 Decision VIII/17 Private-sector engagement

The Conference of the Parties,

Recalling decisions III/6, V/11 and VI/26 of the Conference of the Parties, in particular objective 4.4 of the Strategic Plan (“Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes, and policies”),

Emphasizing the need to involve all stakeholders in the implementation of the Convention and the achievement of the 2010 target, while mindful also that responsibilities for implementation rest primarily with Parties,

Noting the need to enhance voluntary commitments of the private sector to, and strengthen regulation in support of, the objectives of the Convention,

Recognizing that the private sector encompasses a broad range of actors,

Noting that there are multiple reasons for promoting the engagement of business and industry in the implementation of the Convention, including the following:

- (a) The private sector is arguably the least engaged of all stakeholders in the implementation of the Convention, yet the daily activities of business and industry have major impacts on biodiversity. Encouraging business and industry to adopt and promote good practice could make a significant contribution towards the 2010 target and the objectives of the Convention;
- (b) Individual companies and industry associations can be highly influential on Governments and public opinion; thus, they have the potential to raise the profile of biodiversity and of the Convention itself;
- (c) The private sector possesses biodiversity-relevant knowledge and technological resources, as well as more general management, research and communication skills, which, if mobilized, could facilitate the implementation of the Convention,

Welcoming ongoing and new initiatives to engage businesses in furthering the objectives of the Convention, including dialogue between business leaders and Ministers involved in implementing the Convention,

Welcoming the initiative of the Ministry of the Environment of Brazil and the Department for Environment, Food and Rural Affairs of the United Kingdom, together with the World Conservation Union (IUCN), the Brazilian Business Council for Sustainable Development (CEBDS), Insight Investment and the Executive Secretary, to develop ideas, that could best be pursued through the Convention or in support of its objectives, for engaging business in biodiversity issues, as a means of working towards the 2010 target,

Noting the report of the first Business and the 2010 Biodiversity Challenge meeting (UNEP/CBD/WG-RI/1/INF/5) held in London on 20-21 January 2005, as well as the report of the second meeting (UNEP/CBD/COP/8/INF/11) held in São Paulo, Brazil, from 3-5 November 2005,

Noting that the following types of tools and mechanisms may be of use in facilitating contributions from business and industry towards the implementation of the Convention and its 2010 target:

- (a) Awareness-raising materials and training workshops on business and biodiversity issues;
- (b) Guidance on the integration of biodiversity considerations into existing voluntary or mandatory reporting and performance standards, guidelines, and indices in order to mainstream biodiversity considerations into business practice;
- (c) Certification schemes reflecting the full range of biodiversity-related issues to facilitate consumer choice based on companies' biodiversity performance;
- (d) Internationally agreed standards on activities that impact biodiversity;
- (e) Guidance and tools to assist companies in implementing good practice with regard to biodiversity;
- (f) Biodiversity policies and action plans to define and operationalize companies' biodiversity commitments;
- (g) Biodiversity benchmarks to guide and assess companies' biodiversity management practices;
- (h) Guidelines for incorporating biodiversity-related issues into existing environmental impact assessment procedures and strategic impact assessment;
- (j) Partnerships to facilitate knowledge-sharing with regard to good practice;
- (k) Public-private partnerships,

Further noting that some of the tools and mechanisms enumerated above may also be of use in facilitating cooperation among government agencies that deal with biodiversity conservation and sustainable use and those that deal with economic development, in regard to implementation of the Convention and achievement of its 2010 target,

Noting that contributions from business and industry towards the implementation of the Convention and its 2010 target could be facilitated by further work under the Convention to develop:

- (a) Tools, guidance and standards on biodiversity-related issues relevant to the private sector;
- (b) Tools for assessing the value of biodiversity and ecosystem services, for their integration into decision-making;
- (c) Guidance for potential biodiversity offsets in line with the objectives of the Convention;
- (d) Guidance on integrating biodiversity into industry standards, certification schemes and guidelines;
- (e) A guide to the Convention for the private sector;
- (f) Guidance for Parties on how to engage the private sector, in accordance with national needs and circumstances,

Noting that further work on ways and means of supporting small and medium-sized enterprises with environmentally sound products, such as that developed by the UNCTAD BioTrade Initiative, would help to promote good biodiversity practice among business and industry,

1. Urges national focal points, working with relevant government departments, to communicate the importance of biodiversity to companies operating within the

jurisdiction of Parties, including state-owned companies and small and medium enterprises, to engage such companies in the development of national biodiversity strategies and action plans, and to encourage such companies to adopt practices that support the implementation of national biodiversity strategies and action plans and the objectives of the Convention;

2. Encourages national focal points, where appropriate, to include private sector representatives on national delegations to meetings of the Subsidiary Body on Scientific, Technical and Technological Advice, the Conference of the Parties, and other intergovernmental meetings, and nominate them to participate in technical expert groups;
3. Requests the Executive Secretary to compile information on the business case for biodiversity and good biodiversity practice, and to make this information available through the clearing-house mechanism;
4. Further requests the Executive Secretary to include the private sector as a target audience for its outreach materials and in the Global Initiative on Communication, Education and Public Awareness (CEPA);
5. Invites businesses and relevant organizations and partnerships, such as the Finance Initiative of the United Nations Environment Programme, to develop and promote the business case for biodiversity, to develop and promote the wider use of good practice guidelines, benchmarks, certification schemes and reporting guidelines and standards, in particular performance standards in line with the 2010 indicators, to share information on biodiversity status and trends, and to prepare and communicate to the Conference of the Parties any voluntary commitments that will contribute to the 2010 target;
6. Invites businesses to align their policies and practices more explicitly with the three objectives of the Convention and its goals and targets;
7. Encourages business representatives to participate in the meetings of the Conference of the Parties, the Subsidiary Body on Scientific, Technical and Technological Advice, and other intergovernmental meetings;
8. Decides to consider, at its ninth meeting, further ways and means to promote business engagement in the implementation of the Convention, with a particular emphasis on the Convention's role in facilitating such engagement;
9. Invites the Ad Hoc Technical Expert Group on Technology Transfer and Scientific and Technical Cooperation to address the role of the private sector in achieving the three objectives of the Convention and to consider the relevance of the present decision for the work of the Expert Group, and to report thereon to the Conference of the Parties;
10. Encourages Parties to prioritize the implementation of Article 6(b) of the Convention.

Website: <http://www.cbd.int/decision/cop/?id=11031>

## COP 9 Decision IX/26 Promoting business engagement

The Conference of the Parties,  
Recalling its decision VIII/17,

Noting with appreciation the initiative of the Portuguese Presidency of the Council of the European Union of holding a high-level conference on business and biodiversity in November 2007,

Welcoming the efforts of Germany, including through its Business and Biodiversity Initiative, to mobilize the business community for the ninth meeting of the Conference of the Parties,

Welcoming the support of the Netherlands for the organization of a third informal "business and the 2010 biodiversity challenge" meeting, to further develop ideas that could best be pursued through the Convention or in support of its objectives, for engaging business in biodiversity issues, as a means of working towards the 2010 target,

Noting with appreciation the efforts of the Secretariat to engage the business community, including through the designation of a focal point for business,

Recognizing the potential impacts of business operations on biodiversity and the role that the business community and civil society need to play for the implementation of the three objectives of the Convention, at all levels,

1. Invites Parties, as appropriate, to improve actions and cooperation for enhancing the engagement of the business community, including small and medium-sized enterprises, in particular through the development of public-private partnerships, in the implementation of the three objectives of the Convention;
2. Urges Parties to continue to raise awareness on the business case for biodiversity;
3. Encourages public and private financial institutions to include biodiversity considerations into all investments and to create investment schemes to promote sustainable business activities;
4. Requests the Global Environment Facility, and invites Parties, other Governments, and relevant organizations to support capacity-building in developing countries, in particular the least developed and the small island developing States among them, and Parties with economies in transition, for engaging the business community in the implementation of the Convention;
5. Welcomes the framework for priority actions to be undertaken by the Secretariat contained in the annex to the present decision, subject to the availability of resources, and requests the Executive Secretary, where possible and appropriate, to take into account relevant initiatives by Parties and organizations.

### Annex

#### FRAMEWORK OF PRIORITY ACTIONS ON BUSINESS, 2008-2010

1. While there has been notable progress in mobilizing the business community on biodiversity since the eighth meeting of the Conference of the Parties, relatively few companies, in particular small and medium-sized enterprises, are aware of the business and biodiversity linkages or the relevance to business of negotiations carried out under the Convention. With this in mind, and following on from decision VIII/17, the present note sets out the priority actions to be undertaken by the Secretariat in the period 2008-2010:

Priority area 1: Build and promote the business case for biodiversity

2. Continue the compilation and dissemination of information on the business case for biodiversity, including experiences generated in the framework of the UNCTAD Biotrade Initiative, through the clearing-house mechanism, the CBD newsletter on business, and mainstream business forums.
3. Develop options for incorporating biodiversity into course curricula, including through the development of case-studies and other teaching material.

Priority area 2: Disseminate tools and best practice

4. In collaboration with relevant organizations, such as the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance, compile information on the use and impact of international voluntary certification schemes towards the implementation of the objectives of the Convention and develop knowledge sharing and technical assistance tools to encourage the wider uptake of best practice. Activities would further include:
  - (a) Compile, specifically in relation to small and medium-sized enterprises, experiences and practices that foster the sustainable use of biological resources that have been developed and implemented by Parties;
  - (b) Make the information available through the clearinghouse mechanism;
5. In collaboration with relevant organizations and initiatives, such as the Business and Biodiversity Offsets Programme (BBOP), compile and/or make available: (a) case studies; (b) methodologies; tools and guidelines on biodiversity offsets; and (c) relevant national and regional policy frameworks.
6. Disseminate tools and best practice of companies involved in biotrade.
7. Compile and disseminate, including through the clearing-house mechanism and the Convention's newsletter on business, information on procurement policies that are in line with the objectives of the Convention.

Website: <http://www.cbd.int/decision/cop/?id=11669>

## Guidelines developed by the International Union for Conservation of Nature (IUCN)

The International Union for Conservation of Nature (IUCN), founded in 1948, is a global environmental organization comprised of countries, government agencies and NGOs. IUCN has long focused on business and biodiversity, and has developed handbooks, guidelines and other relevant resources in cooperation with various organizations. The following are some examples of IUCN's materials related to biodiversity and businesses:

### **Business & Biodiversity: The Handbook for Corporate Action**

(Earthwatch Europe, IUCN, and the World Business Council for Sustainable Development; 2002)

Website: <http://data.iucn.org/dbtw-wpd/edocs/2002-022.pdf>

Website for the Japanese version:

<http://www.bdnj.org/publications/BusinessBiodiversity.html>

### **Integrating Biodiversity Conservation into Oil & Gas Development**

(British Petroleum, ChevronTexaco, Conservation International, Fauna & Flora International, IUCN, The Nature Conservancy, Shell, Smithsonian Institution, Statoil; Energy & Biodiversity Initiative; 2003)

Website: <http://data.iucn.org/dbtw-wpd/edocs/2003-037.pdf>

### **Good Practice Guidance for Mining and Biodiversity**

(International Council on Mining and Metals; Edited by Linda Starke; produced in cooperation with IUCN; 2006)

Website: <http://data.iucn.org/dbtw-wpd/edocs/2006-026.pdf>

## Millennium Ecosystem Assessment (MA)

The Millennium Ecosystem Assessment (MA) was a large-scale, comprehensive assessment of ecosystems conducted from 2001 to 2005 in response to a request by the United Nations, and which involved 1,360 experts from 95 countries. The report of the MA indicated how human well-being is affected by ecosystem change, and offered proposals to reduce the loss of ecosystem functions.

The Millennium Ecosystem Assessment developed four scenarios to explore plausible futures for ecosystems and human well-being:

- Globalized world with reactive ecosystem management; with an emphasis on equity, economic growth, and public goods such as infrastructure and education (also called Global Orchestration);
- Regionalized world with reactive ecosystem management; with an emphasis on security and economic growth (also called Order from Strength);
- Regionalized world with proactive ecosystem management, with an emphasis on local adaptations and learning (also called Adapting Mosaic); and
- Globalized world with proactive ecosystem management, and an emphasis on green technologies (also called TechnoGarden).

As part of the Millennium Ecosystem Assessment, 33 regions were selected for Sub-global Assessments, which were intended to assess differences that exist between regions in terms of the importance of ecosystem services. Of these 33, 18 were designated as official Sub-global Assessments.

Although Japan had not been included in these 33 regions, a Sub-global Assessment of the *satoyama* and *satoumi* areas in Japan is currently being conducted, led by the United Nations University - Institute of Advanced Studies (UNU-IAS).

Website: <http://www.millenniumassessment.org/en/index.aspx>



## Global Biodiversity Outlook 2 (GBO2)

The Sixth Conference of the Parties to the Convention on Biological Diversity, held in 2002, adopted a Strategic Plan with the mission of achieving by 2010 a significant reduction in the current rate of biodiversity loss at the global, regional and national levels as a contribution to poverty alleviation and to benefit all life on Earth.

At the Seventh Conference of the Parties, to assess progress in achieving the goals of the Strategic Plan and its 2010 Biodiversity Target, and to help communicate the state of this progress to the public, the Parties agreed on a framework of focal areas to guide action. The seven focal areas, as outlined in Decision VII/30 adopted at the 2004 Conference of the Parties, include:

- Reducing the rate of loss of the components of biodiversity, including: (i) biomes, habitats and ecosystems; (ii) species and populations; and (iii) genetic diversity;
- Promoting sustainable use of biodiversity;
- Addressing the major threats to biodiversity, including those arising from invasive alien species, climate change, pollution, and habitat change;
- Maintaining ecosystem integrity, and the provision of goods and services provided by biodiversity in ecosystems, in support of human well-being;
- Protecting traditional knowledge, innovations and practices;
- Ensuring the fair and equitable sharing of benefits arising out of the use of genetic resources; and
- Mobilizing financial and technical resources, especially for developing countries, in particular least developed countries and small island developing states among them, and countries with economies in transition, for implementing the Convention and the Strategic Plan.

For each of the seven focal areas of the framework, the Conference of the Parties identified indicators for assessing biodiversity status and trends, and outcome-oriented goals and targets, which aim to assess progress towards the 2010 Biodiversity Target. With the targets and the indicators, “Global Biodiversity Outlook 2” provides an assessment of the current status and trends of biodiversity and considers the prospects and challenges of meeting the 2010 Biodiversity Target.

Website: <http://www.cbd.int/doc/gbo/gbo2/cbd-gbo2-en.pdf>

Japanese version is available at: [http://www.biodic.go.jp/biodiversity/lib\\_pamphlet/index.html](http://www.biodic.go.jp/biodiversity/lib_pamphlet/index.html)

## The Economics of Ecosystems and Biodiversity (TEEB)

“The Economics of Ecosystems and Biodiversity” (The European Communities, 2008) was released at the Ninth Conference of the Parties to the Convention on Biological Diversity (CBD COP 9) in May 2008, in the form of an interim report. This report was produced in response to the March 2007 G8 Environmental Ministers meeting held in Potsdam, Germany, which indicated the need for a report addressing the loss of ecosystems and biodiversity which would be similar to “The Economics of Climate Change” (commonly referred to as the Stern Review), which provided momentum for policy change and early action on climate change.

The report presents a range of research, including a study that found that in the period after the year 2000, ecosystem services worth some 50 billion Euros were being lost each year from terrestrial ecosystems alone.

The final results of this review will be presented at the CBD COP 10 meeting in 2010.

Website:[http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb\\_report.pdf](http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/teeb_report.pdf)

Japanese version is available at:

<http://www.sumitomotrust.co.jp/csr/innovation/biology/index.html>

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## 1. "Section I: A Shared Understanding of the Situation"

### (1) The Structure of the Biodiversity Crisis in Japan

The number of known species in Japan exceeds 90,000, and it is estimated that there are more than 300,000 total species, including those that are not yet classified, giving Japan, with its relatively small land mass of approx. 38 million hectares, a rich biota. Additionally, Japan is characterized also by its high proportion of endemic species, with about 40 percent of terrestrial mammals and vascular plants, some 60 percent of reptiles, and about 80 percent of amphibians being endemics. Japan has a rich natural environment, being the only developed country to have wild monkeys, and also having many medium-sized and large wild animals including bears and deer. However, due to economic development, Japan's biodiversity has been lost. The Third National Biodiversity Strategy recognized that the biodiversity crisis in Japan is in fact comprised of three biodiversity crises, plus global warming.

- The first crisis: This indicates impacts on biodiversity due to negative factors generated by human activities or development. Examples include the loss or extinction of species due to development activities, or reduction and loss of species' habitats due to destruction, fragmentation, and deterioration of ecosystems.
- The second crisis: This indicates impacts due to reduced or discontinued human engagement with nature. Examples include the diminution of human involvement in nature caused by changes in lifestyles and industrial structure, and changes in society including population decline, which lead to degradation in satochi and satoyama areas (rural landscapes formed by sustainable use of natural resources), resulting in declines of species.
- The third crisis: This refers to disturbances to ecosystems due to human introductions of species or chemicals. Alien species, such as the Javan mongoose, raccoon, and largemouth bass, are intentionally or unintentionally introduced by humans from domestic or international locations beyond the natural migratory range of these wild species, significantly threatening biota and ecosystems native to particular regions. Other effects on ecosystems include those from chemicals, many effects of which are as yet unknown.
- The crisis of global warming: The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report (IPCC, 2007), concluded that changes are occurring in the climate system. The IPCC's scientific assessment of the latest knowledge regarding the effects that have been observed, and that are predicted to occur in the future, noted that biodiversity is particularly vulnerable to climate change, and predicted that if the increase in the global average temperature were to exceed 1.5-2.5 degrees Celsius, some 20 to 30 percent of animal and plant species that have been studied would be likely to face an increased risk of extinction.

## (2) Unintentional Introduction of Non-Native Species

The introduction of invasive alien species is one of the major issues for biodiversity.

Since the 17th Century, nearly 40 percent of species extinctions (in those cases for which the cause of extinction is clear) have been due to invasive alien species (Global Biodiversity Outlook 2).

Many more problems may emerge in the future as a result of the problem of alien species. One example is the unintentional introduction of non-native species.

According to the Invasive Species Specialist Group (ISSG), one such example is the *wakame* seaweed commonly used in Japan as an ingredient in cooking, which is now flourishing in other countries such as Australia and New Zealand, and which the International Union for Conservation of Nature, IUCN, included in its list of "100 of the World's Worst Invasive Alien Species." The unintentional spread of wakame is thought to be due mainly to the seaweed becoming attached to hulls of ships.

Source: Global Invasive Species Database (<http://www.issg.org/database/welcome/>)

## (3) An Example of Opportunity – Biodiversity and Real Estate Values

(Related to "Reference 3: Actions by Business Entities in Key Contexts")

A study that examined the relationship between biodiversity and values of residential areas found that, in central Tokyo, the ratio of green space served as an important indicator of biodiversity, suggesting that the size of green spaces in urban areas can be an important determining factor in the richness of biodiversity. Moreover, there is a correlation between real estate values (rent values for rental properties as well as land prices) and the ratio of green space and the size of green spaces. In particular, a very high correlation was indicated between rental values for properties and the ratio of green space within 100 meters. In this way, it can be seen that opportunities exist for biodiversity conservation to enhance the value of real estate in surrounding areas.

Reference cited:

Kumagai Y. and Yamada Y. (2008): Green space relations with residential values in downtown Tokyo – implications for urban biodiversity conservation. *Local Environment* 13(2), 141-157.

#### (4) Leading Activities by Governments, Multiple Business Entities, NGOs and Others

Leading activities by governments, multiple business entities working together and nongovernmental organizations include the following.

##### 1. Governmental Actions

- **Business and Biodiversity Initiative (B & B Initiative):** This is an initiative led by the government of Germany to further enhance private sector involvement in achieving the goals of the Convention on Biological Diversity (CBD). Participating companies sign a "Leadership Declaration" agreeing to support the objectives of the Convention and promising to take actions that will assist achieving those objectives. A signing ceremony was held in Bonn, Germany in May 2008 in conjunction with the Ninth Conference of the Parties to the Convention on Biological Diversity (COP 9).

Signatory companies acknowledge and support the Convention's three objectives:

- Conservation of biodiversity
- Sustainable use of its components
- Fair and equitable sharing of the benefits that arise out of the utilization of genetic resources.

Signatory companies furthermore commit themselves to:

1. Analyze corporate activities with regard to their impacts on biodiversity.
2. Include the protection of biodiversity within their environmental management system, and develop biodiversity indicators.
3. Appoint a responsible individual within the company to steer all activities in the biodiversity sector and report to the Management Board.
4. Define realistic, measurable objectives that are monitored and adjusted every 2 to 3 years.
5. Publish activities and achievements in the biodiversity sector in the company's annual, environmental and/or corporate social responsibility report.
6. Inform suppliers about the company's biodiversity objectives and integrate them accordingly.
7. Explore the potential for cooperation with scientific institutions, non-governmental organizations (NGOs) and/or governmental institutions with the aim of deepening dialogue and continuously improve the corporate management vis-à-vis the biodiversity domain.

##### 2. Actions by Multiple Business Entities

- **Nippon Keidanren (Japan Business Federation):** Since the adoption in 1991 of the "Keidanren Global Environment Charter," Nippon Keidanren has proactively taken action on global environmental concerns, and is continuing such activities, including the promotion of nature preservation activities focused on biodiversity conservation, in keeping with the 2003 "Declaration of Nippon Keidanren on Nature Conservation." The "Declaration of Biodiversity by Nippon Keidanren," announced in March 2009, aims to promote enhanced activities to achieve the three objectives of the Convention

on Biological Diversity. This declaration outlines seven principles and fifteen "action policies," as follows, related to appropriate actions for biodiversity.

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 domestically and abroad, when setting out operational plans.
    - 2-2 Make an effort to ensure that both the providers and users of genetic resources will benefit from their utilization.
  3. Act voluntarily and steadily to contribute to biodiversity
    - 3-1 Make an effort to improve the identification and analysis of biodiversity impacts and improve related business operations.
    - 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 evaluation.
    - 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 implement activities for resource and energy saving related to the use of the "3R" approach (reduce, reuse and recycle) for operations, and the entire lifecycle of products and services while improving upon established practices.
  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 municipalities and educational, research and other relevant organizations.
    - 6-2 Disseminate and share experiences from activities related to biodiversity.
  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.
- Shiga Committee for Economic Development: In June 2008, the Shiga Committee for Economic Development established a "Business and Biodiversity Committee," which conducted research and discussions concerning biodiversity conservation through corporate activities. In April 2009, the committee compiled and publicized

its “Biodiversity Initiative for Lake Biwa – Declaration by Business Leaders in Shiga Prefecture toward a Sustainable Society Rich in Biodiversity.” This declaration stated that biodiversity conservation is an important management issue for businesses in the Lake Biwa region, given that the lake is one of the world’s most ancient lakes, one that has nurtured many endemic species, and which is an irreplaceable wellspring of benefits for people; it urged business leaders to take the lead in further expanding ten kinds of actions, as follows.

1. Respecting the three objectives of the Convention on Biological Diversity (the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits that arise out of the utilization of genetic resources), we will conduct business activities in keeping with them.
2. The lives of people and all livings are the first priority. We aim for a Shiga teeming with a variety of living things.
3. We practice conservation activities for at least one species, or at least one habitat area.
4. In order to protect the unique ecosystem of Shiga, we do not introduce or increase any alien species.
5. We work to recover Shiga Prefecture’s ecosystem network of forests, satoyama, rivers and Lake, and nurture a rich natural environment.
6. We support sustainable primary industry such as organic agriculture, forestry and fishing as a foundation of our society. In particular, we support that agriculture should in principle be organic.
7. We promote local production for local consumption to create sustainable material circulation in the watershed around Lake Biwa.
8. We try to incubate sustainable businesses which contribute to the conservation of local ecosystems.
9. We communicate with our customers and business partners to extend the action of Shiga’s biodiversity conservation to the whole community.
10. We make plans and implement actions to achieve the challenges outlined above.

- Other efforts

There are a number of other, ongoing activities related to private sector engagement for the conservation and sustainable use of biodiversity, including efforts for information exchange, investigation of case studies, network building, etc. For example, the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB) brings together companies aiming to conserve biodiversity and conducts joint research on biodiversity conservation from an international perspective, using the results in dialogues with other companies and stakeholders, all with the goal of enhancing activities to contribute to biodiversity conservation.

### 3. Actions by NGOs

In 2007, FoE Japan, an environmental NGO, participated in the Ministry of the Environment’s “NGO/NPO-Corporate Policy proposal” program, proposing the establishment of a “policy to support the formation of corporate-NGO partnerships for biodiversity conservation.” This proposal was rated as an “outstanding recommendation,” and in fiscal year 2008 a “Feasibility Study for Establishing Criteria for Evaluating

Biodiversity-Related Actions by Businesses" was held.

For this study, deliberations were held from the perspective of citizens, NGOs and NPOs regarding ways to clarify standards for objective evaluation of biodiversity conservation actions taken by corporations as part of their corporate social responsibility efforts. FoE Japan also established an internal "Committee on Evaluation Criteria for Biodiversity-Related Actions by Businesses," which issued a report after its own deliberations.

This Committee developed proposed criteria for evaluating biodiversity conservation actions by businesses from two perspectives: management and performance.

This report can be downloaded at the following website:

<http://www.foejapan.org/forest/biodiversity/090408.html> (Japanese only)



## (5) The Civilization of Easter Island

Easter Island is a small island approx. 120 km<sup>2</sup> in size, located in the Pacific Ocean 3,700 km from the Western coast of South America and some 2,000 km from the nearest inhabited island.

The first inhabitants settled Easter Island in the 5<sup>th</sup> Century, some 400 years after the island's volcanic eruptions ceased. While the number of species was small at that time, Easter Island was covered with lush vegetation, including tall trees. However, there were no rivers that flowed year-round, and no lakes other than crater lakes; people lived off of sweet potatoes and chickens brought in from elsewhere. As the population slowly increased, forests were cleared for land development, fuel gathering, and making thatched huts and tools for daily life, as well as to build canoes for fishing; however, the greatest demand for timber was for transporting heavy, giant stone statues to places of worship around the island.

Without animal manure to fertilize cultivated fields, and as vegetation was stripped from the land, the expansion of denuded areas led to soil erosion and loss of nutrients, resulting in diminished crop yields. For this reason, by 1550 the island could no longer support its population, which had reached 7,000 people, and fell into a permanent state of war over dwindling resources. Easter Island's forest resources were extremely limited, and the islanders seemed aware of this fact — but their civilization collapsed, with unfinished stone statues left in their quarries.

Adapted from the Japanese-language version of the 2002 White Paper on the Environment (*Kankyo Hakusho*), Ministry of the Environment, 2002.

**2. Regarding "Section II: Policies"**

**Biodiversity and Other Environmental Measures Such as to Address Global Warming**

Some of the measures taken by business entities in relation to other environmental issues, such as global warming, are related to biodiversity. It is effective to incorporate into such measures a consideration of the conservation and sustainable use of biodiversity, thereby taking action in a comprehensive fashion.

**-- Global Warming and Biodiversity --**

The conservation and sustainable use of biodiversity must be pursued having an awareness of the fact that there are serious threats of impacts to biodiversity from global warming, but also that biodiversity actions — such as the conservation of forests, grasslands and wetlands, which store large amounts of carbon—can also contribute to the prevention of global warming.

Mitigation of Global Warming	
Promoting the Utilization of Biomass	
Utilization of vegetation (biomass) obtained through ecosystem management (such as thinning of artificial forests and management of secondary forests), for energy usage, as an alternative to fossil fuels, can assist the revitalization of forests and the conservation of rich biodiversity.	Based on the location and production method for the biomass, development of forested areas may result, impacting biodiversity negatively.
Greenhouse Gas Absorption Measures (Carbon Sequestration)	
Forest management to promote greenhouse gas absorption, such as proper planting and thinning, may also assist the conservation of biodiversity.  Efforts to reduce greenhouse gas emissions through stopping deforestation and forest degradation may also help the conservation of biodiversity.	If measures are not implemented properly, they may lead to losses in species.
Adaptation to Global Warming	
It should be possible to conserve biodiversity so as to contribute to increased abilities to adapt to environmental changes such as global warming, but it is necessary to further investigate how this should be done.	

**-- Biodiversity and "3R" (Reduce, Reuse & Recycle) --**

The "mass production, mass consumption and mass disposal" society causes large-scale extraction of living and non-living resources, and other problems such as disturbances to nature's proper biogeochemical cycles.

The 3R approach aims to reduce as much as possible the amount of newly extracted

resources, which in turn can lead to reducing areas used for collection of living resources and for excavation of minerals, making this approach fundamentally useful for biodiversity conservation.

This approach also helps reduce the area of land required for disposal facilities.

However, it must be noted that recycling and related activities are also linked to energy demand.

**-- Biodiversity and Anti-pollution Measures and Measures Related to Chemicals --**

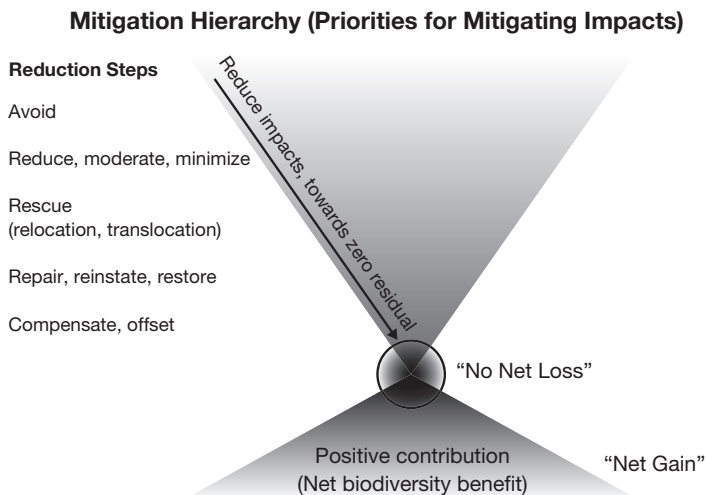
Because water pollutants and chemicals such as environmental hormones can affect organisms and their habitats, reducing the burden on the environment from such substances can also be linked to biodiversity conservation.

### 3. Regarding "References: Implementation Advices"

#### The "Mitigation Hierarchy"

The diagram below illustrates, in an easy-to-understand fashion, the relative priorities among measures to avoid and reduce significant negative impacts on biodiversity resulting from development projects or other activities, as well as actions to implement compensatory measures to address impacts that still remain.

It further presents the concepts of "no net loss" – when negative impacts on biodiversity (including species composition, structure of habitats and environments, ecosystem services, etc.) are balanced out both qualitatively and quantitatively by compensatory measures – and "net gain" – when the effects of compensatory measures are even greater.



An idea advocated as an extension of these concepts involves measuring the impacts remaining after actions to avoid and reduce impacts, and the implementation of "biodiversity offsets" – actions that more than cancel out the remaining measured impacts. Internationally, through the Business and Biodiversity Offset Program (BBOP), experts, companies and governments are involved in activities such as determining methodologies and researching best practices in this regard.

Offsets that supplement avoided and reduced biodiversity impacts may also be effective in reducing impacts on biodiversity as a whole, but methodologies and other aspects are yet to be established, and it will be important to continue careful consideration of these ideas.

In any case, as described above, the first priorities are to avoid and reduce impacts on biodiversity.

Reference:

The Business and Biodiversity Offset Program (BBOP) website  
<http://www.forest-trends.org/biodiversityoffsetprogram/>

Reference  
8

## Summary of Japanese Laws Related to Biodiversity

Type	Name of Law	Summary
Basic Law	Basic Act on Biodiversity	Law for the purposes of conserving rich biodiversity; realizing a society that can coexist with nature and enjoy its benefits into the future; and for contributing to the conservation of the global environment by comprehensively and systematically advancing measures concerning the conservation and sustainable use of biodiversity in Japan. Responsibilities of business operators are stipulated in the Act's provisions specifying the responsibilities of each actor.
National Land Use	National Land Use Planning Act	Law for the purposes of planning comprehensive and systematic national land use by stipulating necessary items concerning the drafting of national land use plans and taking measures for the coordination of land use.
	National Spatial Planning Act	Law for the purposes of contributing to the realization of an economy and society where present and future citizens can lead safe and prosperous lives by developing national spatial plans and taking other measures to promote national land use, improvement and conservation from a comprehensive perspective.
Conservation of nature and landscapes	Natural Parks Act	Law for the purposes of designating areas of outstanding natural scenery as natural parks (national parks or quasi-national parks), protecting them by restricting certain activities, and promoting their appropriate use.
	Nature Conservation Act	Law for the purposes of comprehensively promoting the appropriate conservation of areas where the conservation of nature is particularly necessary by stipulating the development of nature conservation basic policies, implementing nature conservation basic surveys, and conserving areas with outstanding natural environments as wilderness areas, etc.
	Law for the Promotion of Nature Restoration	Law for the purposes of comprehensively promoting measures concerning nature restoration by stipulating basic rationales regarding nature restoration, the responsibilities of parties conducting restoration, the drafting of nature restoration basic policies and other items necessary for nature restoration.
	Landscape Law	Comprehensive law regarding landscapes for the purposes of stipulating basic rationales and the state's responsibilities regarding the management of good landscapes and taking necessary measures such as the development of landscape plans and exercising control for the management of landscapes in designated landscape planning areas and landscape districts, in order to manage landscapes in cities and rural districts.

Type	Name of Law	Summary
Conservation and use of each type of ecosystem	Forest ecosystems	
	Basic Law for Forest and Forestry	Law for the purposes of the appropriate maintenance and conservation of forests, the promotion of mountain villages, and the sustainable and sound development of forestry, including sustainably realizing the diverse functions of forests as a basic rationale.
	Forest Law	Law stipulating the system of forest plans (national forest plan, regional forest plans and other forest plans), the forest land development approval system, the forest operation plan system, the protected forest system, etc.
	Agricultural land ecosystems	
	Basic Law on Food, Agriculture and Rural Areas	Law for the purposes of securing stable food supply and realization of diverse functions through vigorously advancing the sustainable development of agriculture and the promotion of rural areas, for the stability and improvement of citizens' livelihoods and the sound development of the national economy.
	Agricultural Land Act	Basic law stipulating arrangements relating to agricultural land ownership and usage, which are the foundations of agriculture, for the purpose of protecting agricultural land.
	Act on Establishment of Agricultural Promotion Regions	Law for the purposes of promoting the sound development of agriculture and contributing to the rational use of national land resources by clarifying regions that require comprehensive agricultural promotion and taking measures to systematically advance the agricultural policies required for the development of these regions.
	Law on Promotion of Organic Agriculture	Law for the purposes of taking comprehensive measures for organic agriculture promotion policies and working toward the development of organic agriculture by stipulating basic rationales and clarifying the responsibilities of the state and regional governments concerning the promotion of organic agriculture, and stipulating basic matters related to organic agriculture promotion policies.
	Plant Protection Law	Law for the purposes of conducting quarantine inspections of plants for import and export and of domestic plants, elimination of flora and fauna that are harmful to plants and preventing their spread, and thereby working for the safety and furtherance of agricultural production.
	River and lake ecosystems	
	River Law	Law stipulating the approach to development of domestic rivers, incorporating the perspectives of flood control, water utilization and environmental conservation and reflecting the opinions of local residents.
	Water Pollution Control Law	Law for the purposes of preventing water pollution of public waters and groundwater, protecting citizens' health and conserving the living environment by controlling effluent from business establishments, advancing measures for domestic wastewater, and controlling the infiltration of toxic substances underground, etc..

Type	Name of Law	Summary
	Law Concerning Special Measures for Conservation of Lake Water Quality (Clean Lake Law)	Law for the purposes of conserving the water quality of lakes by taking effluent control measures and drafting plans concerning measures that must be taken for the conservation of water quality at lakes where securing environmental water quality standards is urgent.
	Erosion Control Act	Act for the purposes of installing erosion control facilities, prohibiting or restricting certain actions, to limit sediment production, appropriately containing eroded soils and otherwise preventing erosion disasters in designated erosion areas.
Coastal and marine ecosystems		
	Basic Act on Ocean Policy	Act for the purposes of promoting comprehensive and systematic measures concerning oceans by stipulating basic principles concerning oceans, clarifying the responsibilities of the state, regional governments, business operators and citizens, and stipulating development of ocean basic plans and other items that are the basis for measures concerning oceans, in light of the fact that oceans are fundamental for the maintenance of all life, including humans, and that it is important for Japan to become a new ocean nation working for harmony between the conservation of the marine environment and the peaceful and active development and use of the ocean, based on international cooperation.
	Fisheries Basic Act	Act stipulating basic rationales regarding fisheries measures and the items that are the basis for realizing them, for the purposes of the stability and improvement of citizens' livelihoods and the sound development of the national economy.
	Fishery Act	Act for the purposes of developing fisheries production capacity through the comprehensive (multiple and all-around) utilization of waters and the democratization of fisheries by stipulating basic systems concerning fisheries production (the use of fishing grounds) and operating fisheries coordination organizations (fisheries coordination commissions, etc.) comprising fisheries business operators and fishermen.
	Fisheries Resource Protection Law	Law for the purposes of contributing to the development of fisheries through working to protect and foster fisheries resources and to maintain those effects into the future by stipulating regulatory measures such as placing restrictions on the harvest of aquatic animals and plants, and on the numbers of fishing vessels (licensed fishing vessels) that can catch subject species, and stipulating positive maintenance and fostering measures such as protected waters and the governmental hatching and release of anadromous fish.
	Seacoast Law	Law for the purposes of protecting the seacoast from damages from tsunami, high tides, waves and other seawater or ground fluctuations, and planning the maintenance and conservation of seacoast environments and the appropriate public use of seacoasts, and thus contributing to the conservation of the national land area.

Type	Name of Law	Summary
	Port and Harbor Law	Law for the purposes of planning the orderly maintenance and appropriate administration of ports and harbors and developing and maintaining sea routes, while giving consideration to conservation of the environment, to contribute to the development of transportation and to the appropriate use and balanced development of the national land area.
	Act on Prevention of Marine Pollution and Maritime Disaster	Act for the purposes of preventing marine pollution and maritime disaster, securing the proper implementation of international agreements concerning the prevention of marine pollution and maritime disaster, and thus contributing to the conservation of the marine environment and the protection of human life, body and property by regulating the discharge of oil, hazardous liquid substances and waste from vessels, marine facilities and aircraft to the ocean, regulating the disposal of oil, hazardous liquid substances and waste on the ocean floor, regulating the release of exhaust gas from vessels into the air, regulating the incineration of oil, hazardous liquid substances and waste on vessels and at marine facilities, securing the proper disposal of waste oil, and taking measures to control discharged oil, hazardous liquid substances, waste and other items, prevent the emergence and spread of maritime fires, and prevent ship transportation risks accompanying maritime fires and other disasters.
Urban ecosystems		
	City Park Law	Law for the purposes of working for the sound development of city parks by defining city parks, defining park facilities related to city parks, and stipulating items concerning park establishment, permissions and terms for exclusive use, the duties of park managers to preserve city parks, the preparation and management of city park registers, and the three-dimensional park system.
	Urban Green Space Conservation Law	Law for the purposes of working to form good urban environments through conserving green space in cities and advancing greening and the development of city parks by stipulating: basic plans concerning the conservation of green space and the advance of greening in cities; the granting of status to green space conservation areas, special green space conservation districts and greening areas in city planning; the regulation of behavior in green space conservation areas and special green space conservation districts; the purchase of land for special green space conservation districts; green space agreements; and the designation and works of green space management organizations.



Type	Name of Law	Summary
	City Planning Law	Law stipulating the contents of city plans, including land use and the maintenance of city facilities, and the procedures for their determination, for the purposes of working for the sound development and orderly maintenance of cities, and thus contributing to the balanced development of the national land area and the furtherance of public social welfare. Stipulates regulations on structures within scenic preservation areas as one land use item.
	Law for the Conservation of Suburban Green Zones in the National Capital Region	Law for the purposes of preventing disorderly urban sprawl in suburban adjustment areas designated by the Metropolitan Area Readjustment Act (1956) and thus contributing to the orderly development of the national capital region by stipulating the necessary items concerning the conservation of green zones with good natural environments within suburban adjustment areas.
	Law for the Development of Conservation Area in Kinki Region	Law for the purposes of contributing to the preservation of cultural properties, the conservation of green spaces and the conservation and development of tourism resources within conservation zones designated by the Kinki Area Adjustment Act (1963).
	Law Concerning Special Measures for Preservation of Historic Natural Features in Ancient Cities	Law stipulating special measures to be taken by the state and other parties to preserve historic natural features in ancient cities as distinctive Japanese cultural assets that should be enjoyed equally by all citizens and handed down to future generations.
	Law Concerning Preservation of Trees for Conservation of Scenic Beauty of Cities	Law for the purposes of contributing to the maintenance and improvement of sound urban environments by stipulating the necessary items concerning the preservation of trees for the conservation of the scenic beauty of cities.
Protection and management of wildlife	Wildlife Protection and Hunting Law	Law for the purposes of working for the protection of wildlife and the normalization of hunting by implementing works for the protection of wildlife, preventing damage by wildlife, and preventing dangers related to the use of hunting gear.
	Law for the Conservation of Endangered Species of Wild Fauna and Flora	Law for the purposes of working to conserve endangered species of wild fauna and flora by designating rare wild fauna and flora, regulating their capture, transfer, export and import, designating habitats and other wildlife preserves, and implementing protection and propagation projects.
	Invasive Alien Species Act (Non-Native Organisms Act)	Law stipulating control of organisms specified as designated invasive alien species and regulation of their importation and handling to prevent damage by designated invasive alien species to ecosystems, human life and body, and agriculture, forestry and fisheries.

Type	Name of Law	Summary
	Law Concerning the Conservation and Sustainable Use of Biological Diversity through Regulations on the Use of Living Modified Organisms	Law stipulating regulations concerning the use of living modified organisms in accordance with the type of use and procedures concerning their importation and exportation, so as to implement the Cartagena Protocol on Biosafety within Japan.
	Law for the Humane Treatment and Management of Animals	Law for the purposes of promoting the spirit of humane treatment of animals among citizens and contributing to cultivating respect of life, friendship and the sentiment of peace by stipulating items concerning the prevention of animal cruelty, the proper handling of animals, and other humane treatment, and for the purposes of preventing the violation of human life, body and property by animals by stipulating items concerning the management of animals.
Prevention of impacts on biodiversity from chemical substances	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	Act for the purposes of establishing a system for the prior inspection of chemical substances newly manufactured or imported to determine whether or not they have low degradability and implementing the necessary controls on their manufacture, importation and use in accordance with those properties, to prevent the pollution of the environment by chemical substances.
	Agricultural Chemicals Regulation Law	Law for the purposes of working for the standardization of the quality of agricultural chemicals and securing their safe and proper use by establishing a registration system for agricultural chemicals and regulating their sales and use.
Others	Environmental Impact Assessment Law	Law for the purposes of giving appropriate environmental consideration by having business operators themselves conduct investigations, projections and assessments before undertaking large-scale projects for which there are concerns of significant environmental impact, and having their results reflected in decisions regarding the project contents.
	Law for Enhancing Motivation on Environmental Conservation and Promoting Environmental Education	Law stipulating the basic rationales regarding environmental education and enhancing motivation for environmental conservation, clarifying the responsibilities of government, business entities, private-sector bodies and other actors, and stipulating the drafting of basic policies, measures to promote environmental education at schools and other locations, personnel certification and other business registration systems, approaches to partnerships, financial measures and other initiatives to construct a sustainable society.
	Law for the Promotion of Ecotourism	Law stipulating basic rationales regarding ecotourism, the drafting of basic policies by the government, and measures concerning the protection of designated natural tourism resources to comprehensively and effectively advance measures concerning ecotourism.

Type	Name of Law	Summary
	Tourism Nation Promotion Basic Law	Law stipulating basic matters necessary for Japan to become a nation which prospers from tourism (a tourism nation). Considering that becoming a tourism nation is an essential factor for the development of Japan's economy and society in the 21st century, the law stipulates basic rationales as guidelines, the responsibilities of concerned parties, the tourism white paper, the tourism nation promotion basic plan to be drafted by the government, the contents of the basic measures that the state should take to become a tourism nation, and the items that the state and local public entities should cooperate on in order to comprehensively and systematically promote tourism nation measures.
	Law for Protection of Cultural Properties	Law for the purposes of working for the preservation and use of cultural properties, and thus contributing to the cultural improvement of citizens and the advance of world culture.
	Law Relating to Protection of the Environment in Antarctica	Law for the purposes of ensuring the proper and smooth implementation of the Protocol on Environmental Protection to the Antarctic Treaty, by establishing a system to confirm Antarctic Activity Plans and taking necessary measures for restricting activities in Antarctica to protect the environment of Antarctica through international cooperation.

Note: This table was compiled based on the Basic Act on Biodiversity and on the laws gathered when the Third National Strategy on Biodiversity was drafted.



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for the Conservation and Sustainable Use of Biodiversity

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# Guidelines

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Ministry of the Environment

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