2nd edition

GUIDELINES FOR PRIVATE SECTOR ENGAGEMENT IN BIODIVERSITY

Ministry of the Environment
JAPAN

Summary Executive Summary

1. Introduction

The combination of "business activities" and "biodiversity" may have been strange a while ago. But now the situation has changed a lot. In recent years, expectations concerning conservation and sustainable use of biodiversity towards business operators are increasing year by year, and so in the near future, business entities who do not make any activities on biodiversity in the near future may be left out of the market.

The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10) was held in Nagoya City, Aichi Prefecture in 2010 and the "Aichi Target" that the world should address by 2020 for conservation and sustainable use of biodiversity was adopted.

It was a big step forward for the biodiversity activities to spread among Japanese companies. In September 2015 SDGs (sustainable development goals) were adopted at United Nations Conference on Sustainable Development. Conservation of natural capital which is the foundation of society and economy is inseparable from realizing a sustainable society. Many domestic and overseas companies view social issues indicated by SDGs as business opportunities, and the movement introducing them into business strategies has already begun. There is a change also in the investor side. ESG investments exploiting environmental, social and governance information that does not appear in the financial statements for investment decisions are expanding and attracting attention as a new basis for evaluation to measure the investment value of companies. We are entering upon such an era where the achievement of SDGs is demanded, and attracting ESG investment is of enterprises are of great interest. It is therefore almost impossible to do business activities separately from the biodiversity issues.

2. Goals of the Guidelines

However, because the concept of "biodiversity" is too abstract, business entities often wonder that "even if we are interested in biodiversity, we do not know the relationship between the business activities and biodiversity". They say they can not take the first step toward preservation and sustainable use of biodiversity unless they understand "what are the actions they should actually take.

Therefore, we provided this "Guideline for Biodiversity Private Sector Engagement (2nd edition)" that summarize the basic information and ideas necessary in order to mainstream biodiversity conservation and sustainable use in the business. It aims to facilitate the understanding of business entities who have yet been working on the problem of biodiversity and to promote their engagements in effective activities relating to biodiversity.

3. Point of the Guidelines

The guidelines are a revision of its 1st edition of 2009 for the first time in eight years.
Since 2009, increasing amount of consideration has been given to biodiversity which is evidenced internationally in the activities of COP10, SDGs, or global business trends towards disclosure of non-financial information, or domestically in the supply and value chains that commit to biodiversity, where Keidanren (Japan Federation of Economic Organizations) and JBIB (Japan Business Initiative for Biodiversity) have worked to promote. The relationship between biodiversity and private enterprises is now regarded as a direct issue for carrying out sustainable business activities, and the environment surrounding the business has changed significantly, such as innovative and fundamental activities are advanced it is.

The 2nd edition includes following main 4 points：

1. Add recent trends on biodiversity, clarify the position of the business entities, and explain possible risks and opportunities for business entities.
2. Explain that there are aspects where business activities can contribute to preservation of biodiversity. Business activities can not only negatively impact biodiversity, but also make it better.
3. Describe "relationship between activities and biodiversity" for each business activities, such as raw material procurement, production, processing, etc., by industry type. Since biodiversity is addressed

not only by businesses of a specific industry type, but since all businesses are required to undertake activities, they are organized by fields based on Japan Standard Industry Classification.

4. Explain basic concepts such as key messages, ideas, practical tips, examples for each activity such as system construction and target setting.

In addition to this, the accessibility is also improved so that the place where the necessary matter is posted becomes easy to understand, and it is revised so that it can be utilized by hand when a person in charge in a company faces any troubles.

4. Structure

The guidelines (2nd edition) incorporates the above points and has a total of 4 Parts.

Part 1 Business activities and biodiversity

Here, we will explain the relationship between business activities and biodiversity prior to implementation of activities related to biodiversity, for instance why enterprises need to deal with biodiversity.

Although you might think that "business activities and biodiversity are not much related to each other" and "we feel biodiversity is important, but don't know why", there are clear reasons why companies should make commitment to biodiversity. Here are the two major reasons.

The first part is dealing with risks. Continuing resource overcrowding as it is, there is the possibility that it will be bounced back to the company as raw materials shortage and procurement costs increase. In addition, it may lead to a decline in the image of corporate brands due to the apparent adverse effects on biodiversity. Furthermore, laws and regulations related to biodiversity will be further strengthened in the future. Starting activities from now on as a preparation for that can also be expected to enhance the future market competitiveness.

The second part is adaptation to opportunities. In addition to enhancing the corporate value through aggressive activities and strengthening competitiveness through differentiation from competitors in the same industry, we can directly and indirectly benefit consumers, investors, and employees' satisfaction improvement. It is thought that the possibility of enjoying will be higher than ever.

In this way, business entrepreneurs tackling biodiversity has a large merit particularly in terms of management strategy. Even if clear influence has not occurred now, such an era will come in the near future. It seems easy to imagine that it contributes to the continued development of the company.

Part 2 Basic idea

This is the core part of the guidelines, which shows the basic idea when business entities engage in biodiversity activities. First, as a basic idea, we will explain "basic principle" in Chapter 1 and "viewpoints to consider" in Chapter 2. Three basic principles are "expansion of business activities that contribute to avoidance / minimization and conservation of impact", "preventive measures and adaptive activities" and "long-term perspective", and conservation and sustainable development of biodiversity. It is important to consider avoidance and minimization of influence, and consider whether our technology and products contribute to conservation of biodiversity. Furthermore, in actual activities such as projects, it is important to take into account the element of irreversibility as well as forecast uncertainty existing in ecosystem, and be on the preventative side and combaine measures that can flexibly adjust to the situation through monitoring, which then assurs your long term, enduring commitment to the conservation. The viewpoints to be considered are "measures according to the characteristics and scale of business", "Consideration of supply chain and value chain" "Collaboration with consideration of various stakeholders", "Integrated approach to issues", "Target setting and progress Management", "Contribution to society". And “Information dissemination and disclosure" is an important viewpoint that we should not forget when taking activities into next stage.

Chapter 3 explains how to proceed with specific measures. Activities concerning biodiversity at business entities is based on the common activities of all business entities that are necessary for all businesses (① System structure, ② Underdstanding the relationship between business activities and biodiversity, ③ Setting objectives ④ Drafting plan, ⑤ Building internal capacity, ⑥ Collaboration/ Communication with external stakeholders ⑦ Monitoring, ⑧ Reviewing plan). Each business

activities (① Raw material procurement, ② Use of biological resources, ③ Production / processing, ④ Investment and financing, ⑤ Sales, ⑥ Research and development, ⑦ Transportation, ⑧ Land use / development, ⑨ Holding management) will be classified according to different business process. In most cases, based on the common activity of business entities, we will promote activities for each business.

In common activities from business entities, flows will be explained so that we can see the direction where it is going toward and how to proceed.

Activities for each business explain the relationship with biodiversity in business processes and business activities for each field based on the Japan Standard Industry Classification. Understanding that business activities involving themselves are closelyrelated to biodiversity both on the upstream side and the downstream side of the processleads them to take actions that take biodiversity into account throughout the supply chain.

In these activities, it is ideal to proceed with the PDCA cycle from a preventive and adaptive point of view, but it is expected to devise ingenuity according to the characteristics and scale of the business entities. Also, in starting specific activities, let's start with the places where it seems necessary to use these tools.

Part 3 Common activities of businesses entities

Here, we will summarize eight common activities that business entities wage when they commit to biodiversity. In each activity, there provided 1) key messages (core messages for business entities relating to standpoint to be taken when engaging in such activities, and what's the merit of those activities), 2) ideas (a way of thinking and viewing in order to carry out the activities, and a way of setting up objectives), 3) tips (reference information for carrying out activities, and some clues for efficiently conducting activities), and 4) cases (topics and cases of activities some business entities have already done).

This section organizes the necessary action items regardless of the type of industry and business type, and by referring to each and seeing it, it will be possible to acquire the basic stance and direction of the initiatives. In addition, please refer to cases of activities by advanced companies as well.

Part 4 Activities for each business

Here, we will explain the business process and business activities that vary by business sector. In each sector, there provided 1) key messages (core messages for business entities relating to standpoint to be taken when engaging in such activities, and what's the merit of those activities), 2) ideas (a way of thinking and viewing in order to carry out the activities, and a way of setting up objectives), 3) example cases that are expected to business entities (examples of practical efforts expected to business entities), and 4) cases (topics and cases of activities some business entities have already done).

This section is a summary of action items to be implemented according to the industry type and business type of the company. By carrying out the actions in comparison with the business contents of the company, you will be able to make substantial consideration and thus promote contribution to biodiversity in your business practices. Similar to the Part 3, examples of activities by advanced companies are introduced here for your reference.

5. Conclusion

Conservation of biodiversity, like global warming, is now a situation without waiting. So far, we have focused on growth through various activities. While doing so, we have undeniably degraded biodiversity. In order to build a society in which nature's blessings are enjoyed in the future, various entities such as state government, local governments, business entities, citizens need to voluntarily promote activities related to biodiversity.

In particular, business entities are deeply involved in domestic and international biodiversity through their activities and play an important role as a member of society, such as having a great influence on consumer relations among individuals as citizens and biodiversity through products and services. If business activities are promoted without consideration of these perspectives, there is a risk that raw materials can not be procured, products will not be sold, etc. On the other hand, by conducting

activities related to biodiversity, it is possible to improve corporate value and opportunities to attract consumption and investment. Companies that took this reality early have already started various activities related to biodiversity, and the number is increasing. The role and significance of companies' biodiversity conservation will continue to increase.

Corporations and business entities are encouraged to get more involved in addressing biodiversity issues. We expect those companies to contribute to the recovery of biodiversity and also grow their business further. We hope this Guidline will serve as an aid to your effort.

◆ Overview of the Guidelines for Private Sector Engagement in Biodiversity (2nd Edition)

Biodiversity supporting life and livelihood

Since the birth of the earth, a long time has passed and various creatures including human beings were born and lived, related to each other (biodiversity).
Our lives and living are supported by the benefit brought by the biodiversity (ecosystem services).

<Examples of the benefits from biodiversity>

○ It brings rice, vegetables, wood, fish, clear water etc.

○ It creates regional landscapes such as mountains, rivers and oceans and cultures.

○ We get tips for technological innovation from the mechanism of nature.

<Example showing current status of biodiversity>

● Extinction speed of species is accelerated by about 1,000 times in the last hundreds of years due to human activities.

● World's forest area has decreased by 1.29 billion ha, which is equivalent to about 3.4 times of Japan's land area, over the last 25 years.

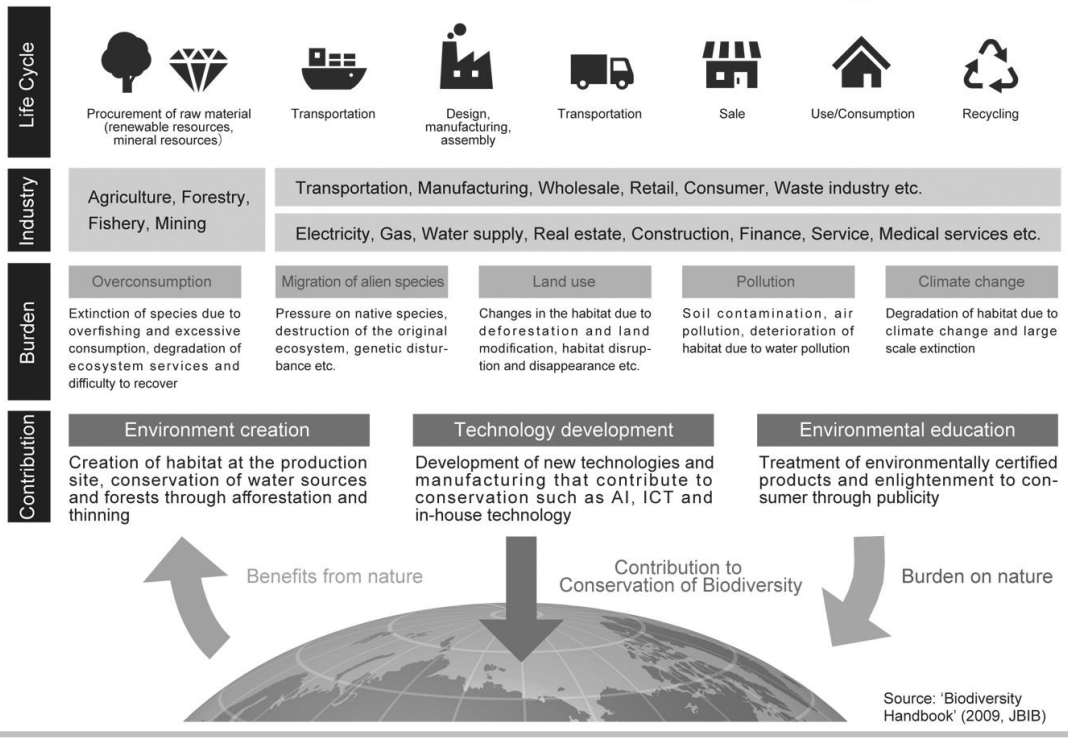
● Awareness of biodiversity is about 70% ("I know", "I do not know the meaning, but somehow heard").

Everyone's cooperation and efforts are necessary to continue enjoying the benefits from the biodiversity.

In the future, in order for us to enjoy the blessings of biodiversity, it is essential for us to build society to cooperate to protect biodiversity and to make sustainable use so that we will not exhaust its grace.

The expected role of business entities is huge

In particular, business operators are related to domestic and international biodiversity through their activities and play an important role as a member of society as they are involved in the relationship between general public as consumers and biodiversity through their products and services. Increasing number of companies has already started to address biodiversity issues.



Source: 'Biodiversity Handbook' (2009, JBIB)

Changes in the circumstances surrounding business since 2009

International trends

October 2010 adopted the new strategic plan 2011-2020 (**Aichi Target) at COP 10** (Nagoya city, Aichi prefecture) (United Nations Decade on Biodiversity) during the decade from 2011 to 2020)

September 2015 adopted "**Agenda 2030: Sustainable Development Goals (SDGs)"** at United Nations Conference on Sustainable Development

September 2015 ISO14001 was revised, **international standard on biodiversity came into force**

Domestic trends

In 2010, Economic community established 'Biodiversity Private Sector Engage Partnership' and formulated action plans.

Formulated "**The National Biodiversity Strategy 2012-2020**" in compliance with the 2012 **Aichi Target**

2013 - "Japan Business Initiative for Biodiversity **(JBIB**) prepared and announced guidelines on land use, water management, raw material procurement etc.

The idea of 'natural capital' to capture the natural environment as one of the important capital supporting the people' s lives and corporate management has rapidly spread.

ESG investment (Environment-Society-Government) which is not shown on the financial statement has expanded.

SDGs "wedding cake" illustration presented by Johan Rockström and Pavan Sukhdev. The capitals (written in italic type) added by InterRisk Research & Consulting with their permission.
Source: Material provided from InterRisk Research & Consulting, Inc.

Since 2009 when the 1st edition was published, the social situation on biodiversity has changed and the activity of the company needs to be more than ever.

Review meeting on revision of Guidelines for Private Sector Engagement in Biodiversity

■ Committee list (in alphabetical order, honorific title abbreviation ○: chairperson, affiliation as of December 2017)

Naoki Adachi, Representative Director, Response Ability Inc.

Hiroshi Ishihara, Keidanren Committee on Nature Conservation Chairman / Mitsui Sumitomo Trust & Banking Co., Ltd.

○Naoki Kachi , Tokyo Metropolitan University Tokyo Graduate School of Science and Engineering Professor

Haruko Kanamaru, AEON Co., Ltd. Group Environment & Social Contribution Division Manager

Michinori Kutami, Fujitsu Limited Principal · Technologist, Environment & CSR Headquarters

Yasushi Hibi, General Association of Japan Conservation International Japan

	Schedule	Main agenda
1st Review Meeting	October 26, 2016	Issues and revision policy of the Guidelines (1st edition)
2nd Review Meeting	January 20, 2017	Review of draft guidelines (2nd edition)
3rd Review Meeting	September 13, 2017	Review of draft guidelines (2nd edition)
Public comment	October 24, 2017- November 23, 2017	Proposed guidelines (2nd edition) - Public comment
4th Review Meeting	December 6, 2017	Determination of guideline (2nd edition)

Main points of the 2nd edition

○ Recent trends on biodiversity (Adoption of SDGs, Expansion of ESG investment, etc.) are added and the risks and opportunities that can occur in business operators are explained [Part 1]

○ Commentary on corporate activities not only affect biodiversity but also contribute to conservation. [Part 2]

○ Explain the relationship between biodiversity and scene-by-scene activities such as raw material procurement, production / processing for each industrial classification of Japan Standard Industry Classification [Part 2]

○ For concrete activity, explanation of key ideas such as key message, idea, practice hints, examples for each activity [Part 3,4]

Basic Idea

■Basic principle

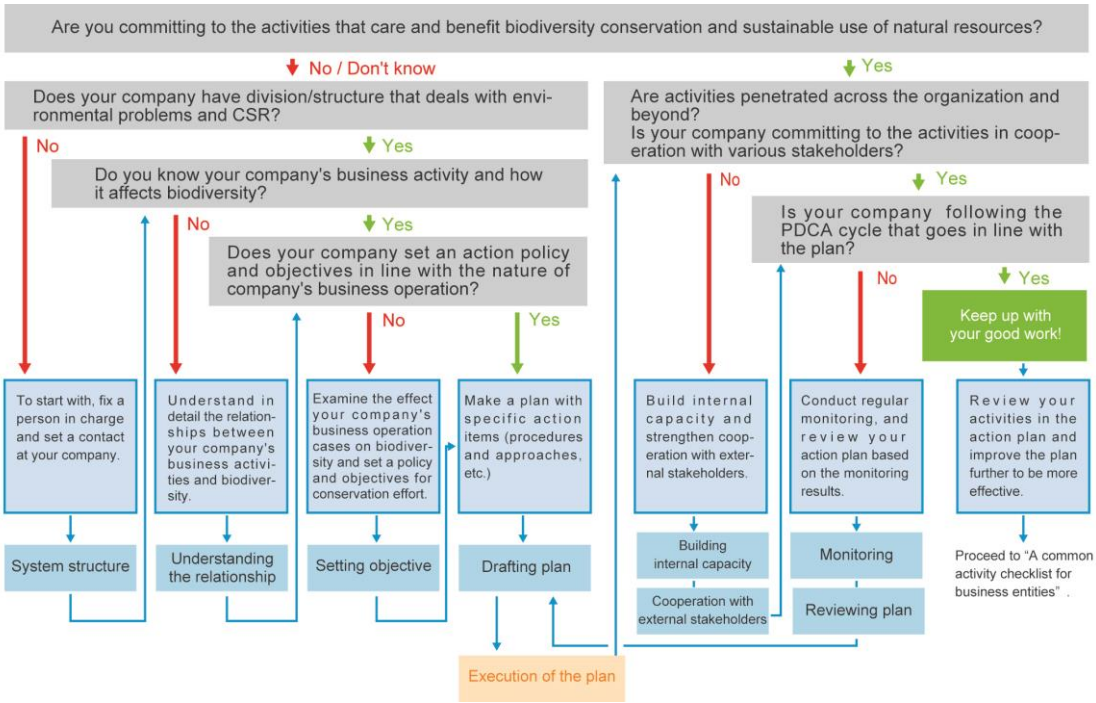
- ① Expansion of business activities contributing to avoidance / minimization and conservation of impact on biodiversity.
  It is important to avoid or minimize the impact of business activities on biodiversity and try to utilize land and natural resources in a sustainable manner, considering domealong with changes in socioeconomic activities. Also, it is important to focus on the possibility that technologies, products and services created by business activities could contribute to conservation and sustainable use of biodiversity and to promote such initiative.
- ② Preventive activity and adaptive activity based on precautionary principle
  In conservation and sustainable use of biodiversity, it is important to take preventive actions, as well as adaptive actions which reflect monitoring results, while making efforts to enhance scientific knowledge.
- ③ Long-term perspective
  Since various factors are complicatedly related to the impact on biodiversity, it is important to preserve and restore ecosystems etc. from the long-term perspective in the conservation and sustainable use of biodiversity.

■Point of view to consider

- ① Activity according to the characteristics and scale of business
- It is important to have a viewpoint to explore the degree of influence on biodiversity for each businesses and the possibility that technologies and products possessed contribute to biodiversity
- ② Consideration of supply chain and value chain
- It is important to tackle the conservation and sustainable use of biodiversity at each stage of the supply chain and to have a point of view to create value from the viewpoint of the value chain
- ③ Collaboration and consideration with diverse stakeholders
- It is important to have a perspective to organically and flexibly collaborate with various related stakeholders and local communities
- ④ Integrated approach to issues
- It is important to have a viewpoint that there is a possibility of contributing to solving problems in different environmental fields
- ⑤ Target setting and progress management
- It is important to have a viewpoint of backcasting that progresses while progressing towards a big goal, in addition to forecasting to build realizable goals
- ⑥ Social Contribution
- It is important to have a viewpoint that business entities are economic entities such as pursuit of profits and that contribution to biodiversity is required as a member of society

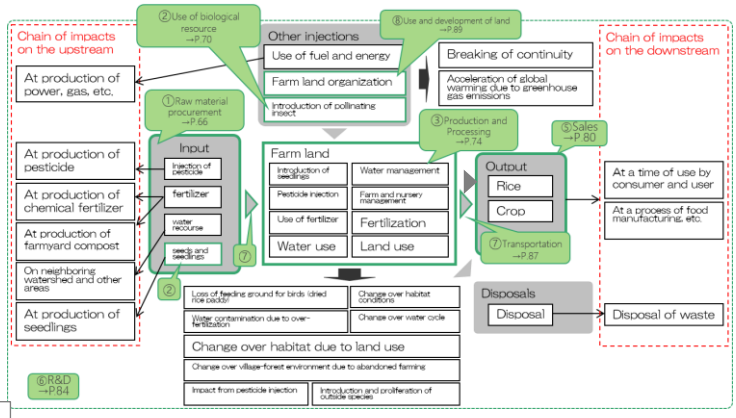
Common activities of business entities

[Common activities of business entities]
Management aspect common to all business entities (basic for promoting activity)



Activities for each business

[Activity for each business]
Action Items according to varying business prosess and activities that differ by businesses
（Different according to industry / business description / value chain)



- Background diagram exemplifies the impact on biodiversity from input / output etc. in business activities by industry type
- ✓ Business flow is represented by "," and central business activities are located at the center of the figure
- ✓ Identify the details that affect outside business activitie
- ✓ It should be noted that impact (negative influence, contribution) also occurs especially on the upstream side and downstream side of central business activities (red frame)

- ✓ At each stage of business activities, content to be considered is framed by "activity for each business activity"
- ✓ In the balloon, describe the name of "activity for each business activity" and the specific page for introducing tips and examples

Industry (*1)		Relationship between economic activity and biodiversity (*2)	Activity per business activity								
			①Raw material procurement (67)	②Use of biological resources(71)	③Production / processing(75)	④Investmen / Financing(78)	⑤Sales(81)	⑥R&D(85)	⑦Transportation(88)	⑧Land Use / Development(90)	⑨Holding management(94)
Primary industry	Agriculture, Forestry	1a. Agriculture (rice cultivation / upland farming), 1b. Agriculture (animal husbandry), 1c. Forestry	○	○	○		○	○	○	○	
	Fishery	2a. Fishery (other than aquaculture), 2b. Fishery (aquaculture)	○	○	○		○	○	○		
Secondary industry	Mining, quarry, gravel-digging industry	3. Mining			○		○	○	○	○	
	Construction industry	4. Construction industry	○	○	○		○	○	○	○	
	Manufacturing industry	5a. Manufacturing industry (electronics and electric machinery), 5b. Manufacturing industry (food and beverage), 5c. Manufacturing industry (pulp and paper)	○	○	○		○	○	○	○	○
Third industry	Electricity, gas, heat supply, water supply industry	6a. Energy industry, 6b. Water industry	○		○		○	○	○	○	○
	Information and communication industry	7. Information and communication industry					○	○	○	○	○
	Transportation industry, postal service	8. Transportation · Postal Service	○				○	○	○	○	○
	Wholesale and Retail	9. Wholesale / Retail	○				○	○	○	○	○
	Finance, insurance	10. Financial/Insurance service				○	○	○		○	○
	Real estate industry, rental business	11a. Real estate business, 11b. Rental business				○	○	○		○	○
	Academic research, specialized / technical service industry	12. Academic research, specialized / educational services, educational learning support	○	○			○	○	○	○	○
	Accommodation food service	13. Accommodation · Food service	○	○			○	○	○		○
	Lifestyle-related service industry, entertainment	14. Living related service industry, 15. Tourism industry	○	○			○	○	○	○	○
	Education, learning support industry	(See 12.)	○	○				○	○	○	○
	Medical care, welfare	16. Medical care, welfare	○	○	○			○	○	○	○
	Composite service industry (post office)	(See 8.)	○				○	○	○	○	○
	Composite service industry (Cooperative association)	(See 1 or 2)	○	○	○		○	○	○	○	
	Service industry	17. Recycling / Waste Disposal Industry	○		○		○	○	○	○	○

Note: "O" in the table indicates that the activity for each business activity may apply
Source) * 1: Japan Standard Industry Classification (H 25.10, Ministry of Internal Affairs and Communications)
* 2: The relati
onship between business activities and biodiversity
(Http://www.biodic.go.jp/biodiversity/private_participation/crosslink/index.html)

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Introduction

1. Background

Our livelihoods and economies are supported by the blessings gained from a wide variety of organisms and ecosystems, namely biodiversity-based ecosystems, as this grace has been passed on from past to present generation. It should be inherited to future generations. Especially, since Japan relies heavily on world resources including natural capital, it is necessary to consider not only domestic but also overseas biodiversity-based ecosystem.

In order to realize "a harmonious symbiosis society" that preserves the biodiversity-based ecosystem and can enjoy its grace for the future, various entities such as citizens, business entities, other private organizations, local governments must promote activities on conservation and sustainable use of biodiversity. Furthermore, the construction of a "nature symbiotic society" will lead to the formation of a "sustainable society" coupled with the establishment of a "low carbon society" and "recycling society". In "The National Biodiversity Strategy 2012-2020" stated that: "As a fundamental way of thinking for realizing a society that lives in harmony with nature,"It is important to treat nature with respect and reverence, which not only brings bountiful blessing to us, but can also be a treat. It is also important to understand that we are a part of nature. On top of that, it is important to choose activities that are in accordance with symbiosis and circulation-based nature (speech) so that you can receive the blessings of the future without losing the balance of nature. In that respect, it is necessary to consider nature as an asset to be handed over to the next generation, to recognize its value accurately, to think about a sustainable economy that does not harm nature."

Meanwhile, in the "Biodiversity awareness survey (Internet survey)" carried out by the Ministry of the Environment in 2017, 70.4% answered as "I know the word biodiversity" or "I do not know the meaning, but have ever heard the word". And each entity is required to promote further activities.

In particular, business entities are involved in ecosystems based on domestic and international biodiversity through its activities and play an important role as a member of society as they are involved in the relationship between consumers and the general public and biodiversity through products and services. This is widely recognized by the international community, and resolutions related to private sector participation continued to be adapted from the 8th to the 13th meetings of the Conference of the Parties to the Conference of the Biodiversity Convention (COP). And the following target was adopted in the Aichi Target (Strategic Goal A, Target 4) at COP 10 in 2010Aichi Target: "At the latest by 2020, the government, business and all stakeholders at all levels will take action to achieve the plan for sustainable production and consumption, or plan for doing so, and to keep the impact of the use of natural resources within the safe range of the ecological limit "[1].

In addition to this, the movement to expect conservation and sustainable use of biodiversity for business entities such as natural capital protocol and CDP[2] has developed, and the expectation from business entities is increasing over the years. Furthermore, it is expected that the activities of business entities will bring about the improvement of awareness of employees and the change of consumer behavior of each citizen, further accelerating the activities of each entity.

Based on these trends, the Ministry of the Environment has been carrying out measures that promote a better understanding of biodiversity at the national level and encourage participation and cooperation in the conservation and sustanable use of biodiversity by diverse entities such as national and local governments, business entities, citizens and private organizations. The Guidelines are also part of that.

[1] Ministry of the Environment website "Learning by everyone, biodiversity that everyone protects" (https://www.biodic.go.jp/biodiversity/index.html)

[2] CDP (Formerly Carbon Disclosure Project) is an NPO that institutional investors operate in cooperation. We send questionnaires to the world's leading companies seeking information disclosure, analyze and evaluate the answers, scoring it and making it public. (Https://www.cdp.net/en)

2. Goals

The Guidelines aim to promote mainstreaming the conservation and sustainable use of biodiversity by encouraging business entities to take active approaches on biodiversity, which bring a promise of contribution toward realizing a society in harmony with nature where human beings can enjoy the benefits of biodiversity into the future.

In addition, the activities on conservation and sustainable use of biodiversity by business entities should be made as a part of voluntary activities by business entities to think independently based on industry type, business characteristic, and relationship with biodiversity. For this reason, the Guidelin is not regulatory, nor specifies obligatory provisions of laws, but provide guidelines for business entities to tackle voluntarily, based on the related provisions in the Basic Act on Biodiversity.

3. Intended audiences

The Guidelines are mainly for business entities[3] and will serve as a working-level "textbook" particularly for business entities who are planning to engage in conservation and sustainable use of biodiversity for the first time.It introduces the relationship between business activities and biodiversity andexplains concretely what kind of activities of business entities are expected by the society. In addition, even for business entities who are already undertaking advanced and exemplary initiatives, it can be utilized as a "reference book" for reviewing or improving their activities.

The relationship between business activities and biodiversity is complicated and varies depending on the contents of the business, but the relationship between business activities and biodiversity is considered to be similar in the same industry. For this reason, it is expected that business operating organizations that are in the position of grouping industries will play an important role, such as preparing behavioral guidelines in which characteristics of industries are taken into consideration and building capacity of their affiliated organizations. For business operating organization like this, we have prepared and announced a separate guidance (draft)[4], so please refer to that.

4. Structure of the guidelines

The Guidelines consist of four main sections.

In Part 1, "Business activities and biodiversity" explains why business entities need to tackle the theme biodiversity that is not easily related to business entities.

In Part 2, "Basic idea", we explain effective tools and procedures for business entities to proceed their activities.

In Part 3, "Common Activities shared by different business entities," introduces examples of building structures, planning and promotion, etc. that need to be implemented regardless of type of industry.

In Part 4 "Activities for each business", we explain the activities expected of business entities. We introduce practical examples of initiatives for each business activities such as raw material procurement, production/ processing, sales etc.

As mentioned earlier, the Guidelines are directed to working-level persons of business entities. Meanwhile, understanding and making decisions by executives are indispensable for implementing proper activities as business entities.

5. Revison of the guidelines

The 2nd edition of the Guidelines are based on the changes in the circumstances surrounding biodiversity since 2009, when the first edition was released, the progress of international activities, the accumulation of social understanding and knowledge, the maturity of business entities's recognition and activities. We updated and revised the contents based on the rise, etc. In the future, we plan to revise according to progress of these situations.

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[3] In the guidelines, "business operators" are used as concepts including large enterprises, small businesses, universities and other corporate enterprises and individual businesses.

[4] "Guidelines for business organizations for conservation and sustainable use of biodiversity (draft)" (2016, Natural Environment Bureau, Ministry of the Environment)

6. About the Review Committee

The Guidelines were prepared and announced by natural environment bureau of the Ministry of the Environment after consideration at the "Review Committee on Revision of Private Sector Engagement Guidelines for Biodiversity" held from 2016 to 2017.

■Committee member list (in alphabetical order, honorific title abbreviation ○: chairperson, affiliation as of December 2017)

Naoki Adachi, Representative Director, Response Ability Inc.

Hiroshi Ishihara, Keidanren Committee on Nature Conservation Chairman / Mitsui Sumitomo Trust & Banking Co., Ltd.

○Naoki Kachi, Tokyo Metropolitan University Tokyo Graduate School of Science and Engineering Professor

Haruko Kanamaru, AEON Co., Ltd. Group Environment & Social Contribution Division Manager

MIichinori Kutami, Fujitsu Limited Principal · Technologist, Environment & CSR Headquarters

Yasushi Hibi, General Association of Japan Conservation International Japan

■Background and Review committeee of 'Guidelines for Private Sector Engagement in Biodiversity'

	Schedule	Main Agenda
1st Review Meeting	October 26, 2016	Issues and revision policy of the Guidelines (1st edition)
2nd Review Meeting	January 20, 2017	Review of draft guidelines (2nd edition)
3rd Review Meeting	September 13, 2017	Review of draft guidelines (2nd edition)
Public Comment	October 24 – November 23, 2017	Public comment on draft guidelines (2nd edition)
4th Review Meeting	December 6, 2017	Determination of guidelines (2nd edition)

Part 1 Business activities and biodiversity

What is the relationship between business activities and biodiversity? How does the loss of biodiversity affect our business activities? What kind of activity is needed for the next generation to continue business activities while enjoying ecosystem services?

In this part, we will explain the basic information to start thinking about these problems. Let us first build a common understanding of the present situation before formulating any actions for biodiversity conservation and sustainable use of natural resources.

Chapter 1: The Status of Biodiversity

1. Crisis of Biodiversity That Proceeds on a Global Scale

Biodiversity is at stake in various stages around the world.

The forest area of the world has decreased from 4.228 billion hectares in 1990 to 39.99 billion ha in 2015. The entire forest area of 1.29 billion hectares that declined in the past 25 years[5] is equivalent to about 3.4 times the Japan's land area. Also, more than 30% of the 82,954 species of animals and plants that International Conservation Union for Nature Conservation (IUCN) evaluated were in danger of extinction[6]. According to the Millennium Ecosystem Assessment (MA) published by the United Nations in 2005, humanity alone has accelerated the speed of this extinction 1,000 times faster than what nature of the earth have done so far.

According to the "Global Biodiversity Outlook 4, GBO 4" published by The Secretariat of the Convention on Biological Diversity (SCBD) in October 2014, although "progress was made in achieving almost all the elements of the Aichi Target (see page 6), it is concluded that those progresses were insufficient to achieve the Aichi goal unless urgent and effective actions are taken to mitigate the pressure on biodiversity and prevent its continuing decline". Furthermore, the extent to which "Aichi Goal 4" has been achieved, the goals that have strong relevance to businesses, was said to remain in the level, "some progresses were indeed made, but not fast enough. Unless significant amount of efforts are poured, the target will not be met by the target year".

■Outline of progress toward Aichi Target

	TARGET ELEMENTS	STATUS	COMMENT
TARGET 4	Governments, business and stakeholders at all levels have taken steps to achieve, or have implemented, plans for sustainable production and consumption...		Many plans for sustainable production and consumption are in place, but they are still limited in scale
	... and have kept the impacts of use of natural resources well within safe ecological limits		All measures show an increase in natural resource use

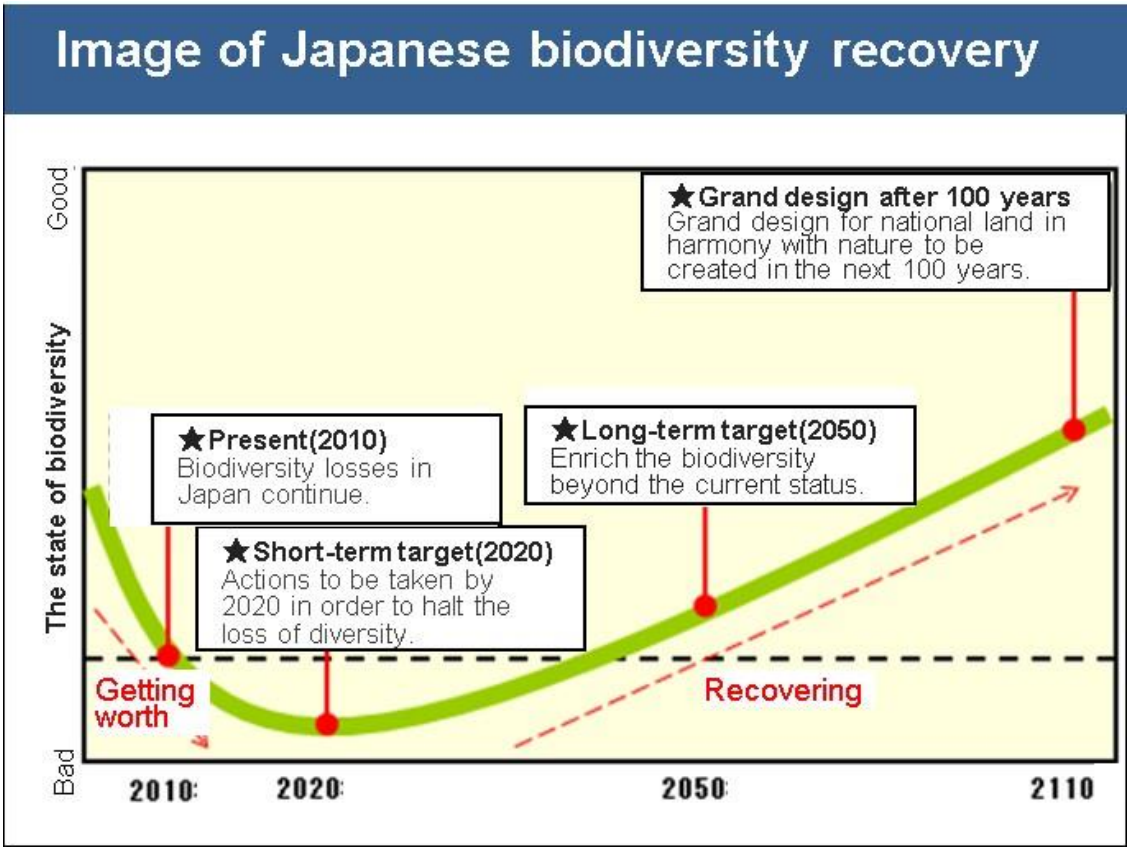
Source: Global biodiversity overview Fourth Edition (GBO 4) Japanese version (2015, Ministry of the Environment)

[5] Global Forest Resources Assessment 2015 (2016, United Nations Food and Agriculture Organization (FAO))
[6] IUCN Red List 2016.2 (2016, International Conservation Union for Nature (IUCN))

2. Crisis of Biodiversity in Japan

According to "Biodiversity and ecosystem services comprehensive evaluation report (Japan Biodiversity Outlook 2, JBO 2)" released by the Ministry of the Environment in March 2016, "the outlook of hasn't changed much since 2010 when the ministry made the last report. Ther state of biodiversity still appears worsening in the long term". Behind this detarioration, there exist the elements of "the first crisis (development /alteration, direct use, and water pollution)", "the second crisis (reduced size of use and management of satoyama, the community forest)", "third crisis (exotic species, and chemical substances) ", and" the fourth crisis (climate change occurring on a global scale)". Efforts are required in the each industry sectors in order to stop and restore the crisis of biodiversity.

■Image of Japanese biodiversity recovery



Source: The National Biodiversity Strategy 2012-2020 (2012, Ministry of the Environment)

1. Adoption of the Strategic Plan for 2011-2020 and Aichi Targets

In the strategic plan 2011-2020 adopted at CBD - COP 10 (the 10th Conference of the Parties to the Convention on Biological Diversity) held in Nagoya, Aichi Prefecture in October 2010, a long-term goal based on Japan's proposal was adopted; realizing the world where people are "living in harmony with nature" by 2050. As a short-term goal "take effective and urgent action to halt the loss of biodiversity by 2020" was adopted. In addition, 20 individual targets (Aichi Targets) shown in the table below were set as concrete action targets for achieving those goals.

The ten-year timeframe from 2011 to 2020, the period for short-term target, corresponds with the "United Nations Decade on Biodiversity" decided by the United Nations. In order to contribute to achieving the Aichi Targets, all sectors of the international community are required to work together and tackle biodiversity issues.

■Aichi Targets (20 individual targets)

Target 1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
Target 2	Biodiversity values have been integrated into national and local development and are being incorporated into national accounting, as appropriate, and reporting systems.
Target 3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed and positive incentives are developed and applied.
Target 4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption.
Target 5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
Target 6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably.
Target 7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
Target 8	Pollution has been brought to levels that are not detrimental to ecosystem function and biodiversity.
Target 9	Invasive alien species are controlled and eradicated
Target 10	Minimize adverse effects on vulnerable ecosystems affected by climate change and ocean acidification, such as coral reefs
Target 11	At least17% of terrestrial and inland water areas and 10% of coastal and marine areas are conserved through systems of pretected areas and other effective area-based conservation measures.
Target 12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained
Target 13	The genetic diversity of cultivated plants and farmed and domesticated animals is maintained and genetic erosion is minimized.
Target 14	Ecosystems that provide essential services are restored and safeguarded.
Target 15	Contribute to mitigation and adaptation of climate change through restoration of at least 15 per cent of degraded ecosystems

Target 16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational.
Target 17	Each Party has developed, adopted, and has commenced an effective and participatory national biodiversity strategy and action plan.
Target 18	Traditional knowledge is respected and mainstreamed.
Target 19	Knowledge, the science base and technologies relating to biodiversity are improved.
Target 20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources should increase substantially from the current levels.

Source: Ministry of the Environment website（https://www.biodic.go.jp/biodiversity/about/aichi_targets/index_02.html）

2. Adoption of Sustainable Development Goals (SDGs)

In September 2015, all the member states of the United Nations (193 countries) adopted the "2030 Agenda for Sustainable Development" which aims to eliminate extreme poverty, inequality and injustice over the next 15 years and to protect our planet in order to bring about a better future. The agenda uphold "Sustainable Development Goals (SDGs)", which consist of 17 targets and 169 targets.

SDGs can be interpreted as a larger framework that encompasses issues concerning the conservation and sustainable use of biodiversity and is complementary to the Aichi Target. Targets 14 and 15 to deal with ocean and land biodiversity are particularly relevant. Especially among targets whose contents are consistent with the Aichi Target, the target year is also set to 2020[7]. Since biodiversity and ecosystems are the foundation of society and the economy and its conservation is closely inseparable from achieving a sustainable society, achievement of the Aichi Target can be said to lead to the achievement of SDGs. For this reason, in domestic and overseas companies, movements are being taken to capture social issues indicated by SDGs as business opportunities and to incorporate them into management strategies.

■Sustainable Development Goals (SDGs)

Source: United Nations Publicity Center（http://www.unic.or.jp/）

3. Expansion of ESG Investment

ESG investment is an investment that selectively focuses on companies that consider the environment (Environment), society (Social), corporate governance (Governance) important. It also makes activities to control carbon dioxide emissions, employee labor management, independence of

[7] For example, Aichi Target 2 (by the year 2020, the value of biodiversity is integrated into strategies and planning processes for national and regional development and poverty reduction, and if appropriate incorporated into the national account and reporting system) And the target of SDGs 15.9 (By 2020, incorporate the value of ecosystems and biodiversity into national and local planning, development process and strategy and accounting for poverty reduction (foreign affairs Ministry of provisional translation).

outside board of directors that are unknown in the financial statements as investment judgment materials. Based on the idea that being responsive to these ESG fields leads to a long-term growth of corporation and to realization of a sustainable society as a result, the ESG attracts attention and viewed as a new evaluation criterion to measure the investment value of a company.

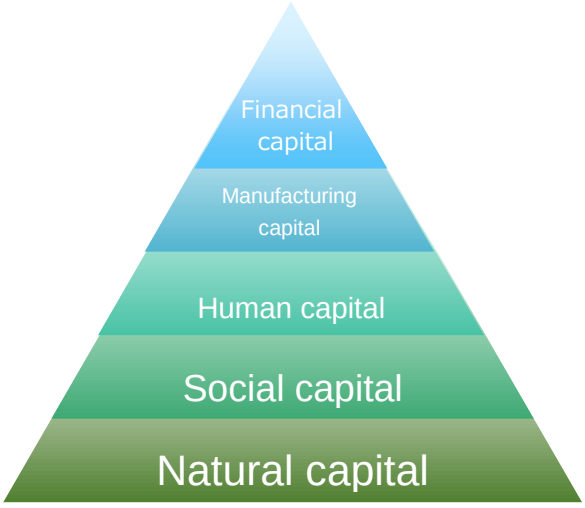
Internationally, ESG investments are increasing after The United Nations Principle for Responsible Investment[8] has adopted, mandating to disclose ESG information in the EU directive and the Sustainable Stock Exchange Initiative (SSEI). ESG investments are rapidly expanding, a growth of 116.6% from 2012 to 2014 in the beginning of 2014.

In Japan, investors' attention hightened when Government Pension Investment Fund (GPIF) signed the UN PRI in 2015. In July 2017, it was announced that GPIF will begin the operation of Japanese shares linked to the ESG index on a scale of 1 trillion yen.

4. Attention to Natural Capital

The idea of "natural capital" that captures the natural environment as one of the important capital that supports the lives of the people and the business foundation of the company is gaining attention. Natural capital is defined as the natural element that directly or indirectly produces value and benefit to mankind, including processes and functions of ecosystems, species, freshwater, land, minerals, air, oceans and nature [9]. It Is also regarded as "what consists of ecosystems and abiotic assets existing on the earth that provide forests, sunlight, water, fossil fuels, minerals, etc. to makind"[10] and is thus defined as human capital and the foundation of social capital.

■Position of natural capital



Source: part of Response Ability Co., Ltd.'s material

Going along with the hightened expectation for corporates to make an interation report[11] or to comply with CDP in recent years, increasing number of corporations, mainly global companies proactively address conservation problems, which include evaluation of the impact of their business activities on natural capital, and based on the evalutaion, making effort to reduce the impact through a supply chain management

Pavan Sukhdev, a project leader of TEEB[12] and Professor Johan Rockström, an environmental scholar, developd the following figure to facilitate a clear understanding of the relations between 17 goals of SDGs mentioned above and natural capital. The hierarchical figure describes that natural capital is a necessary condition for the economy and society to be sustainable, which means that conservation of natural capital supports achievement of other goals. The Management of private enterprises that takes consideration ofnatural capital as well as conservation of biodiversity lays a foundation to build a sustainable society.

[8] Principles for Responsible Investment (PRI) is a voluntary investment principle created by the Secretary-General's invitation, including issues such as environmental problems, social problems and corporate governance issues in the decision-making process of institutional investors.
[9] UK Natural Capital Committee Material (Natural Capital Committee 2014: 5)
[10] EU reference document on Natural Capital Accounting 2015
[11] "Integration report" is a report that integrates non-financial information such as governance and environmental, social consideration, in addition to financial information. For details, see Reference p.93.
[12] "TEEB" is an abbreviation for "The Economics of Ecosystem and Biodiversity" that aims to economically evaluate ecosystem services and use it to recognize the importance of nature.

■SDGs' "wedding cake"

SDGs "wedding cake" illustration presented by Johan Rockström and Pavan Sukhdev. The capitals (written in italic type) added by InterRisk Research & Consulting with their permission.

Source: Material provided from InterRisk Research & Consulting, Inc.

5. Revision of ISO14001（Revised in 2015）

The term "biodiversity" first appeared in the text in the revision of ISO 14001 in 2015, and attention to ecosystems and biodiversity was required for environmental consideration based on the Environmental Management System (EMS). For example, ISO 14001 requires that the top management decide on environmental policies, but in 2015, in addition to traditional "prevention of pollution", three measures, "utilization of sustainable resources", "Adaptation to climate change", "biodiversity and protection of ecosystem" (note to "5.2 Environmental Policy" standard) were added.

Therefore, when shifting your company's EMS to the 2015 version, it is important that you include these three items in your environmental policy.

6. Other Domestic Tendency

(1)Keidanren- Keidanren Committee on Nature Conservation

Keidanren established the Keidanren Committee on Nature Conservation in 1992 and is developing various biodiversity conservation activities including domestic and overseas projects made through its funds. In particular, in 2009, in order to promote voluntary corporate activities, they published the "Keidanren Biodiversity Declaration" and "Keidanren Biodiversity Declaration of Conduct Guidelines and Instructions". Since then, Keidanren continued to provide various forms of enlightning activities to enterprises.

＜Keidanren biodiversity declaration＞

1. Appreciate the grace of nature and aim for harmony between natural circulation and business activities
2. Act with a global perspective on crisis of life diversity
3. Engage in voluntary and steady activities to contribute to diversity of life
4. Promote recycling-oriented management
5. Aim to create industries, livelihoods, and codifications that learn about biodiversity
6. Strive to cooperate with and cooperate with domestic and overseasaffiliated organizations
7. Actively take the initiatives to create a society that fosters life diversity

（URL：http://www.keidanren.or.jp/）

(2) Japan Business and Biodiversity Partnership

This is an initiative voluntarily established by the business community in 2010 in an attempt to engourage business entities to get more involved in the biodiversity related activities. This initiative is consisted of business entities who agree with the objectives of "Japan Business and Biodiversity Partnership Action Policy", who intend to conduct activities according to the items specified in the Action Guidelines (more than one item), economic organizations intending to support such business entities 's activities, NGOs, researchers, and central and local governments. As of March 2017, 504 organizations have participated in the initiative.

生物多様性民間参画
パートナーシップ

（URL：http://www.bd-partner.org/）

(3) The Japan Committee for United Nations Decade on Biodiversity(UNDB-J)

In September 2011, the "The Japan Committee for United Nations Decade on Biodiversity" (UNDB-J) was established. Its aim is to promote the participation and cooperation of all domestic sectors in the activities relating to conservation and sustainable use of biodiversity. In October 2016, UNDB-J created a roadmap for strengthening conservation efforts towards 2020, the deadline for achieveing Aichi Targets and working toward ideal society they envisage.

2011 2020

（URL：https://undb.jp/）

(4) Japan Business Initiative for Biodiversity (JBIB)

"Japan Business Initiative for Biodiversity" (JBIB) was established in April 2008 by the companies who were highly motivated to act on the conservation and sustainable use of biodiversity. The JBIB aims to promote research and practice on the issue of 'companies and biodiversity', and facilitate communication, corporation and information excnages among stakeholders both domestic and overseas. The various activities waged by JBIB members include creation and publication of guidelines concerning sustainable land use, water management, raw material procurement.

JBIB
企業と生物多様性
イニシアティブ

（URL：http://jbib.org/）

(5) Activities by Business Entities Organizations

In Japan there is a business operates organization (and industry association) that coordinates matters relating to business operatoreions in each industry sector. Japanese business entities maintain generally close tie with each other within a sector, and once a policy and an action plan are set by a business organization, most business entities sincerely pursue those measures. Consequently, those business organizations are deemed to play an important role when promoting business entities' activities for conservation of biodiversity and sustainable use of natural capital.

The activities that have been already pursued by business organizations were listed in the chart below. The Ministry of the Environment has also developd and released "Instruction to conserve biodiversity and to guide business for sustainable use (Draft) "(2016, Nature Conservation Bureau, Ministry of the Environment) in order to support the activities of business organizations.

■Examples of activities by business entities organizations

Japan Federation of Construction Contractors	In the 5th edition of the Voluntary Action Plan for the Construction Industry, a new chapter on "Nature symbiosis society" was established to promote the development of technologies and methods considering conservation of biodiversity, conservation and sustainable use of biodiversity in construction work We aimed to promote activity that takes into consideration.
Japan Pharmaceutical Manufacturers Association (JPMA).	In order to raise awareness in the pharmaceutical industry as a whole, we formulated and announced "basic philosophy and action guidelines on biodiversity" in 2012. We also conduct questionnaires to companies participating in the environmental safety committee and feed back information.
Japan Paper Association	Established a committee consisting of member companies focusing on members of the raw material department planning and steering committee of Japan Paper Association and formulated the "biodiversity Conservation Conduct Guidelines" to show the posture of conserving biodiversity in the industry as a whole in 2014.
Four Electric and Electronic Industry Association [13] Biodiversity Working Group （WG）	The relevance of business and biodiversity and the relevance of business and Aichi Target are organized and issues of activity examples such as capacity building for member companies through seminars etc and publication of popularization awareness tool "Let's study biodiversity" Development and other activities that are actively developing. In 2014, we created industry biodiversity action guidelines.
Japan Prefabricated Construction Suppliers and Manufacturers Association	Japan Prefabricated Construction Suppliers and Manufacturers Association of the General Association pomote use of timber considering conservation of forest ecosystems, greening of residential areas considering conservation of local ecosystems and business activities considering conservation of ecosystems. And in "Eco Action 2020"(revised edition, 2016), the Association publisched "Declaration on Sustainable Timber Procurement" (Japan Prefabricated Construction Suppliers and Manufacturers Association, Housing Subcommittee / Environment Subcommittee (September 2016)).

[13] The Four Electric and Electronic Groups are JEMA (The Japan Electrical Manufacturers' Association/JEMA), JEITA (Japan Electronics and Information Technology Industries Association), CIAJ (Information and Telecommunications Network Industry Association of Japan), JBMIA (Information System Industries Association)

(6) Activities by business entities

To promote biodiversity toward the achievement of "Aichi Targets", Keidanren and Japan Business and Biodiversity Partnership conducted a questionnaire survey [14]in 2016 to grasp the perceptions and activities of companies.

As a result, more than 70% companies survied answered that they were either addressing or planning to address seven principles stipulated in the "Keidanren Biodiversity Declaration". More than half companies have developd a declarations on biodiversity, action plans, and guidelines. Also they have incorporated those into their business activities, and developd related technologies.

However, nearly 60% of respondents said that they found it difficult to set, quantify and economically evaluate targets. They regard this problem as an inhibiting factor to promote biodiversity. Many also pointed out that "it is hard to link those activities with the business interest", or "relevance to our business is low". Since the relationship and the way of engagement with biodiversity are different for each industry and company, it is necessary to understand how biodiversity relates to their own business activities, and take a long-term approache to improve the overall corporate value.

In addition, in the questionnaire survey carried out by the Ministry of the Environment in 2013[15)] business entities with larger number of employees tend to respond that they are "implementing measures on biodiversity". A future problem to tackle seems to be encouraging small scale enterprises to promote their engagement in the conservation activities.

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[14] "Questionnaire on Biodiversity - Survey on Relationship Between Nature's Blessing and Business Activities" (2016, Keidanren etc): For Keidanren member companies (about 1,300 companies) and biodiversity private sector partnership members (about 400 companies). The number of valid responses was 238 companies, the collection rate was 17%. For details, refer to the Keidanren website (http://www.keidanren.or.jp/policy/2017/015.html)

[15] "Survey on the activities of business operators in the field of biodiversity" (2013, Ministry of the Environment): nationwide business of over 500 employees (more than 50 people for agriculture, forestry, fishery industry, mining / crushing industry, gravel sampling industry). For targeting people, the number of valid responses was 2,601 companies and the collection rate was 40.5%.

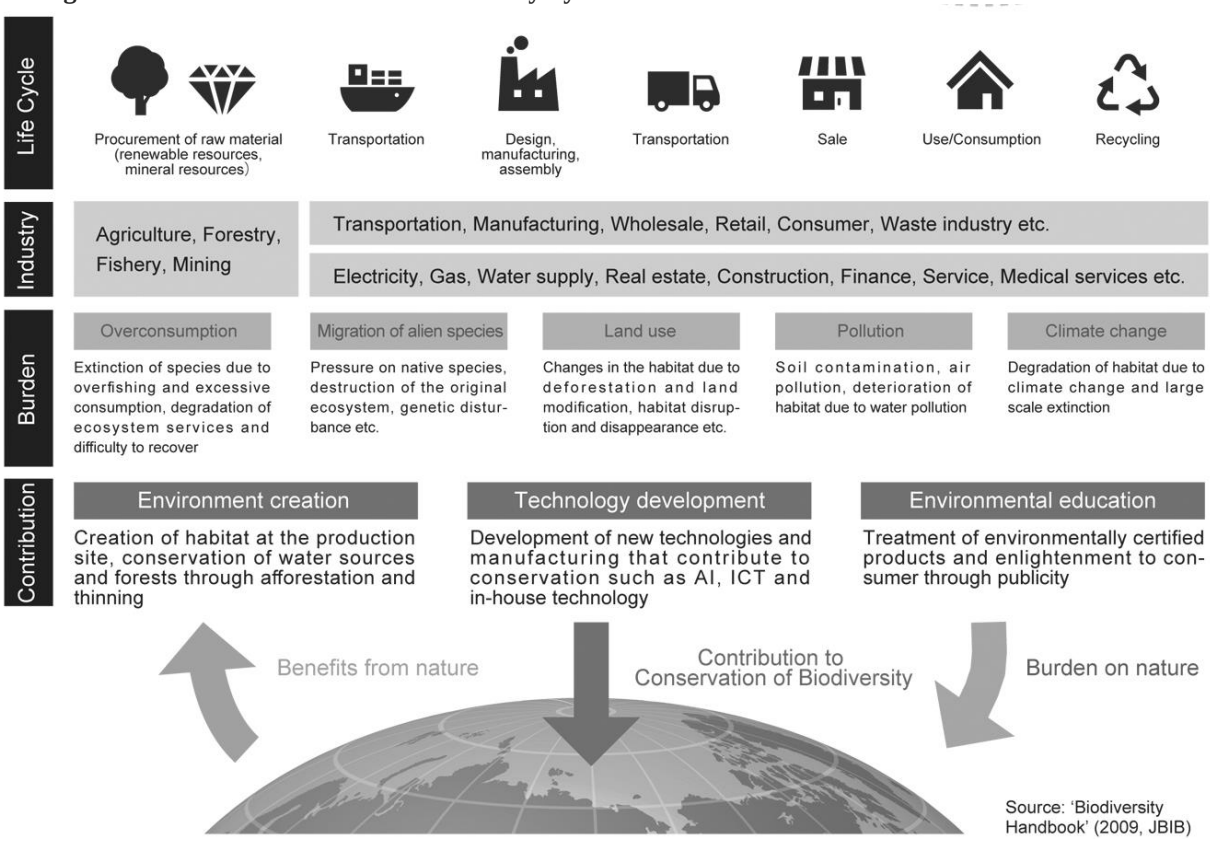
Chapter 3 Interelarionship between Business Acivities and Biodiversity
- Why do we address conservation and sustainable use of biodiversity? -

1. Necessity of Conservation and Sustainable Use of Biodiversity

(1) Link between business activities and biodiversity

We benefit from ecosystem based on biodiversity. We also influence the ecosystem. For example, the following figure is a schematic diagram of the benefit we receive from and impact we make to ecosystem. The image is organized from the viewpoint of business entities.

■ **Image of load and contribution to biodiversity by business activities**



Source: Partial revision with reference to "biodiversity handbook" (2009, JBIB)

Biodiversity is not just related to the supply of substances. Wherever we do business activities, we may affect biodiversity in the process of constructing and using land.

Furthermore, genetic resources biodiversity brings are useful for development of medicines and breed improvement. In addition, we may be able to advance innovation through biomimicry (biomimetic) that mimics the form and function of nature and gets hints from it. Also, we may conduct business such as ecotourism using natural resources based on biodiversity.

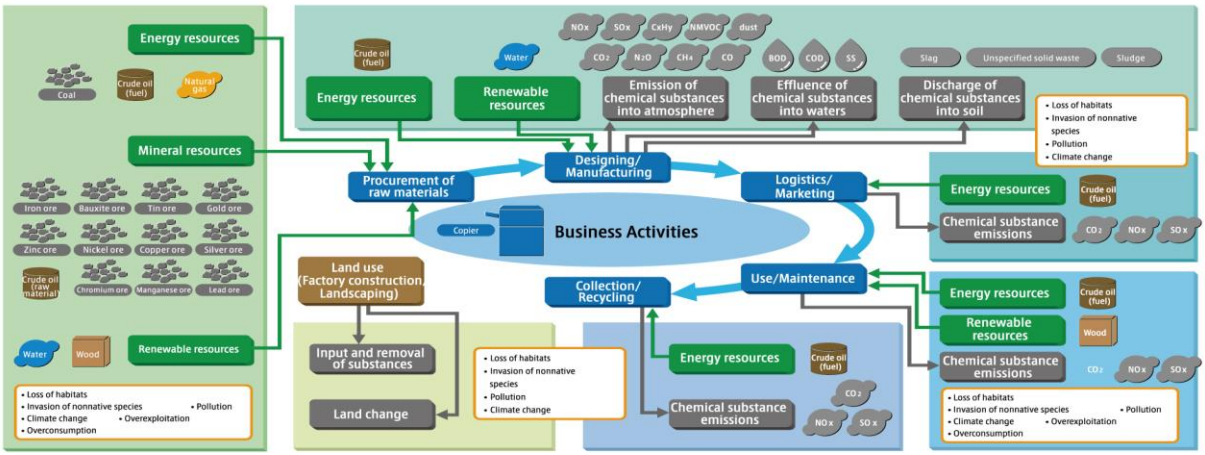
On the other hand, it is also important to recognize that business activities and products contribute to conservation of biodiversity. It is possible that the technologies of business and the products/services produced by business activities will have an innovative and favorable impact on the conservation of biodiversity. In addition, we may be able to get involved in biodiversity-based ecosystems through investments and loans to these activities, or through other social contribution activities.

(2) Involvement in biodiversity through supply chain[16]

The following diagram is developed as a tool used to understand the relationship between business and biodiversity. This examplified the case in which, though a company or an enterprise does not use biological resources directly, they get to find a contact point to biodiversity once they trace back to their deals with procurement of raw materials. The diagram clearly shows that many business actibities rely on ecosystem based on biodiversity in various scenes and stages of those business activities, and that the business activities also make great impact on the biodiversity in various scenes and stages of their activities.

This interdependency goes beyond a domestic domain, however. In the case of resource poor Japan in particular, we rely on overseas ecosystem services to procure raw materials. We should acknowledge thoroughly that we cannot make the life and business activities we enjoy possible unless we import natural resources overseas.

■ **Business and Biodiversity Interrelationship Map**



Source: JBIB website（http://jbib.org/english/business-biodiversity）

(3) Expectations for business entities in CBD-COP

In order to achieve the goal of Aichi Target 4 "to implement a plan for sustainable production and consumption" by all stakeholders, it is necessary to grasp the influence of business activities on biodiversity and at the same time to preserve biodiversity through business activities. It is important to tackle sustainable use and further, promoion of cooperation among business entities shoud be encouraged.

For example, in CBD - COP 12 held in 2014, in resolution XII/ 10, "participation of business entities", many business entities were noted that they were unaware of the importance and benefits they get from biodiversity, merit they receive from valuing biodiversity and ecosystem services in their business models and supply chains. In addition to these points, following activities are encouraged for business entities.

· Analyze the impact on biodiversity and ecosystem services in business decision-making and implementation
· To prepare an action plan to integrate biodiversity into the business
· Incorporate activities on biodiversity and ecosystem services into the reporting framework
· Behavior by business entities including supply chain is to consider the purpose of the CBD strategic plan and Aichi Target
· To strengthen capacities in nurturing human resources and in the supply chain
· To include consideration on biodiversity in procurement policy
· Actively engage in the resource mobilization strategy of the CBD

The CBD - COP 13 held in 2016 discussed the main themes of conserving biodiversity and integrating sustainable use into various sectors in agriculture, forestry and fisheries and tourism to achieve the Aichi Targets. It also mentioned sustainable production and consumption to be

[16] Supply chain: It refers to the connection between all processes in supply activities (procurement, development, settlement, transportation, storage, sale) from the procurement of raw materials at business operators to delivery to final consumers. Supply chain management is a generic term for business management methods aimed at optimizing such supply chains as a process and improving added value of products and services.

achieved across the value chain. Furthermore, in the business forum held prior to CBD - COP 13, "Cancun · company and bioiversity pledge" (Cancun Business and Biodiversity Pledge) was created by the CBD Secretariat. This pledge expresses that business leaders appeal to biodiversity and the importance of ecosystem services to both inside and outside of the company and contributes to the conservation of biodiversity. More than 100 companies have already signed this pledge.

These activities not only contribute to the achievement of the Aichi Targets, but also lead to the resolution of other social issues such as an International framework of the SDGs and Paris agreements, and are recognized as one of the responsibilities that business entities should fulfill.

2. Risks and Chances that may Occur to Business Entities

Through engaging actively in conservation and sustainable use of biodiversity, business entities can avoid and reduce short- and long-term risks and gain opportunities. The following table shows examples of risks when business entities do not tackle the conservation and sustainable use of biodiversity and the opportunities that can be gained from activities.

■Examples of risks and chances in business activities

Section	Risk	Chance
Operation related	• Lack of raw materials, increased raw material procurement costs, decreased production volume / productivity, disruption of operations due to decreased biological resources	• Construction of a production process that is less susceptible to reduction of biological resources, which results from sustainable use and reduction in usage of biological resources • Strengthening the supply chain by promoting supplier activities
Regulation/ Law related	• Payment of fines, suspension or rejection of permission or license, litigation due to violation of laws and regulations related to biodiversity • Reduction in biological resource allocation, generation of usage fee	• Acquire formal permission to expand operations by considering biodiversity • Development and sales of new products that conform with new regulations on biodiversity
Popularity related	• Decline of brand image due to the apparent adverse effects on biodiversity	• Improvement of brand image by expressing consideration to biodiversity, appeal to consumers and differentiation from other companies in the same industry • Promotion of stakeholders' understanding and reinforcement of relationship with them by considering biodiversity
Market/ production related	• Reduction of customers by promoting green procurement in the public sector and the private sector • Decline of market competitiveness of products/services due to poor biodiversity quality	• Development of markets for new products, services, certified products that take into account biodiversity • Development of new technologies and products to promote conservation and sustainable use of biodiversity
Finance related	• The possibility that lending can not be accepted due to stricter lending conditions of financial institutions	• Appeal to investors who place emphasis on investment in ESG which leads to expanding investment
Internal affair related	• Decrease in employee satisfaction due to deterioration of corporate image	• Improvement of employee satisfaction

As you can see from a opportunity side, business entities can gain huge merit if they tackle conservation and sustainable use of biodiversity, especially with regard to a strategic management.

Next, we will introduce examples of achieving results through concrete activities.

Case① 【Stork Natural Rice】

● Information	Implementing entity	JA Tajima, Hyogo Prefecture, Toyooka City, Yabu City, Asago City, Kami Town, Shinonsen Town
	Business contents	Environment creative agriculture
	Number of regular members	25,307 (as of March 31, 2017)

●Content of activity: Stork-Friendly Farming Method

JA Tajima in Tajima region in Hyogo prefecture adopts a cultivation method named “Stork-Friendly Farming Method” with the aim of restoring storks to wild. The method is defined as the one which contributes to enrichment of regions, environment and culture through cultivating rice in a natural environment where various living creatures including storks live.

To be specific, using no pesticides or reducing them by more than 75% during cultivation periods; using organic fertilizers instead of chemical ones; sterilizing non-disinfected seeds with hot water; managing deep water with the aim of weeding effect and creation of habitat for living things; introducing winter-flooded rice paddies or early flooding in order to raise more creatures in the rice fields.

As a result, rice has acquired added value such as safety and security and become to be widely known as branded rice. Besides, the profitability of farmers has improved: 1.57 times by non-pesticide and 1.31 times by reduced-pesticide, compared to the normal practice.

Source: JA Tajima website (http://www.ja-tajima.or.jp/), White Paper on Environment (2017), Publications from Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries

Case② 【Improvement of Real Estate Value】

● Information	Company name	Development Bank of Japan Inc..
	Business contents	Financial services
	Number of employees	1,192 (as of the end of March 2017)

●Content of activity: DBJ Green Building Certification

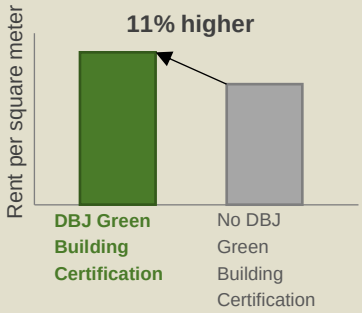
DBJ Green Building Certification Program was launched by DBJ in April, 2011 for the purpose of supporting the properties which give proper care to environment and society (Green Building).

The program evaluates, certifies and supports properties which are required by society and economy. It makes comprehensive assessment of properties, while evaluating various factors which range from properties’ environmental features to their communication with stakeholders, such as disaster prevention and proper care for surrounding communities. As of the end of June 2017, the number of DBJ Green Building certified properties was 436 and the number of certified business entities was 112.

According to an economic analysis conducted by the Japan Real Estate Institute, GB-certified properties are 11% higher than those that are not.

（Assumptions for analysis）

- ✓ Data to be used : Settlement data of all J-REIT-held properties
- ✓ Date of analysis : The latest closing date available as of June 2016
- ✓ Target area and building use : Offices in Tokyo/Kanagawa/ Chiba/ Saitama
- ✓ Number of samples : 590 (Of which GB certified property is 48)
- ✓ Analytical method: Extended model considering spatial autocorrelation of hedonic model (Excluding the influence of factors other than certification existence (location, size, age, etc.))



(Less than 7,500 square meters of buildings)

Source: the DBJ Green Building website (http://igb.jp/index.html)

Part 2 Basic idea

As one of important bodies involved in biodiversity, business entities are expected not only to comply with laws related to biodiversity, international rules, etc. but to work on conservation and sustainable use of biodiversity as well.

In this part, we will explain the basic principles for the endevours, the viewpoint to be considered, and the procedure to make concrete progress when business entities conduct activities for conservation and sustainable use of biodiversity.

Chapter 1: Fundamental Principles

Basic principle 1 : Expansion of business activities that contribute to avoidance / minimization and conservation of impact on biodiversity

In utilizing biodiversity, it is necessary to take it into consideration that domestic and international biodiversity has been damaged by changes in socioeconomic activities. It is therefore important to avoid or minimize a negative influence business activities might give to biodiversity, and to find a way to make a sustainable use of land and natural resources.

Also, it is highly likely that business activities per se, or the various technologies, products, services, and solutions those business activities engender contribute to the conservation of biodiversity and sustainable use of natural resources. Therefore, business entities should actively engage in those activities.

Basic principle 2 : Preventive measures and adaptive approach[17] based on precautionary principle[18]

Since biodiversity is maintined on a delicate balance, it is extremenly difficult or virtually impossible to recover it once it is damaged. Therefore, we need to obtain scientific knowledge, take preventive measures to conserve biodiversity, continuously monior the state of biodiversity upon a launch of new business operation, evaluate the effectiveness of the measures scientifically and relfect the result to the operation of business flexibly for the conservation of biodiversity and sustainable use of natural resources.

Basic principle 3 : Long term perspective

Biodiversity benefits us continuously and for a long time. The influence given to biodiversity does not appear immediately; because many factors consitute the influence in a complex way, it will take relatively a long time before we notice the consecences. Therefore, in conservation and sustainable use of biodiversity, it is important to preserve and recover ecosystems if damaged in a long-term perspective.

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[17] Adaptive approach: With regard to subjects with uncertainty, considering beforehand that events that may be out of the initial forecast may occur, and implementing monitoring with the object and changing feedback according to the result. Since biodiversity is complex and constantly changing, it is important to act humbly and carefully.

[18] Precautionary Principle: In deciding policies concerning environmental conservation and safety of chemical substances, even if there is no specific damage or there is scientific uncertainty, the influence and damage should be prevented beforehand as precausional measure. Precautionary principle was established by the 15th principle of the Rio Declaration of United Nations Conference on Environment and Development (UNCED) in 1992. Since then, the provisions of international agreements have increased and the principle has been regarded as general principle.

(Reference) Rio Declaration - Fifteenth Principle In order to protect the environment, precautionary measures must be widely applied by each country according to its capabilities. In the event of serious or irreversible damage, the lack of full scientific certainty should not be used as a reason to postpone cost-effective measures to prevent environmental deterioration. (Https://www.env.go.jp/council/21kankyo-k/y210-02/ref_05_1.pdf)

Chapter 2: Viewpoints to Consider

When considering and making steps forward with initiatives and activities, the following viewpoints should be considered by business entities:

☞Viewpoint 1 Activities based on characteristics/ scale of business entities	• Based on the strength of the influence on biodiversity of each business entities, it is desirable to actively promote activities. • It is also important to have a viewpoint to explore the possibility that our own technologies, products and services contribute to conservation of biodiversity.
☞Viewpoint 2 Considering supply chain and value chain	• It is important to have a viewpoint to consider activities that business entities can directly manage, activities that are related to procurement of raw materials, and activities such as usage, disposal and collection of products. • Depending on the length and complexity of the supply chain, business entities who procure raw materials may have a significant impact on biodiversity in terms of domestic and overseas production areas and the life cycle of products and services. It is important that business entities at each stage of the supply chain cooperate in their respective positions and have a viewpoint to tackle conservation and sustainable use of biodiversity. • Furthermore, as a contribution to biodiversity conservation, it is also important to create added value from the viewpoint of the value chain from raw material procurement to disposal.
☞Viewpoint 3 Collaborations with various stakeholders	• In order to promote conservation and sustainable use of domestic and international biodiversity, it is important to seek organic and flexible cooperation with various related stakeholders, not just business entities. In addition, cooperation among different business types may be effective between business entities. In particular, cooperation and collaboration with NGOs / NPOs with deep understanding of regional issues, expertise, and concrete activity experience have been effective in many cases. • Further, it is also important to take stakeholders using biodiversity, such as local communities at operating sites and raw materials procurement sites, into consideration.
☞Viewpoint 4 Integrated approach to the problems	• Business entities take measures against global warming, measure to control the occurrence of waste properly, proper disposal, use of recyclable resources, pollution control measures, green procurement, local contribution activities, protection of human rights, conservation and sustainment of biodiversity. There are cases where they are useful and vice versa. • It is important to advance activities inclusively under the viewpoint that an activity may contribute to issues related to different environmental fields and local issues.
☞Viewpoint 5 Setting goals and progress management	In daily management and short-term goal setting, we will promote initiatives from a forecasting viewpoint that accumulates improvement plans based on achievements and current situation. Long-term goals are determined from the ideal future image, and it is effective to manage progress toward the goal from a backcasting viewpoint.

	• In order to pursue activities on a continuous basis, it is important to have a viewpoint that makes use of such multiple methods complementarily.
☞Viewpoint 6 Social contribution	It is important for business entities to have a viewpoint that they are economic entitiy pursuing profits while being required to contribute to biodiversity as a member of society. • Through donation to existing funds and volunteer activities of staff, it is also possible to contribute to social contribution activities by supporting biodiversity conservation activities conducted by NGOs and others.
☞Viewpoint 7 Dissemination of information	• Since it is expected that conservation and sustainable use of biodiversity will lead to support by consumers and evaluation of investors, it is important to incorporate a mechanism to periodically send out the content of activities and monitoring results. • On the other hand, from the viewpoint of investment and accountability, it is increasingly required to actively disclose non-financial information such as procurement policy of raw materials and management method of company-owned land.

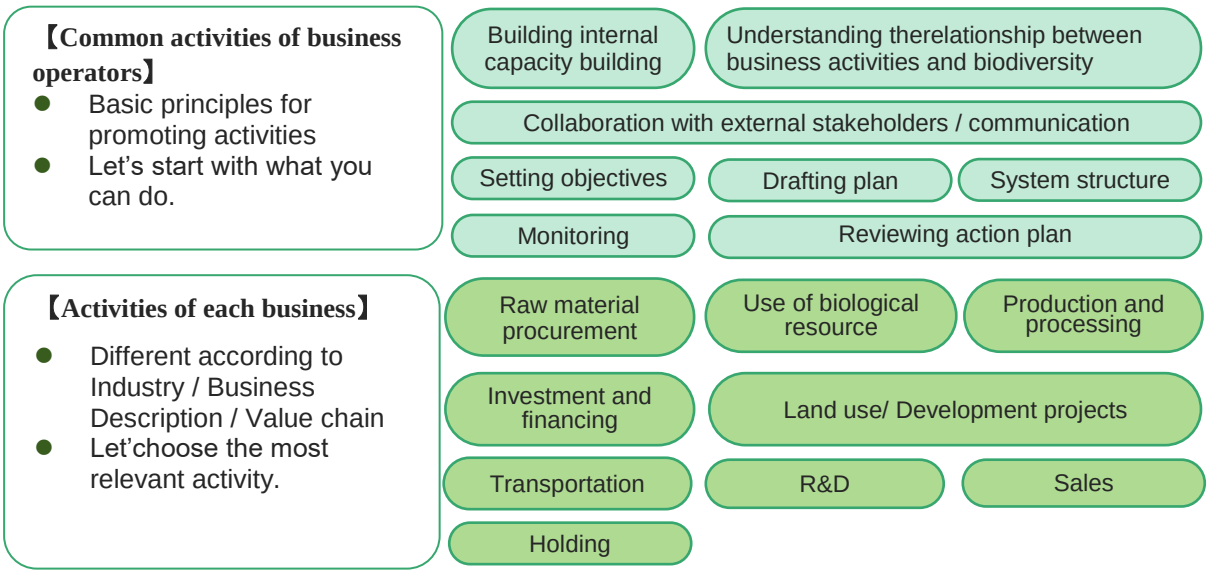
1. Basic point of view about the activities

Activities to conserve biodiversity by business entities can be broadly divided into two types: 1) management issues that are commonly required for all business entities and 2) activities which are required depending on the business proccess and activity of each business operator. Although this division varies according to the size of organization and business contents, in the majority of cases, business entities take management approach as a basis for the promotion of activities specific to each business.

In the Guidelines, we define the actions taken as management approach as "activities common to business entities" and actions taken for each business activity as "activities of each business". We then provide review flows for each of these activities and examples of classification of action items by industry bellow.

In the review flow and classification table on the following pages, the pages that contain specific tips and examples shown in Part 3 and Part 4 are noted. Please visit the pages which draw your attention, or refer to the items which have close relation to your business activities.

■Types of activities



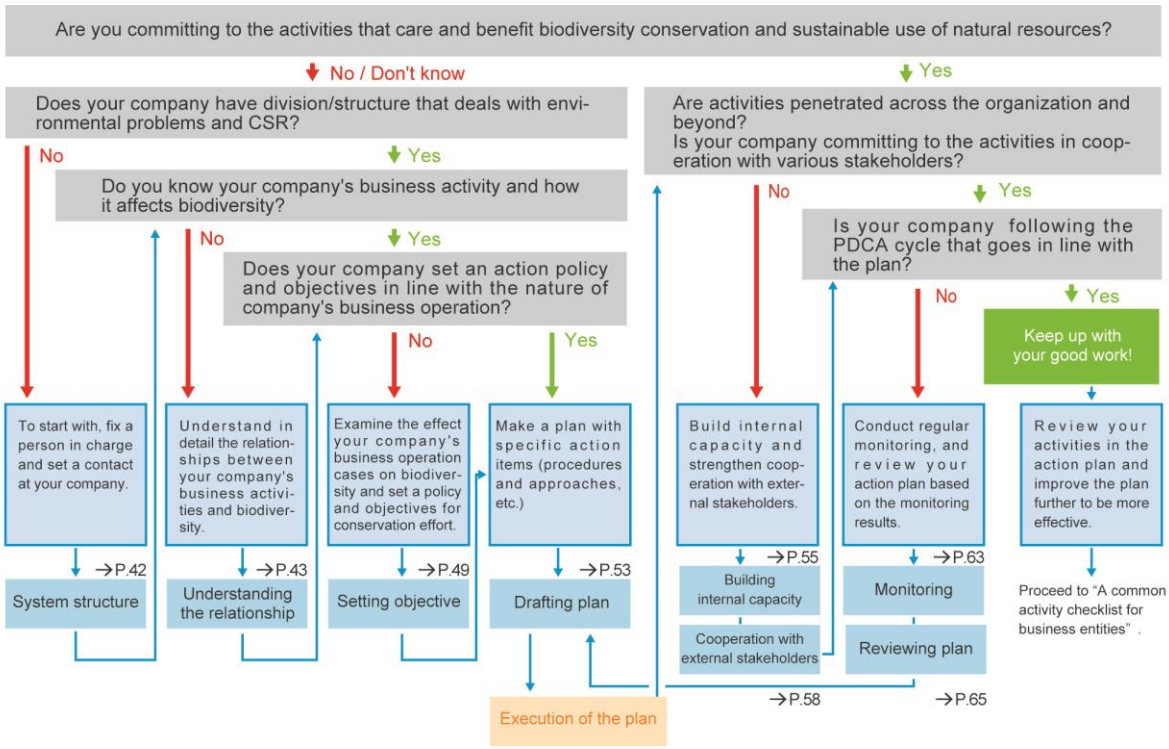
The Keidanren Committee on Nature Conservation and the JBIB provide example cases and tools that you can make use of for starting your activities on their websites.

Keidanren Committee On Nature Conservation	・Declaration of Biodiversity byKeidanren Guide to Action Policy （http://www.keidanren.or.jp/english/policy/2009/026guide.pdf） ・Questionnaire on biodiversity / Examples of activities related to biodiversity <2016 version> （http://www.keidanren.or.jp/policy/2017/015_shiryo1.pdf）
JBIB	・Tips for biodiversity activities （http://jbib.org/activity-jbib/hints/）

2. Common activities of all Business Entities

For those who are about to begin their activities as well as those who have already began your activities, plase use review flow below to examine you're actions. Use the check list as necessary. If there are items that you missed to fulfill, or items that you feel you can take on easily, please refer to the relevant page and make use of the information provided for your future activities.

■Review flow of activities



■ Checklist for the common activities of business entities

☑	Item	Points to understand the implementation status	Reference page
□	①System structure	● Who is responsible for promoting activities？ Has a person or an organization in charge already been decided?	42
□	②Understanding the relationship between business activities and biodiversity	● Do you understand how business activities and their products and services influence the ecosystem (positive or negative direction)? Do you understand what kind of natural capital and ecosystem services your company depends on? (Example: Procuring raw materials of biological origin, using water resources in business activities, etc.)	43
□	③Setting objectives	● Have you set plans, policies and direction for conservation and sustainable use of biodiversity? (Example: minimize the use of unrepairable resources; do not handle illegally harvested resources, etc.)	49
□	④Drafting plan	● Are there any plans and promotion management systems to promote activities on conservation and sustainable use of biodiversity, or to achieve the above policies and goals? ●	53
□	⑤Building internal capacity	● Are you conducting environmental education seminar for employees who are the basis for promoting activities? ●	55
□	⑥Collaboration/ Communication with external stakeholders	● Do you disclose information about your company's activities to external stakeholders? ● Are you promoting activities in cooperation with external stakeholders (local governments, NGOs / NPOs, local residents, etc.)? (* Including social contribution activities and environmental education for local residents)	58
□	⑦Monitoring	● Do you have any system for periodically inspecting your company's activities, such as monitoring?	63
□	⑧Reviewing action plan	● Are you reviewing the plan based on the above monitoring results?	65

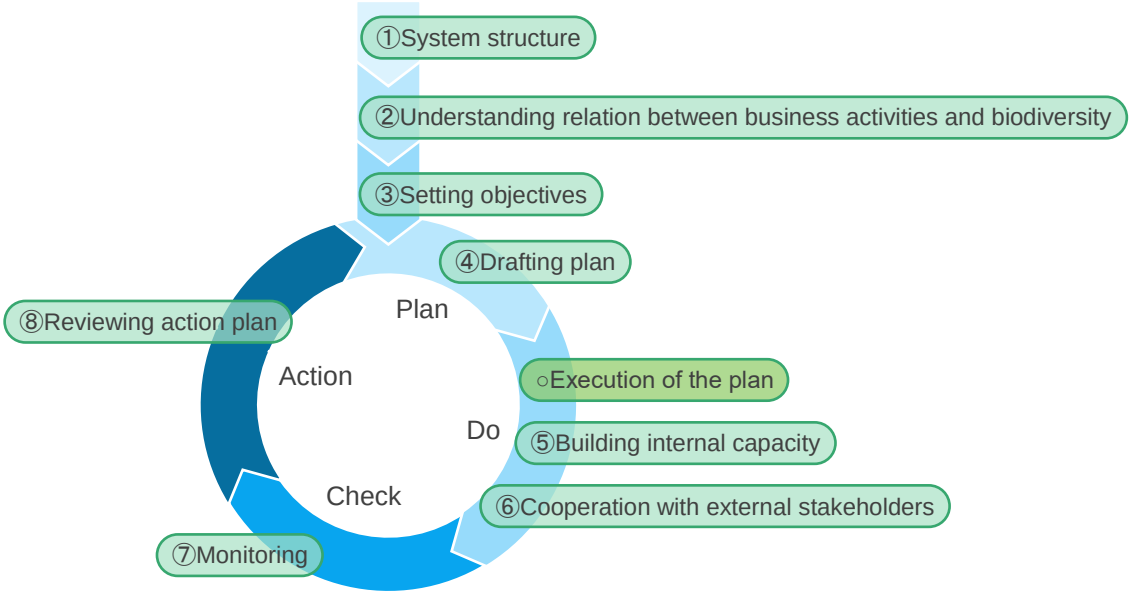
Conducting activities, it is ideal to proceed with the PDCA cycle which includes Plan, Do, Check, and Action from a preventive and adaptive point of view. But it is not necessary to follow all of them. It is adviserble to build up your own flow according to the nature and scale of the business you are engaged in.

See the figure below. This is one example to proceed with your activities based on the PDCA cycle. The way to follow up the cycle may differ depending on the type and scale of the business projects. There should be a case where you want to have a PDCA cycle for each action items in the business activities (for example, one PDCA cycle per department), or where you want to carry out several action items using one PDCA cycle (for example in the entire corporation or business office).

Please refer the action items and cases made by other companies provided in the Guidelines, and start with what seem plausible for you. Another way to commit to conservation of biodiversity could be donating money to a fund or CSR active organizations that tie up with local community to engage in the conservation activities.

When advancing activities, you may want to take an "adaptive management" that takes into account the situation where your plan doesn't procced as it was schemed. Biodiversity is an area that entails uncertanty. Clearly, evaluation based on quantitative indicators (= quantitative evaluation) is an effective measure. Yet, you should no way be obssessed by the measure. You could always go with qualitative target evaluation (= qualitative evaluation). In either case, however, you are expected to have evaluater before proejct starts, clarify the items and criteria of the evaluation to a maximum extent, and, basing on the PDCA cycle, make use of the evaluation result when you review your plan.
When your plan is not progressing well, you are expected to analyse the reason to a feasible extent, reflect the activities you are engaged in with the analysis, and flexibly address the problem and situation.

■ **Image of PDCA cycle**



3. Activities of each Business

About the conservation activities corresponding to the nature of business entities, we considered the economic activities waged in each industry and its association with biodiversity and summarized the action items and their connection with the business by business process and business activity.

Please refer to the table below. You could find the industry clasification your main business operation belongs to. Please refer to the action items in that category, and incorporate the action in your company's conservation plan. You can start from anywhere. Start the activities within your own company and expand the scope of the action step by step to get supply chains involved in the activity.

For business entities who will start activity from now on, please refer to the schematic diagram shown on page 23 and use it to grasp the relationship between their business activities and biodiversity. Since this schematic diagram is organized according to industrial classification (major classification), and also the type of relationships varies even in the same industry, there may be some other relationships that this diagram could not capture. Please be flexible. You do not have to strictly follow the diagram categoreized by industry.

Further please note that in a real world, the manufacturing industry (secondary industry) and service industry (tertiary industry) use the raw materials produced by companies in the primary industry. You should understand that the impact and benefit that these business activities produce may sometimes be closely connected to each other.

■ **Relationship between economic activity by industry and activity per business activities**

Industry (*1)		Relationship between economic activity and biodiversity (*2)	Activity per business activity								
			①Raw material procurement (67)	②Use of biological resources(71)	③Production / processing(75)	④Investment / Financing(78)	⑤Sales(81)	⑥R&D(85)	⑦Transportation(88)	⑧Land Use / Development(90)	⑨Holding management(94)
Primary industry	Agriculture, Forestry	1a. Agriculture (rice cultivation / upland farming), 1b. Agriculture (animal husbandry), 1c. Forestry	○	○	○		○	○	○	○	
	Fishery	2a. Fishery (other than aquaculture), 2b. Fishery (aquaculture)	○	○	○		○	○	○		
Secondary industry	Mining, quarry, gravel-digging industry	3. Mining			○		○	○	○	○	
	Construction industry	4. Construction industry	○	○	○		○	○	○	○	
	Manufacturing industry	5a. Manufacturing industry (electronics and electric machinery), 5b. Manufacturing industry (food and beverage), 5c. Manufacturing industry (pulp and paper)	○	○	○		○	○	○	○	○
Third industry	Electricity, gas, heat supply, water supply industry	6a. Energy industry, 6b. Water industry	○		○		○	○	○	○	○
	Information and communication industry	7. Information and communication industry					○	○	○	○	○
	Transportation industry, postal service	8. Transportation · Postal Service	○				○	○	○	○	○
	Wholesale and Retail	9. Wholesale / Retail	○				○	○	○	○	○
	Finance, insurance	10. Financial/Insurance service				○	○	○		○	○
	Real estate industry, rental business	11a. Real estate business, 11b. Rental business				○	○	○		○	○
	Academic research, specialized / technical service industry	12. Academic research, specialized / educational services, educational learning support	○	○			○	○	○	○	○
	Accommodation food service	13. Accommodation · Food service	○	○			○	○	○		○
	Lifestyle-related service industry, entertainment	14. Living related service industry, 15. Tourism industry	○	○			○	○	○	○	○
	Education, learning support industry	(See 12.)	○	○				○	○	○	○
	Medical care, welfare	16. Medical care, welfare	○	○	○			○	○	○	○
	Composite service industry (post office)	(See 8.)	○				○	○	○	○	○
	Composite service industry (Cooperative association)	(See 1 or 2)	○	○	○		○	○	○	○	
	Service industry	17. Recycling / Waste Disposal Industry	○		○		○	○	○	○	○

Note: "O" in the table indicates that activity for each business activity may apply
Source: * 1: Japan Standard Industry Classification (H 25.10, Ministry of Internal Affairs and Communications)
* 2: The relationship between business activities and biodiversit
(http://www.biodic.go.jp/biodiversity/private_participation/crosslink/index.html)

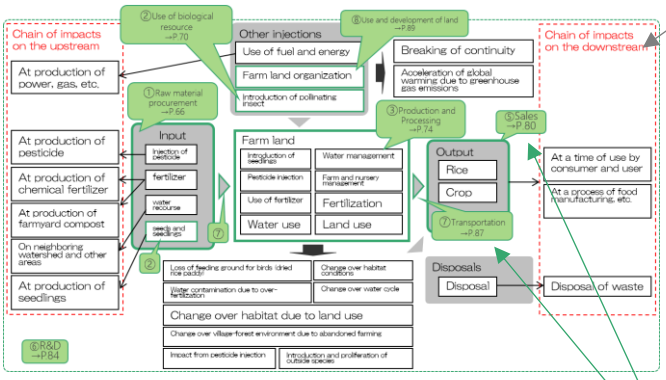
As described in the Basic Principle 1, various activities, business services, products, services and solutions can contribute to the conservation and sustainable use of biodiversity in the activity for each business activity.

Here, we provided examplyfiying cases for you to consider as action items. Below cases are for you to see whether there are action items that you can aggressively pursue and contribute to reduction of environmental overload that your business activities are creating.

○Positive impact example for each business activity

Classification of business activities	Positive impact · Contributing activity (example)
Agriculture, Forestry	・Creation and conservation of habitat at production site (Flooded Farming Method in Winter)
Fishery	・Regeneration of ecosystems expecting indirect effects (afforestation by fishermen)
Mining, quarry, gravel-digging industry	・Biodiversity contribution to conservation (setting of protected area · conversion to biotope)
Construction industry	・Biodiversity restoration technology and product development in urban areas
Manufacturing industry	・Biodiversity product development that contributes to conservation (development of ballast water purification system combining own owned technology)） ・Preservation of water source recharge forest by forest maintenance
Electricity, gas, heat supply, water supply industry	・Prevention of global warming by renewable energy and forest regeneration (woody biomass power generation by thinning wood)
Information and communication industry	・Development of research system utilizing ICT technology (Utilization of voice recognition software)
Transportation industry, postal service	・Enlightenment using in-flight magazines and vehicles (announcement of nature conservation activities / educational activities)
Wholesale and Retail	・Customer education (aggressive sales of certified products) by handling environmental certified products
Finance, insurance	・Providing financial instruments that contribute to biodiversity (loans based on biodiversity ratings)
Real estate industry, rental business	・Landscaping and planting considering conservation of biodiversity ・Raising awareness on environment in green space
Academic research, specialized / technical service industry	・Development of technology which contributes to conservation of biodiversity
Accommodation, food service	・Promotion of local consumption of local products
Lifestyle-related service industry, entertainment	・Ecotourism utilizing natural capital (Eco-tourism promotion organization in various places)
Education, learning support industry	・Support for environmental education for students (enlightenment in information magazines for members)
Medical care, welfare	・Development of vaccine utilizing biological resources and gene resources
Composite service industry	(Post office = "Transport industry" / cooperative association = "agriculture, forestry" "fishery")
Service industry	・Reduction of load on natural resources by recycling

○How to read the schematic diagram

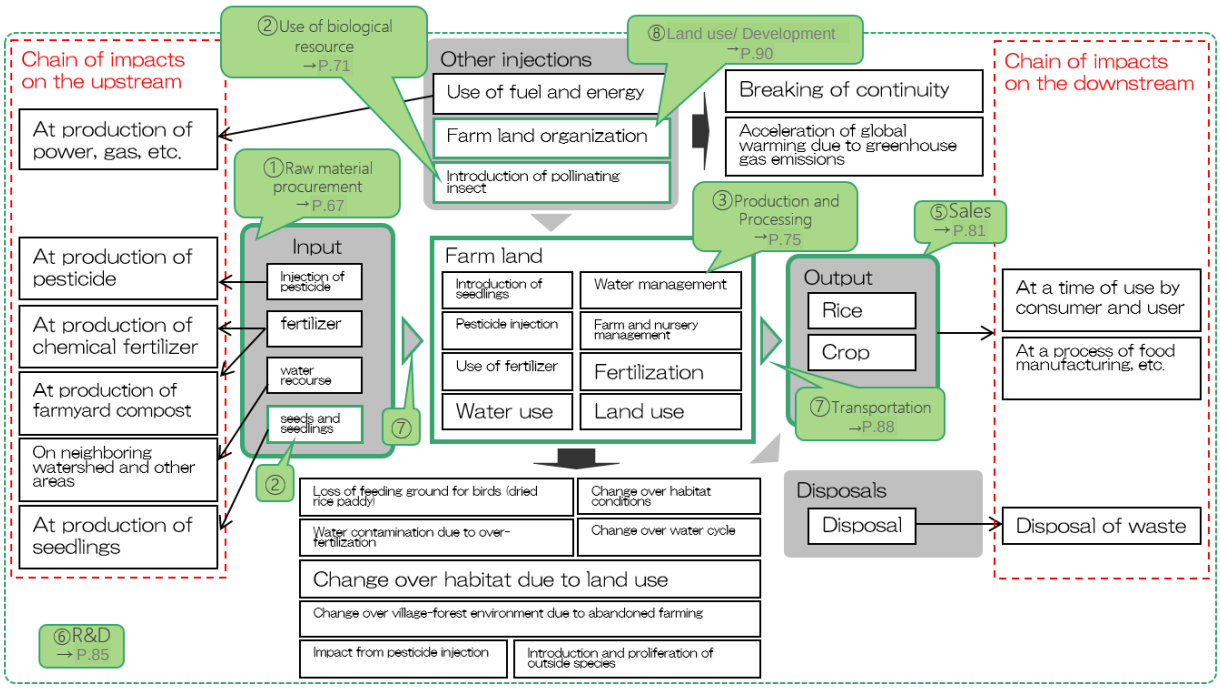


Background diagram exemplifies the impact on biodiversity from input / output in business activities by industry type

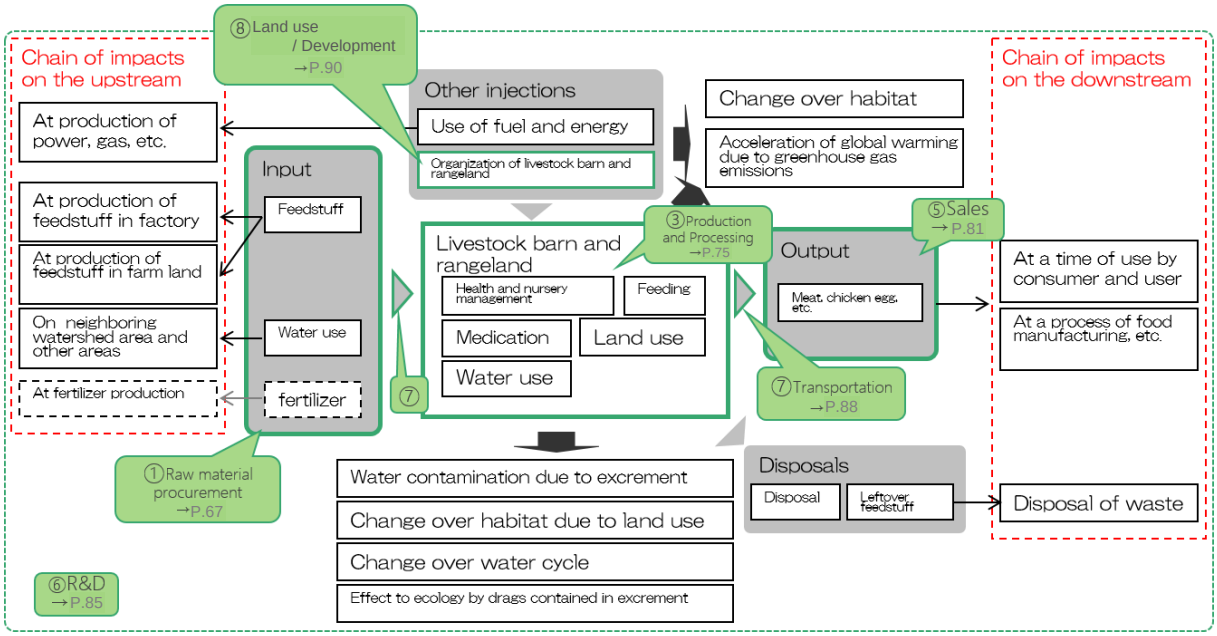
- ✓ Business flow is represented by "▶", and central business activities are located at the center of the figure
- ✓ Place the contents of the impact on the outside of business activities
- ✓ It should be noted that impact (negative influence, contribution) also occurs especially on the upstream side and downstream side of central business activities (red frame)

- ✓ At each stage of business activities, content to be considered is framed by "activity for each business activity"
- ✓ In the balloon, describe the name of "activity for each business activity" and the specific page for introducing tips and examples

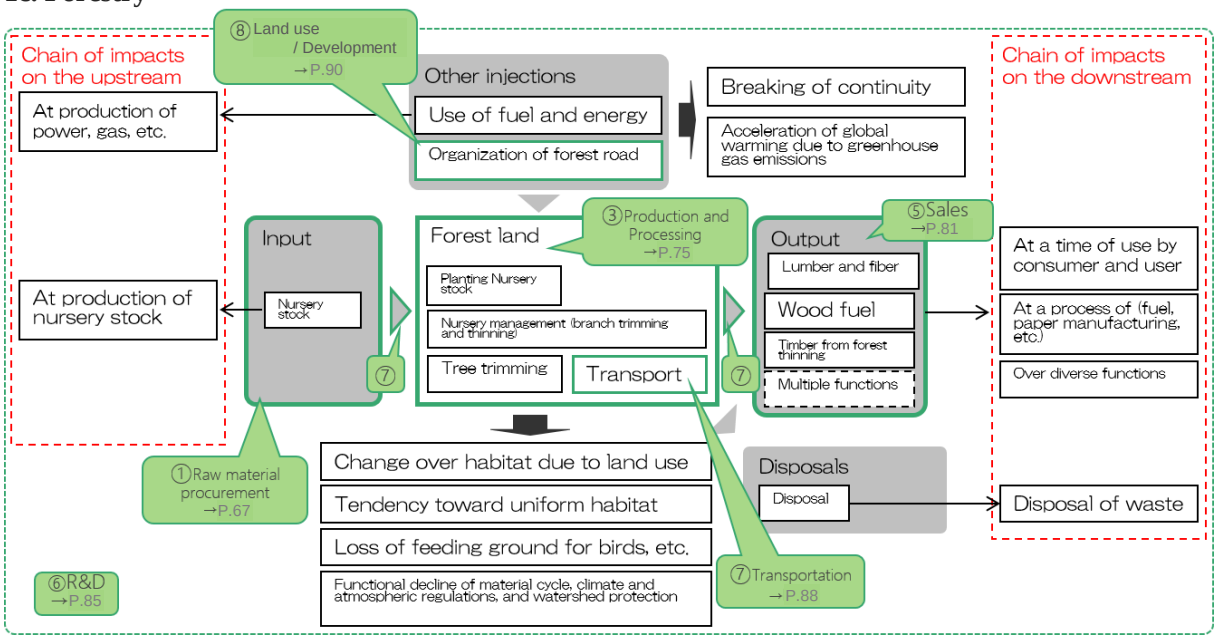
1a. Agriculture (rice cultivation / upland farming)



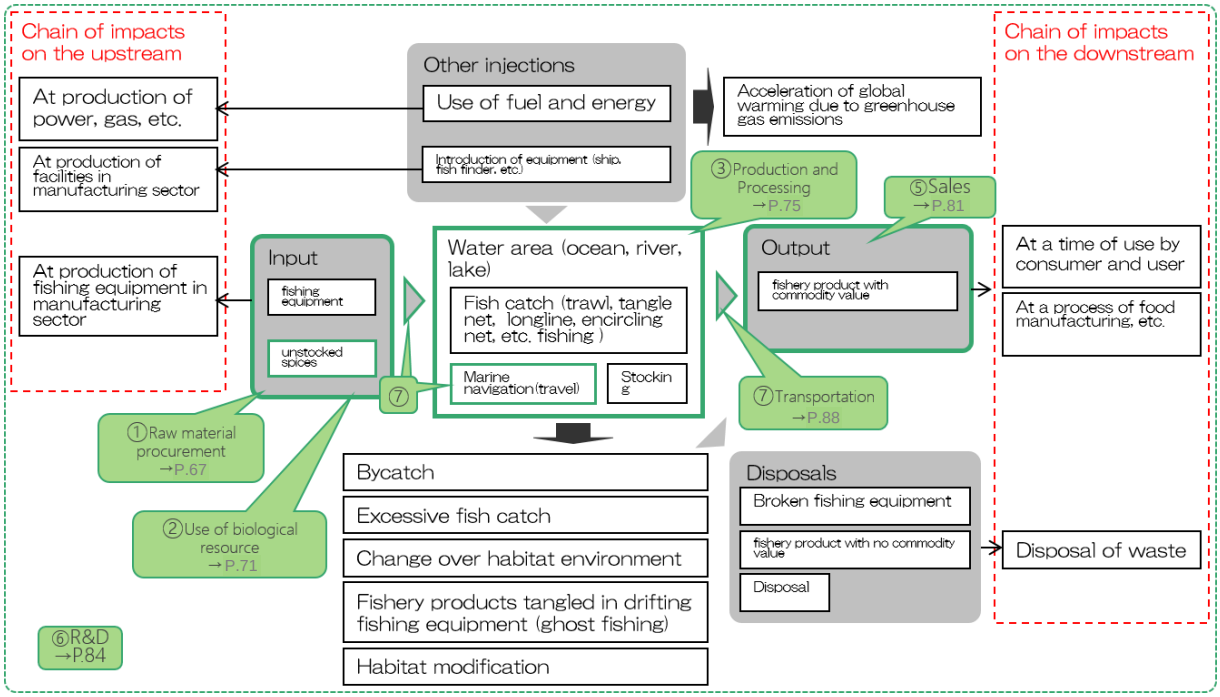
1b. Agriculture (animal husbandry)



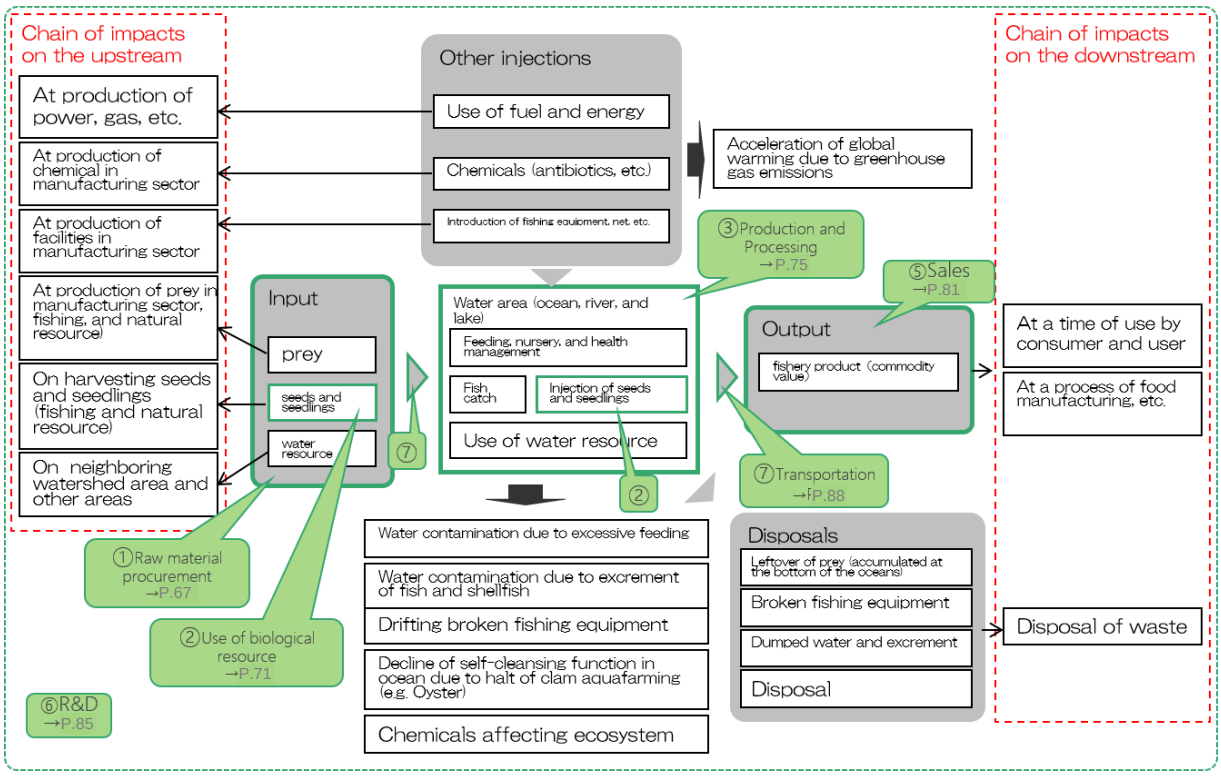
1c. Forestry



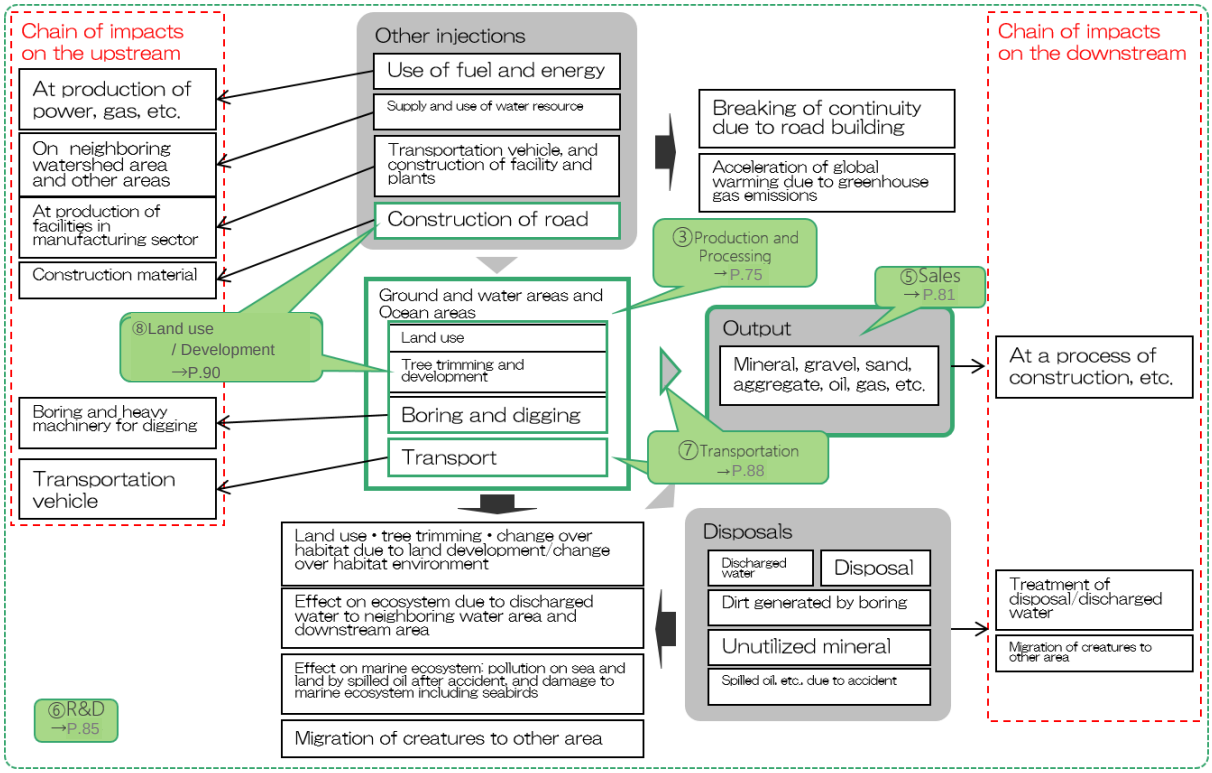
2a. Fishery (other than aquaculture)



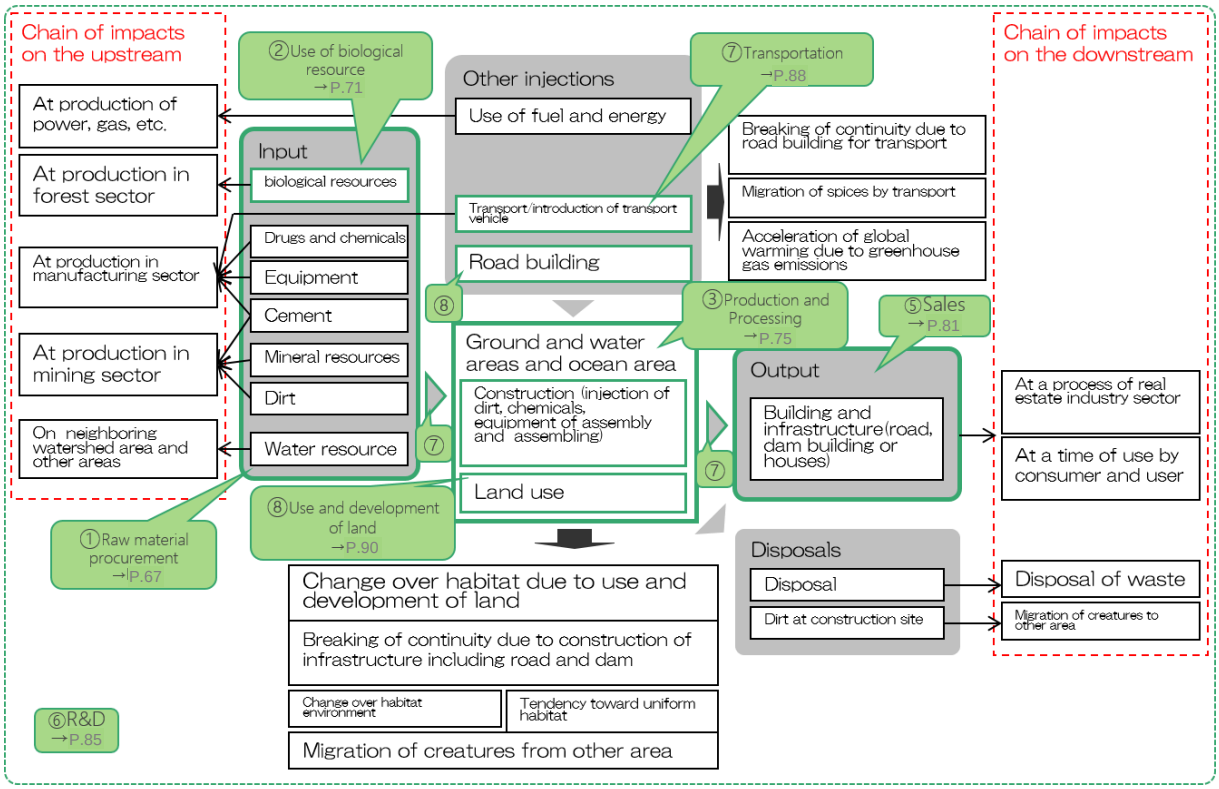
2b. Fishery (aquaculture)



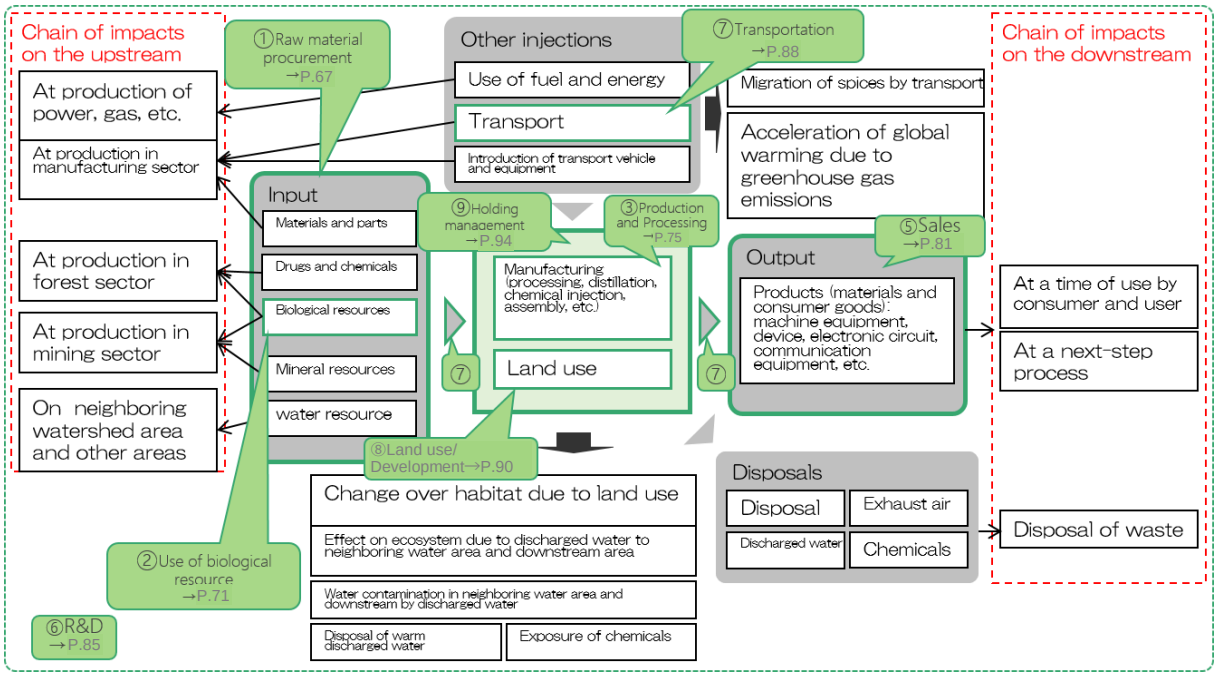
3. Mining



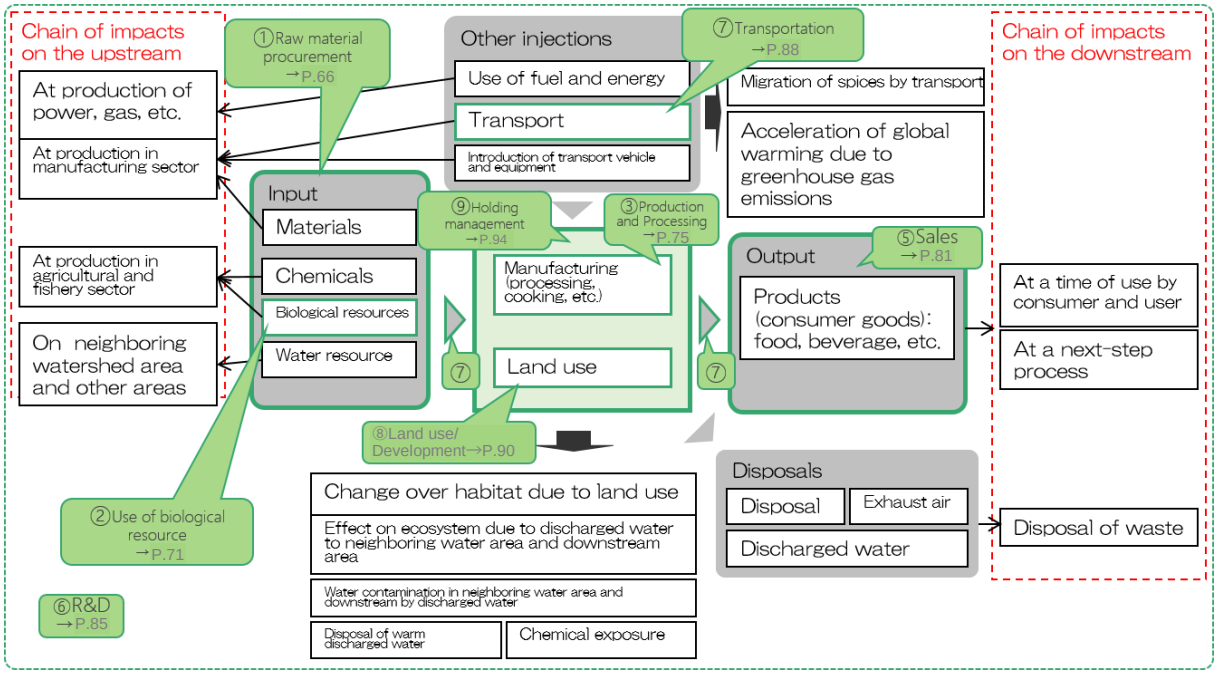
4. Construction industry



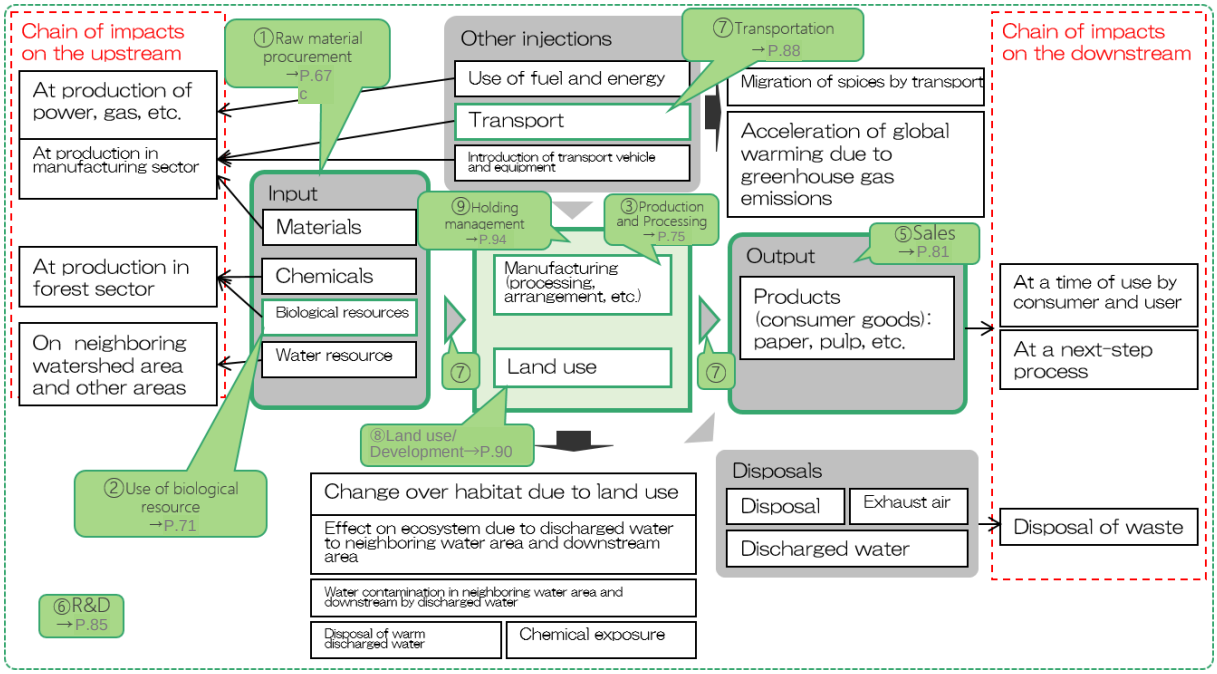
5a. Manufacturing industry (electronics and electric machinery)



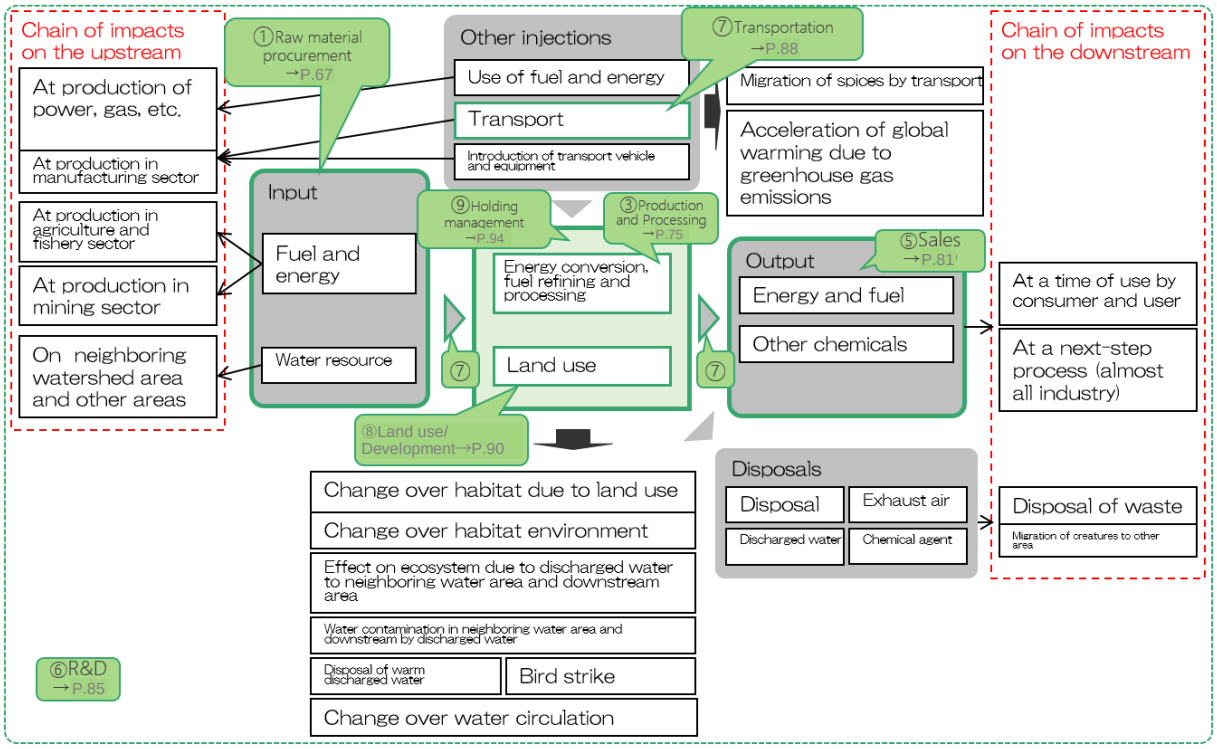
5b. Manufacturing industry (food and beverage)



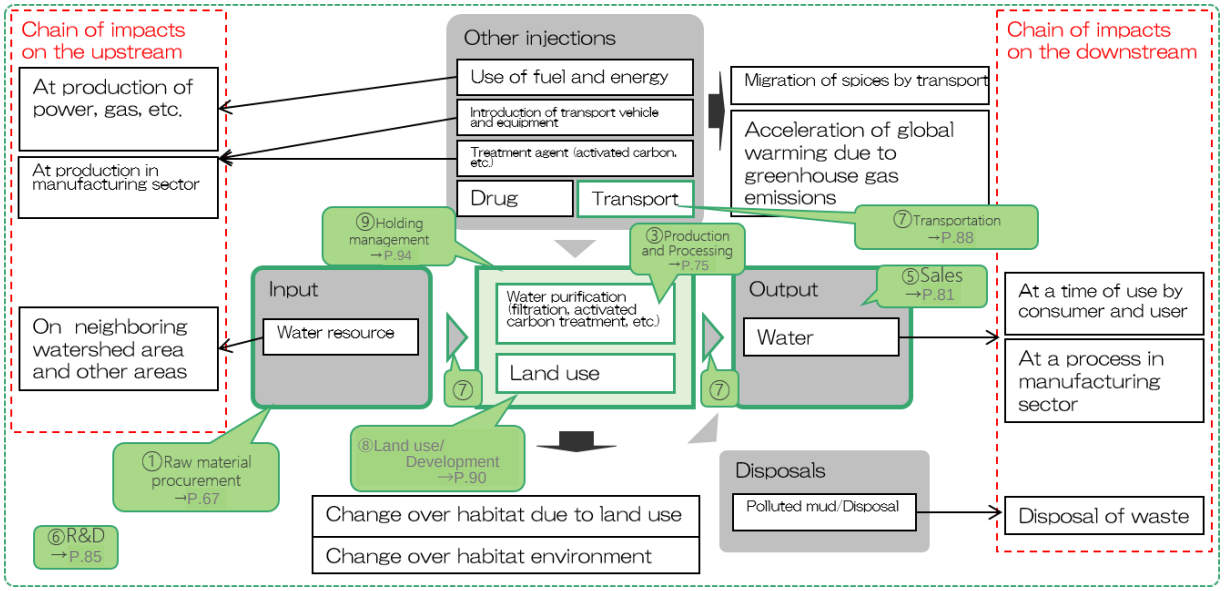
5c. manufacturing industry (pulp and paper)



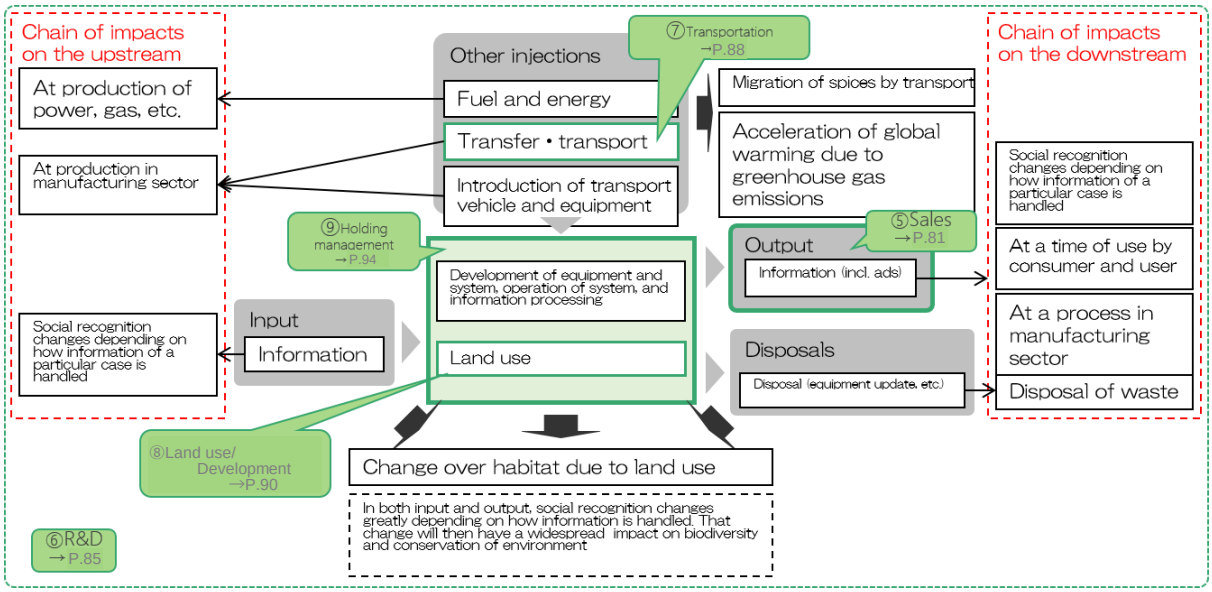
6a. Energy industry



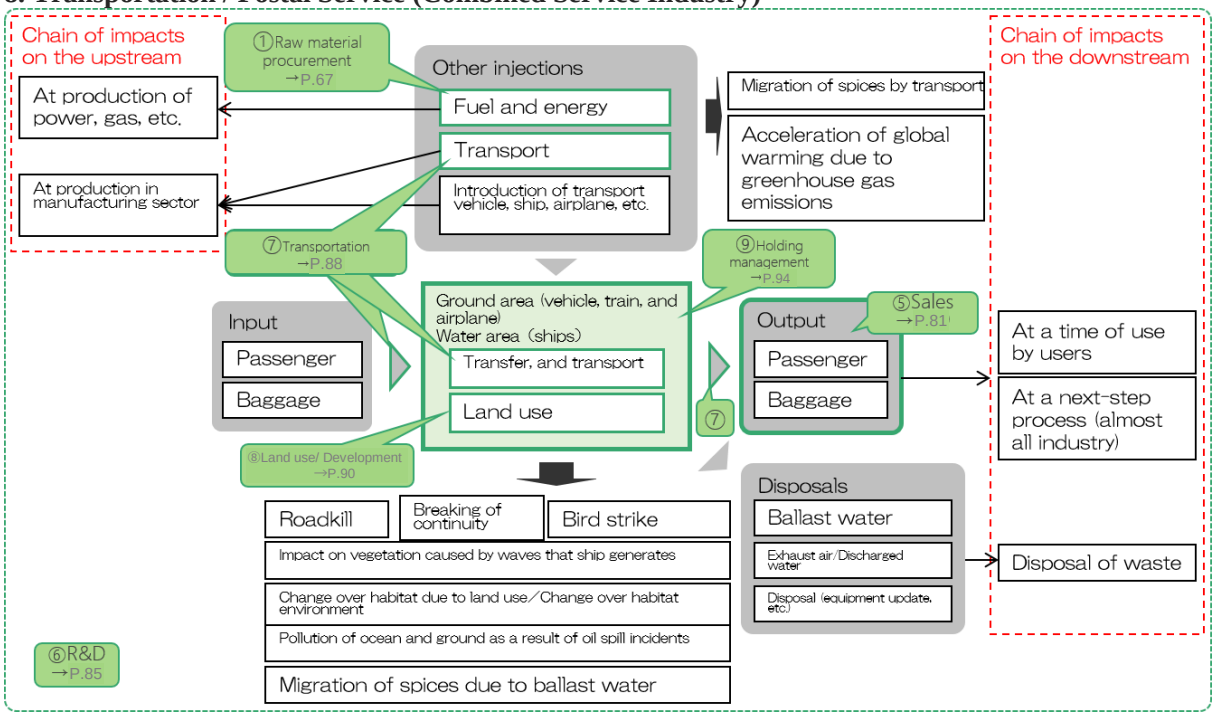
6b. Water industry



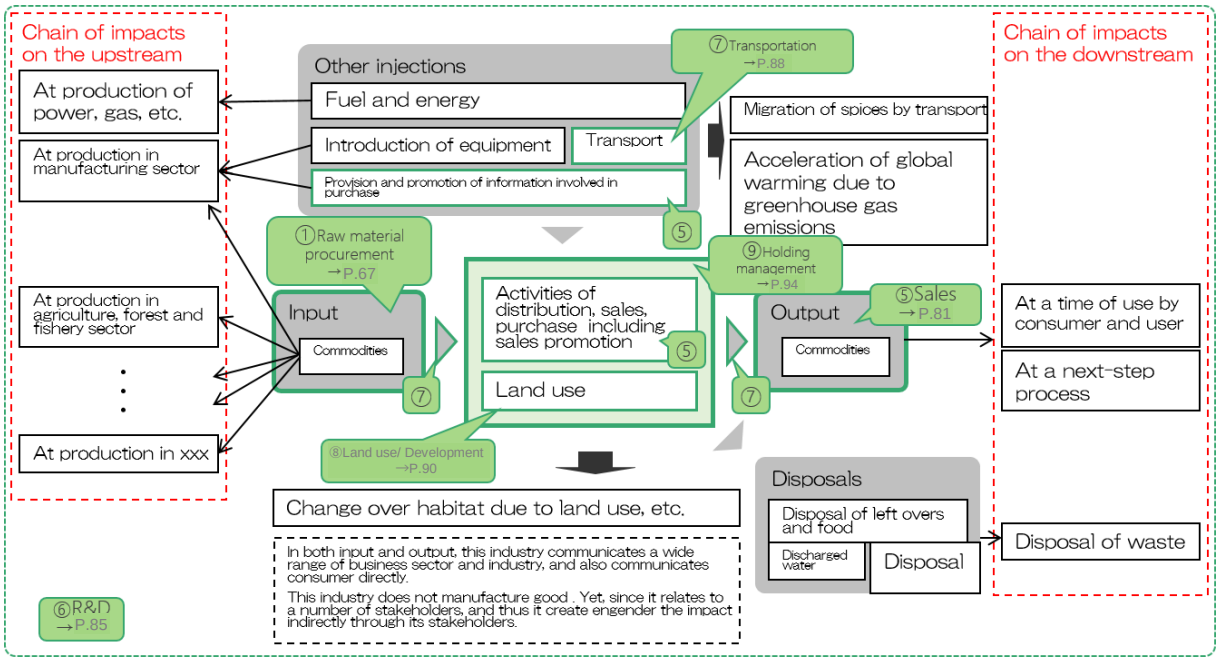
7. Information and communication industry



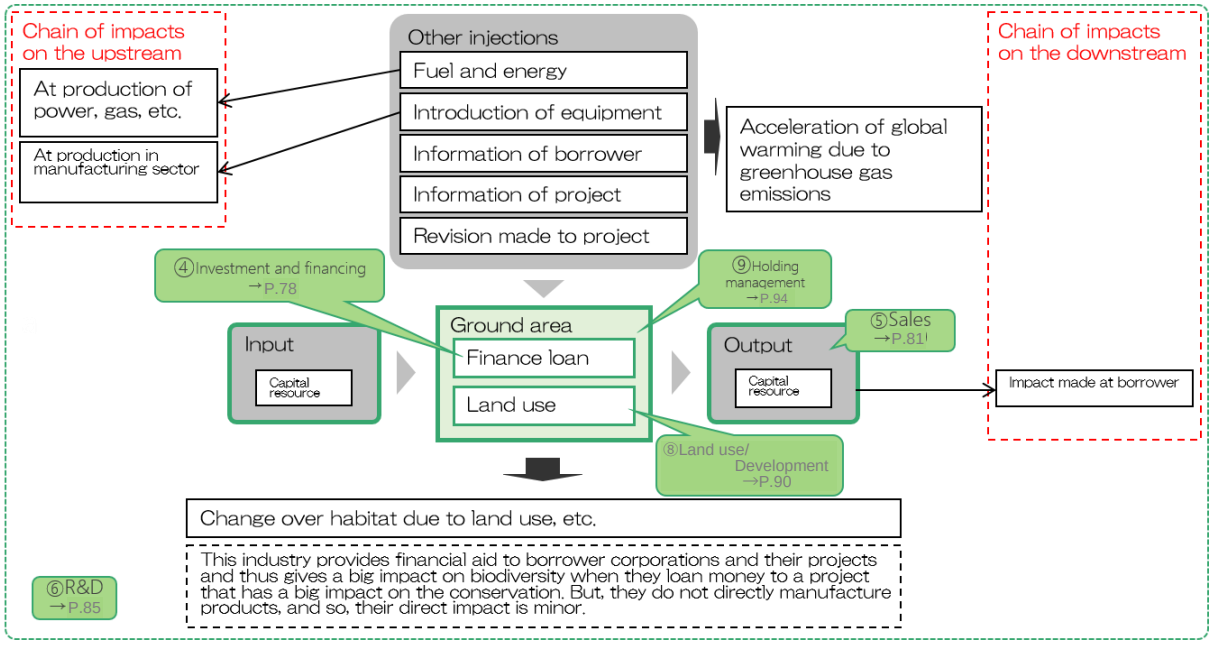
8. Transportation / Postal Service (Combined Service Industry)



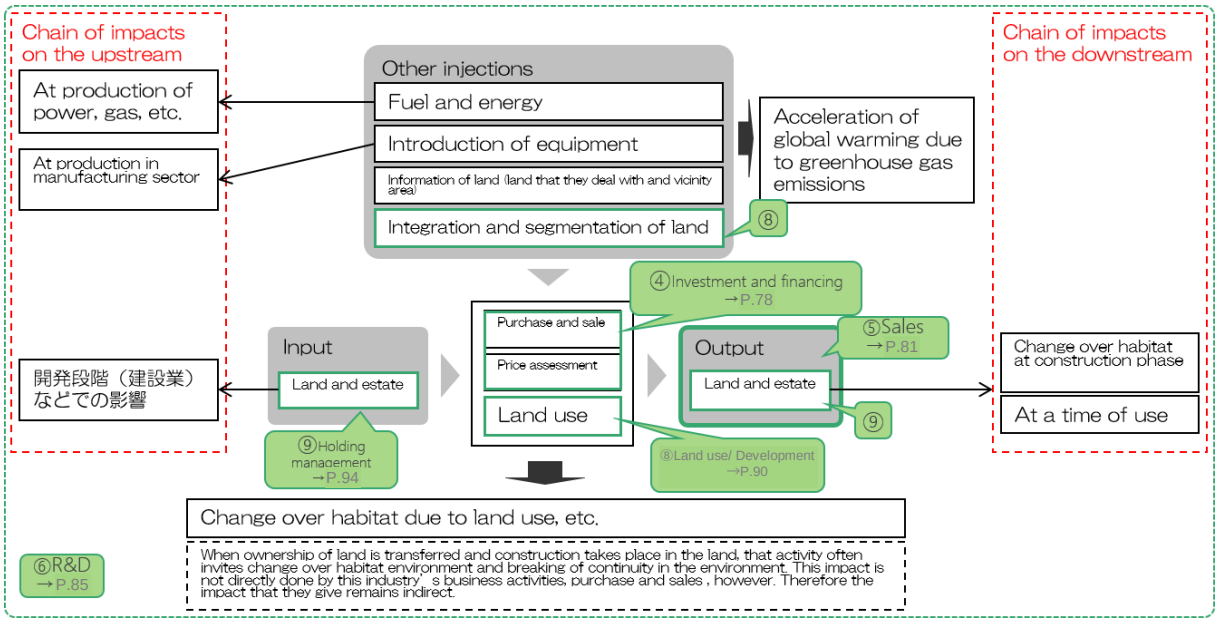
9. Wholesale / Retail



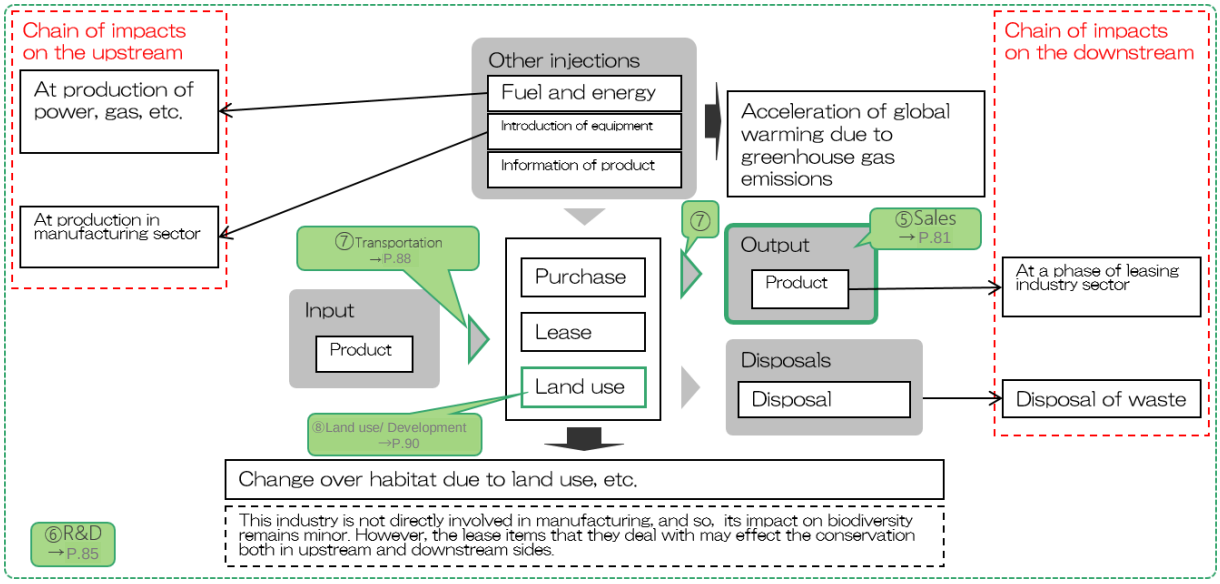
10. Financial industry / Insurance industry



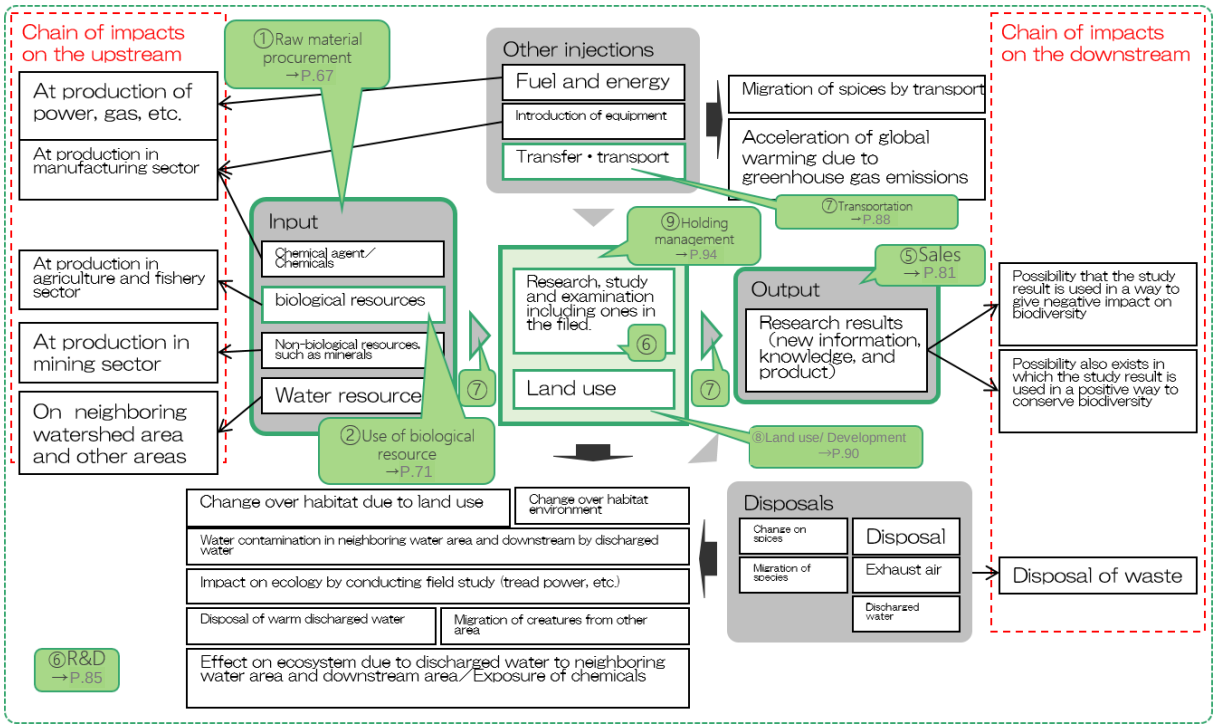
11a. Real estate industry



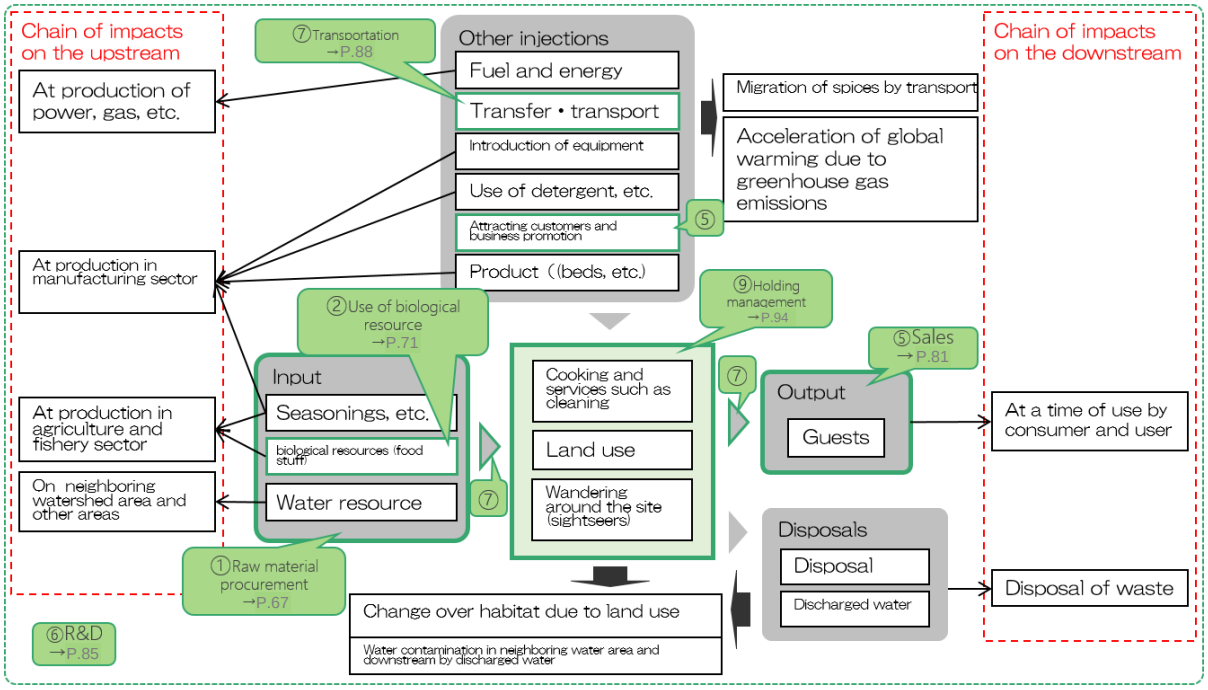
11b. Rental business



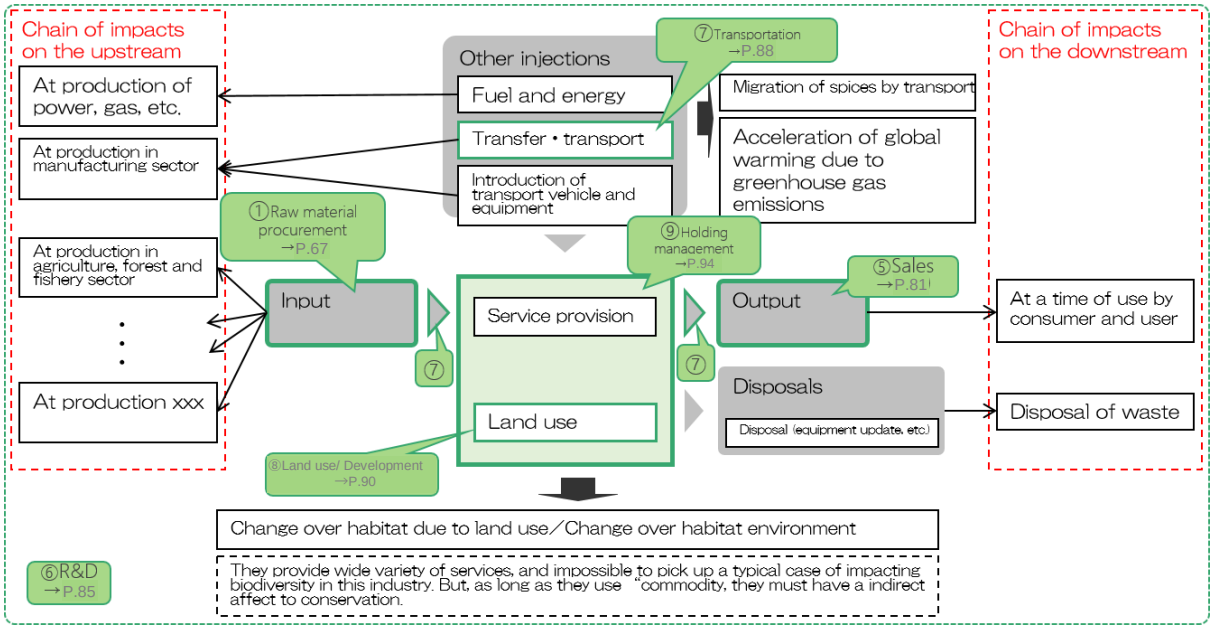
12. Academic research, specialized / educational services, educational support



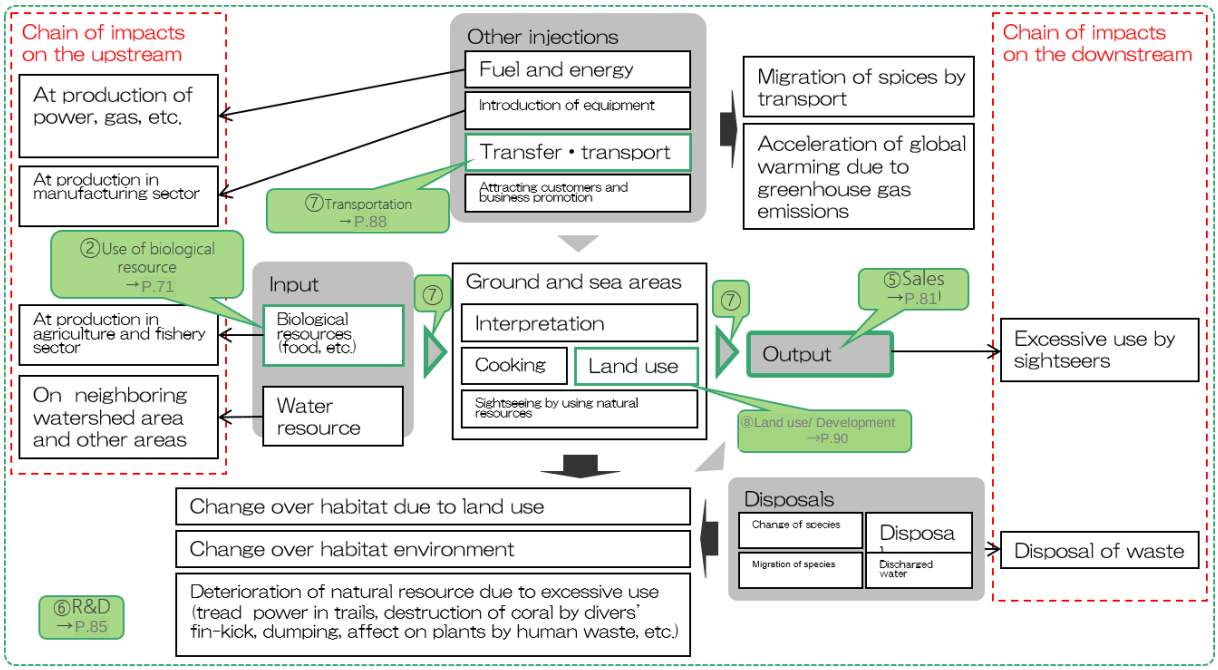
13. Accommodation / Food industry



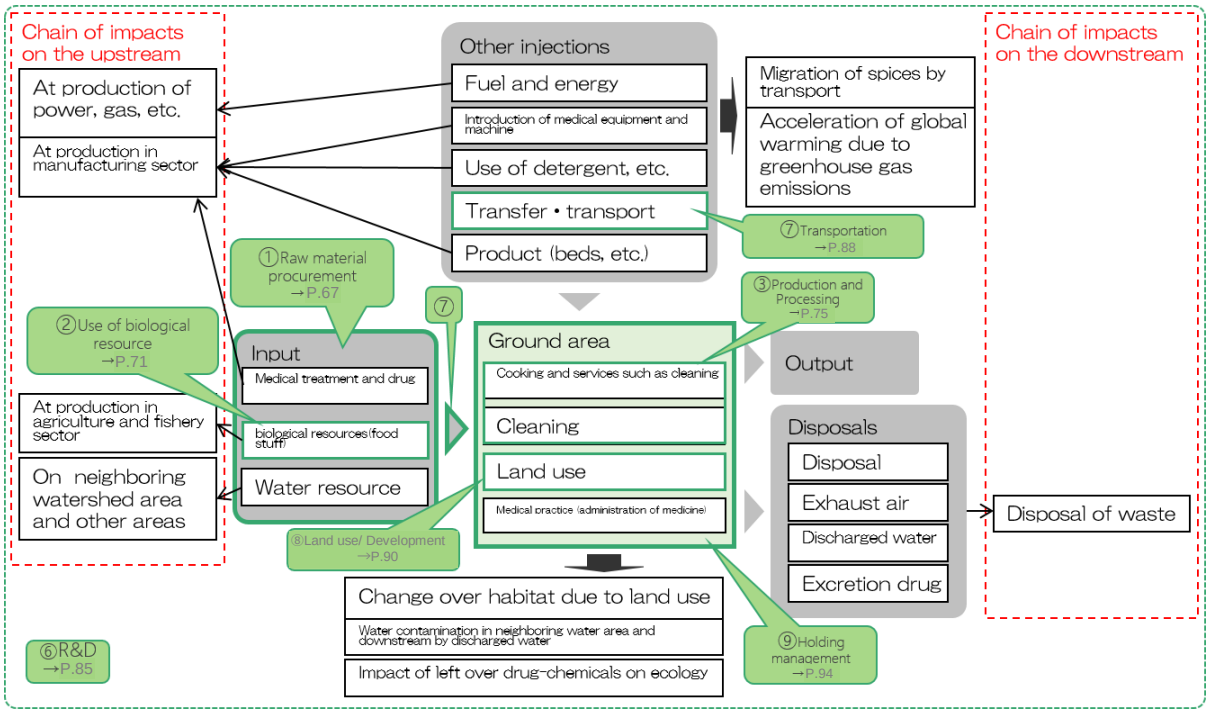
14. Living related service industry



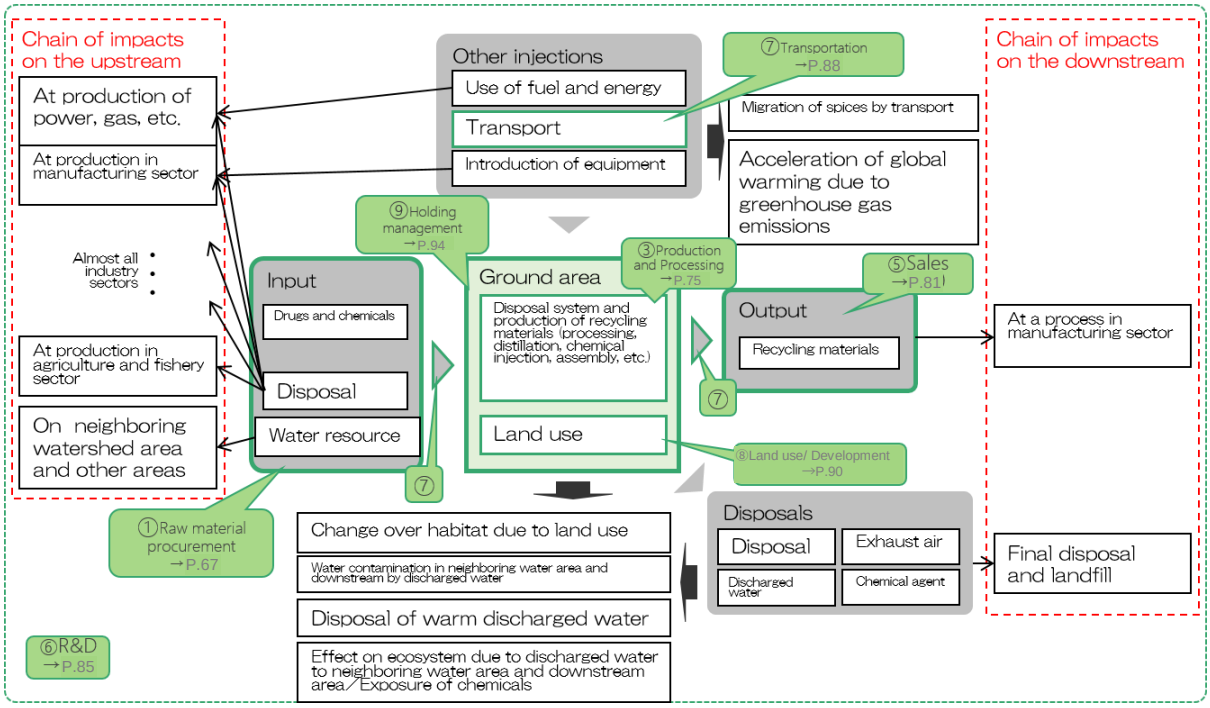
15. Tourism industry



16. Medical care and welfare



17. Recycling / Waste Disposal Industry (Service Industry)



Part 3 Common activities for all business types

In this part, we introduce "common activities of all business entities" introduced in Part 2. You can refer to all activities, but first, please have a look at items you are going to work on.

The basic structure of each article is as follows:

① Subject name	Activity name
② Key message	Important point of view for conducting activity and merits for business entities
③ Idea	Basic conscept, important point of view for conducting activities and ideal operation. Particularly important parts are underlined.
④ Practical tips	Useful information and tips for efficient implementation of activity
⑤ Examples	Examples related to above mentioned activities by business entities or organizations

①Subject
②Key Message
③Idea

1. System Structure

By deciding the person in charge and clarifying the point of contact, you can collect information from inside and outside efficiently.

Idea

In order to reliably and efficiently conduct activities on the conservation and sustainable use of biodiversity, it is desirable to decide who promotes these activities. To establish such a structure, it is necessary to consider systems that can respond to each of (1) contact and report with the company (including the Board of Directors), and (2) cooperation with external stakeholders. By creating a system, contact points for inquiries from inside and outside the company will be clarified and the information will be gathered into one place, which drives activities. Types of organization structure may vary, such as establishing organizations and specialized departments that span multiple divisions according to the characteristics of the business. Please decide according to the scale and characteristics of business entities.

④Plactical tips

Practice Tips

Depending on the business type and scale of business entities, the activity system varies. In the business activities where sustainable use of biodiversity is an important aspect, it is efficient to have one system applicable across multiple divisions and officials/executive level personnel. (Example: If you are procuring biological resources as raw materials, make a team with personnel in the environmental department and raw material procurement department as well, etc.)

⑤Example

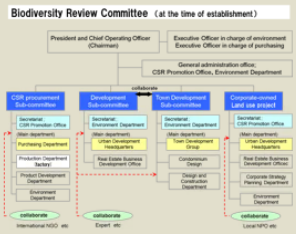
An examples of activities from business entities

•Information	Company name	Daiwa House Industry Co., Ltd.
	Business contents	Construction business, Urban development business, Overseas business and Other businesses
	Number of employees	15,725 (as of April 1, 2017)

•Activity content: setting up priority issues related to conservation of biodiversity as well as establishing a framework for the promotion and operation.

First of all, Daiwa House identified the influence of our business activities on biodiversity and also found out on which biological resources we rely, making the inputs and outputs in the value chain clear. Then, taking those results and also the progress of each of our business activity into account, we decided the priority of company's future activities: ① No procurement with illegal raw materials or ecological destruction, ② Control of ecosystem losses in the development process, ③ Town development that considers conservation and restoration of ecosystem, ④ ecosystem conservation utilizing land owned by the company and support for external activities. These are the four priority issues.

Biodiversity Review Committee (at the time of establishment)



In addressing these four issues, Daiwa House has established a cross-sectional organization called "Biodiversity Review Committee" which has following four sections (① CSR Procurement Sub-committee, ② Development Sub-committee, ③ Town Development Sub-committee, ④ Corporate-owned Land use project) and promoted its activity. Group companies have been recently included into the scope of the investigation of the CSR Procurement Sub-committee (①). The Committee addresses social issues such as human rights as well, formulates and operates guidelines for CSR procurement etc.

Source: Daiwa House Industry Co., Ltd. website
(https://www.daiwahouse.com/English/sustainable/csr/esg/csr_report/index.html)

1. System Structure

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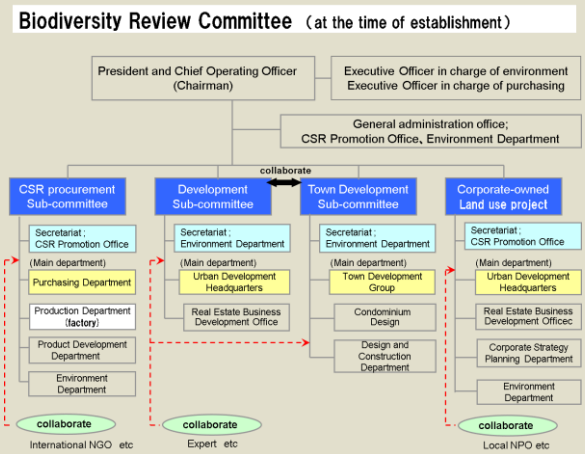

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Source: Daiwa House Industry Co., Ltd. website
(https://www.daiwahouse.com/English/sustainable/csr/esg/csr_report/index.html)

2. Understanding the Relationship between Business Activities and Biodiversity

- **It is important to understand the risks, opportunities, and priorities in sustainable business activities, and to recognize how they depend on and influence biodiversity.**
- **When understanding the relationship between business activities and biodiversity, it is effective to arrange the relationships in each value chain and to organize the ecosystem services by business activities.**

Idea

When understanding the relationship between business activities and biodiversity, it is important to understand what kind of impact business entities put on the grace of biodiversity. It is also important to promote awareness towards the necessity of action, and prioritize the necessary activities.

There is no established method for understanding the relationship between business activities and biodiversity. The Guidelines will help business entities establish an individual approach according to the type and scale of their business. Business entities are expected to understand the relationship in a quantitative and qualitative manner and analyze the merits and risks in conducting biodiversity activities. It is desirable that the importance and necessity of addressing those activities will become widely recognized.

Some industries may find it difficult to grasp the relationship between business activities and biodiversity. In that case, it is possibile to start with indirect activities including existing activities for environment (reduction of CO2 emission and compliance with wastewater standard etc.) and CSR activities.

Practical Tips

The relationship between business activities and biodiversity should be understood according to the type and the scale of business entities. Specifically, the following procedure is recommended.

1） Identifying scope of the activity

Business entities can clarify what to analyze by identifying the scope of the activities (activity contents, duration etc.). It may sometimes be difficult to grasp the scop depending on the length and complexity of individual supply chain. In that case, it will be better to see feasibility and magnitude of anticipated impact first to identify the range of activities. The duration of the activities should also clarified.

2） Understanding the relationship

The relationship between business activities and biodiversity should be grasped quantitatively and qualitatively. Specifically, the ecosystem on which your business activities give influence and the benefits on which your business depends on should be identified.

For analysis, you may refer to the Guidelines and existing tools "Ecosystem service evaluation (ESR) [19] for enterprises", "Relationship map[20] between enterprises and biodiversity" ®. There are also ways to check the effects on biodiversity from the viewpoints of biological growth and habitat change, excessive extraction of biological resources, alien species, pollution, climate change, etc.
The following tips are useful when checking the grace you receive from and the influence you give on biodiversity.

[19] Ecosystem service evaluation (ESR) for companies (WBCSD, Hitachi Chemical Co., Ltd., 2008)
[20] Relationship map of companies and biodiversity ® (JBIB) (related information is available on ※ p.12 and p.40)

Tips for checking the benefits

- ✓ Are biological resources such as food, wood, fiber crops and water being used in your business?
- ✓ When using biological resources, is the amount of the resource increasing or decreasing?
- ✓ When resources are no longer available, is there a cost-effective alternative?
- ✓ Is there any activities like ecotourism which utilize natural environment such as natural landscape and wild animals and plants?
- ✓ Is the prevention of natural disaster by ecosystem deeply related with continuation of stable business and good performance?
- ✓

Tips to check the impact

- ✓ Where and to what extent do you use land in your business? Does the land being used include land which should be protected in terms of conservation of biodiversity?
- ✓ How much has the habitat of living creatures been reduced by land use? How is the habitat divided by land use?
- ✓ How much do business activities use biological resources?
- ✓ Have invasion of species and genetic contamination been caused by the business activities?
- ✓ Have the business activities caused environmental pollution and changes leading to destruction of creatures' habitats?
- ✓ Due to the above effects, do others got restricted from receiving grace of biodiversity?
- ✓ Due to the above effects, are local society and culture affected?
- ✓ Is there any possibility that technologies, products, services, solutions owned by the company contribute to conservation of biodiversity?
- ✓ Is it possible to create added value from the viewpoint of the value chain in the process from raw material procurement to disposal?

Because the influence on biodiversity differs depending on the business content, scale, activity area and has scientifically not been fully clarified, the approach for assessment and measure of the influence is case by case. In the same industry, it is also efficient to encourage business organizations to establish an industry activity policy.

3）Risk and merit analysis

Taking results of comprehension of benefits from and influence of biodiveresity and the type and scale of business entities, you consider risks and merits arising from not addressing and addressing biodiversity.

4）Priority review

When considering the priority of biodiversity activities, following viewpoints are important:

• Business activities which greatly depend on the benefits of biodiversity; ones which give great impact on biodiversity

• Business activities whose dependance on benefits or impact on biodiversity is moderate but have possibility of great risks or chances

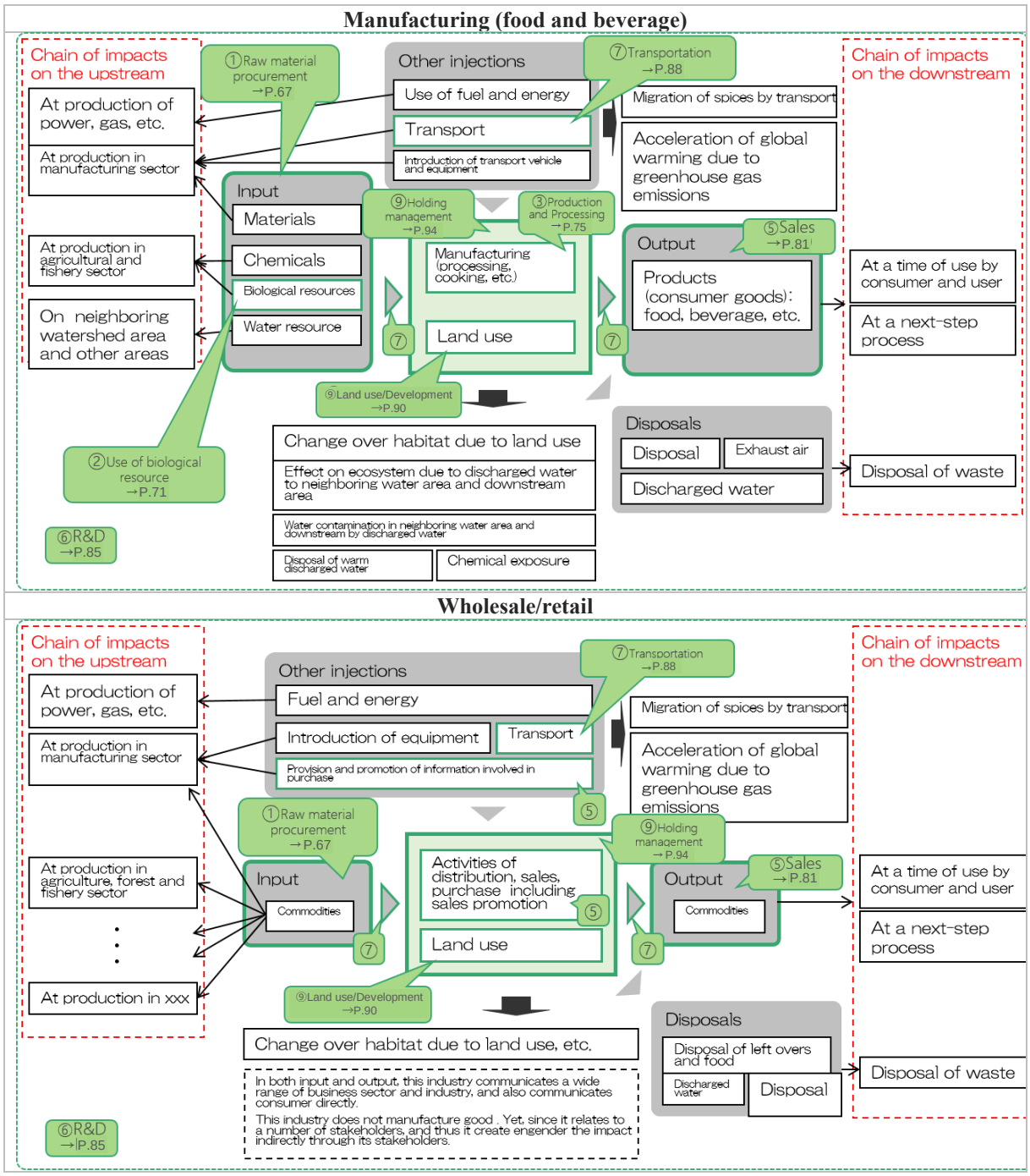
Next step will be to identify the ones which should be promoted intensively for conservation and sustainable use of biodiversity from the medium- to long-term perspective and also the ones which has relatively low priority but still need to be addressed.

Introduction of Tools for Understanding Relationship

So far, tools to understand the relationship between several business activities and biodiversity have been created and published. By utilizing these tools, you may be able to get an overview of the complex relationship between business activities and biodiversity. Followings are relevant information and tools available.

○Relationship between business activities and biodiversity (Ministry of the Environment)

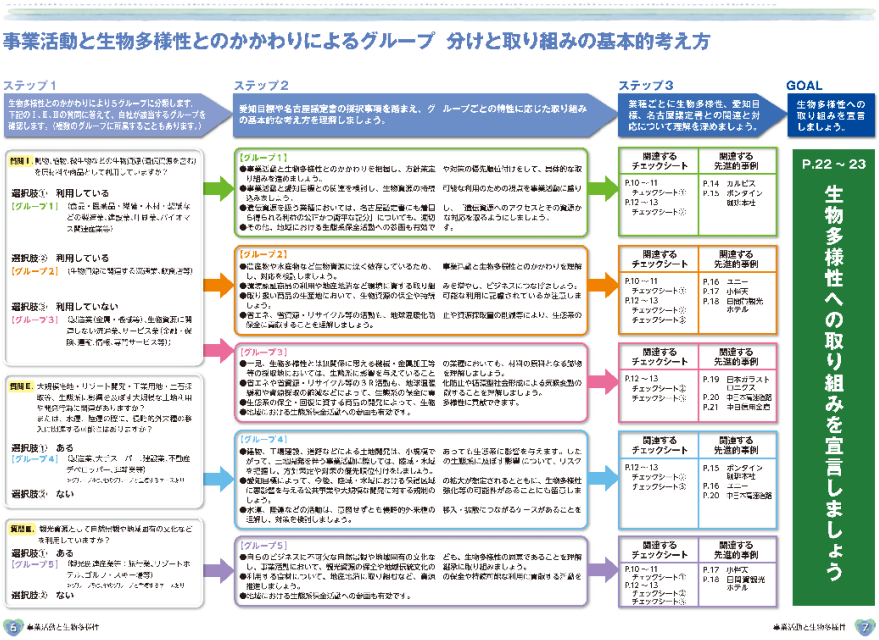
The Ministry of the Environment has made analysis on the relationship between the biodiversity crisis and business activities for each of 24 industries. The diagram shows the impact given to biodiversity by input and output from business activities. Those diagrams are modified and cited on from p. 28 to 40 of the Guidelines.



Source: Ministry of the Environment website（http://www.biodic.go.jp/biodiversity/private_participation/crosslink/index.html）

○ **Business activities and biodiversity guidebook: how to understand their relevance and how to approach (Nagoya Chamber of Commerce ＆ Industry, 2012)**

Toward the realization of a sustainable economic society, the Nagoya Chamber of Commerce ＆ Industry has prepared and announced a checklist to grasp the relationship between business activities and biodiversity, based on the Aichi Targets adopted at CBD - COP 10. The business activities are divided into five groups according to a simple criteria and it is possible to confirm how business activities affect biodiversity and how they relate to the Aichi Targets.



Source: Nagoya Commerce Eco Club HP（http://www.meisho-ecoclub.jp/?page_id=49）

○Let's study biodiversity (LSB)

(The Biodiversity Working Group, The 4 Electrical and Electronic Industry Associations, 2014)

The Biodiversity Working Group of the 4 Electrical and Electronic Industry Associations compiled an educational material for company employees to deepen their knowledge about conservation and sustainable use of biodiversity and to promote business activities that takes biodiversity into account. It contains the figure which shows the relationship between conservation activities of biodiversity and Aichi Biodiversity Targets, for each life-cycle stage of the business activities. It helps us to understand which items can contribute to Aichi Target. In addition, the working group compiled the Biodiversity Conservation Case Studies (2013). It summarizes in detail the influential factors and concrete actions of corporate activities in the document.

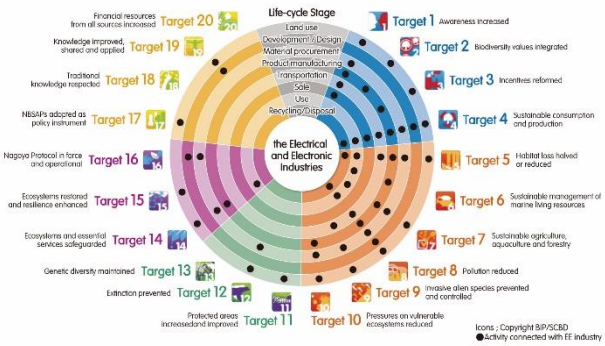


Fig.1 Relevance of the Biodiversity Conservation Activities by the Electrical and Electronic Industries to the Aichi Biodiversity Targets

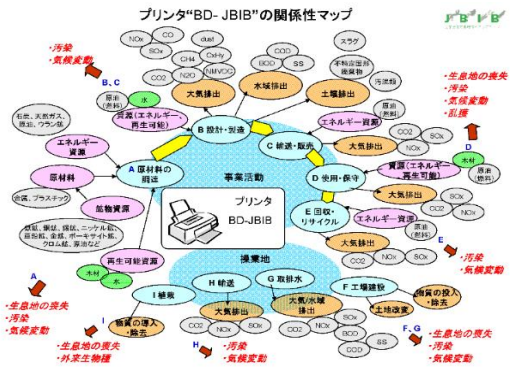
【Relationship between conservation activities of biodiversity and Aichi Targets in the electrical and electronic industry】

Source: The Japan Electrical Manufacturers' Association/JEMA website(https://www.jemanet.or.jp/English/businessfields/environment/biodiversity.html)

○ Business and Biodiversity Interrelationship Map ® (JBIB, 2008)

Business & Biodiversity Interrelationship Map is a tool which has been developed by Japan Business Initiative for Biodiversity and takes up the whole lifecycle of a company's products and services from raw material procurement to waste management, as well as the land use at the site of operations, to show how a business depends on and also impacts biodiversity. This schematic and visual portrayal allows intuitive understanding of the relationship between biodiversity and a company's products and services.

Source: JBIB HP：http://jbib.org/activity-jbib/relation-map/

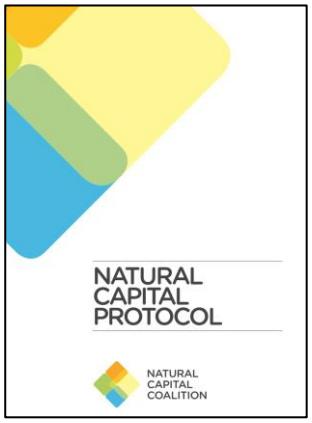


【Business and Biodiversity Interrelationship Map image】

○ Natural Capital Protocol (Natural Capital Coalition, 2016)

The Natural Capital Coalition launched the "Natural Capital Protocol" in 2016.

The Natural Capital Protocol presents the standardized framework (thought process) for identifying, measuring and valuing the impacts and dependencies that businesses have on natural capital. It is designed to inform business decisions with natural capital information. The Protocol has been translated into many languages to facilitate its global uptake, with the Japanese version by Conservation International Japan being the first. The production of a supplementary document that will help businesses incorporate biodiversity in natural capital assessment (Biodiversity Supplement) is also underway.



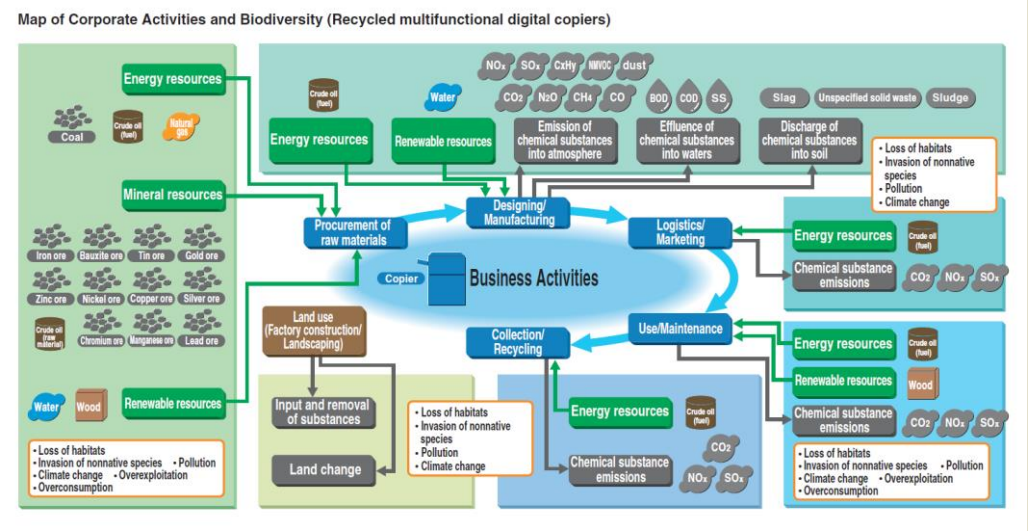
Source: Natural Capital Protocol（http://naturalcapitalcoalition.org/protocol/）

An example of activities from business entities

●Information	Company name	Ricoh Company, Ltd
	Business contents	Imaging Equipment, Network Environment Operation Support/Maintenance/User Support, Optical Equipment, Semiconductor Devices, Digital Camera, etc.
	Number of employees	105,613 (consolidated)

●Content of activity：Creating a relationship map of biodiversity and reflecting it in business activities

The Ricoh Group created a map to show the exact relationship between our business activities and biodiversity. The “Map of Corporate Activities and Biodiversity” follows the JBIB format to show the relationship between corporate activities, such as product lifecycle and land use, and biodiversity at a glance. From the map, we learned that the copier industry has a large impact on the ecosystem due to procurement of raw materials (e.g., paper pulp and metals) and manufacturing and consumption of paper. We will use the information from the map in our conservation activities in close cooperation with each business division.



Source: Ricoh Group website（http://www.ricoh.com/environment/biodiversity/）

3. Setting Objectives

- **In order to improve understanding of the importance of activity within the organization and to promote activity, it is effective to set policy and targets in a top-down style.**
- **When establishing direction and objective, consideration should be made not only inside the company but also with stakeholders to enhance the effectiveness and sustainability.**
- **Objectives are not necessarily to be quantitative, but from the perspective of corporate accountability (accountability), it is important to note that social demands for information disclosure are increasing.**

Idea

Top-down style is effective when disseminating and establishing that activities for conservation and sustainable use of business are to be carried out within an organization. You should strive for widely set biodiversity policies and objectives by incorporating biodiversity perspective into existing environmental policies and procurement standards.

It is important for business entities to specify what activities they are trying to address and what are the priorities with regard to feasibility. Also, providing declarations or guidelines as a manifestation of intention to promote activity on biodiversity conservation and sustainable use of it will serve as PR to inside and outside the company. Setting realistic, measurable and easy to monitor indicators that will be monitored and adjusted every two to three years is also recommended. If necessary, it is also important to explain to suppliers about the set goals and indicators and build cooperative relationships with them. Depending on the type of industry, it may be difficult to quantify the activity on conservation and sustainable use of biodiversity, in which case qualitative targets can be used.

Practical Tips

It is easier to determine the direction of activity by utilizing existing goals and documents effectively such as National Biodiversity Strategy (2012-2020), Aichi Target, Keidanren's biodiversity declaration. It is also an effective way to add biodiversity related items into existing guidelines and policies of individual business entities and. where available, business associations. Important points when establishing guidelines or policies individually are shown below:

- Clarify priorities, based on the characteristic of business entities
- Align with plans of higher level, when adding activities to existing guidelines
- Business entities who have weak relationship with biodiversity can clarify the direction of possible indirect activity including social contribution etc.
- Present the direction of the coordination with external stakeholders, when necessary.

Action items included in objectives should be those which can be checked by business entities themselves and are publicly reportable. Also, objectives should be not necessarily quantitative. Depending on the type of industry, your action items may directly or indirectly influence business entities located in the upstream and downstream of the supply chain. So, you should set realistic targets by taking the linkage among business entities into account. Followings are points to keep in mind when setting goals:

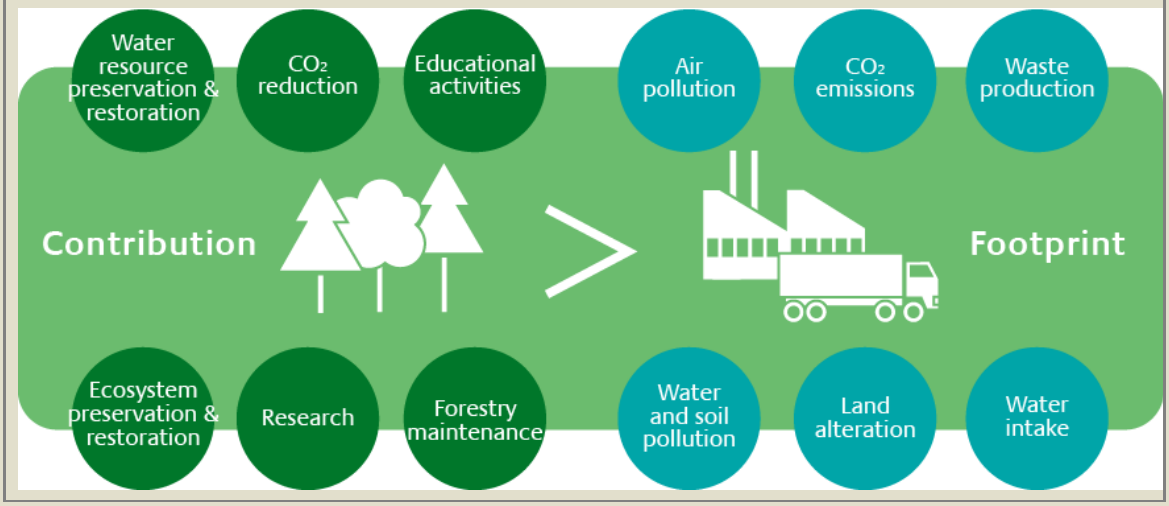
- Set objectives based on the type of business entities.
- Consider the relationship with global goals (Aichi Targets and SDGs etc.) (Example: Contribution to Aichi Target/target 4 etc)
- Assume achievement time frame. (For example: short-term, medium-to-long term etc.)
- Ask for opinions by experts and third parties about the validity of objectives.

An example of activities from business entities

●Information	Company name	Bridgestone Corporation
	Business contents	Tire business (various tires, tire related items, retread materials/related technologies, automobile maintenance/repair etc.), diversified business (chemical products, sporting goods, bicycles etc.)
	Number of employees	143,616 (consolidated)

●Content of activity: Setting long-term vision "In balance with nature[21]"

The Bridgestone Group is committed to achieving both business and environmental conservation, being in harmony with nature. The Group is conducting activities targeting "in balance with nature" throughout all business areas. "In balance with nature" is one of Group's long-term visions for 2050 and means offsetting the negative impact on biodiversity by minimizing footprint and enhancing contributions.
[Activity concept of being in balance with nature]



Source: Bridgestone Corporation website
(https://www.bridgestone.com/responsibilities/environment/nature/index.html)

[21] No Net Loss: In developing a certain area, biodiversity that is lost in the development area is compensated (offset) elsewhere so that no deduction is made as a whole and the biodiversity is not affected.

An example of activities from business entities

●Information	Company name	Saraya Co.,Ltd.
	Business contents	Development, manufacturing and sales of sanitary goods such as detergents, disinfectants etc
	Number of employees	1,733 (Group-wide)

●Content of activity: integration of corporate activity goals and SDGs

Integrating SDG related actions into corporate strategies

Saraya's vision has been"to improve the sanitation, environment and health of the world" since it's foundation in 1952. In recent years, Saraya has expanded its business globally with the goal of improving the wellbeing of the world through these three fields and actively contributing to society through business activities as well as CSR initiatives. Since 2016 Saraya has identified key SDGs to pursue through its core businesses and values after the completion of the MDGs. Unique relationships within the supply chain have created opportunities to support progress towards the achievement of the SDG's. In particular, SDG Goals 3, 5, 6, 7, 8, 10, 12, 13, 14, 15 and 17 are highly relevant to Saraya's business.

	Boundary (Supply Chain)				Targets of the SGDs that are related to Saraya	Related products, service, project or CSR	Relevant pages
	Up-stream	Saraya	Down-stream				
15 LIFE ON LAND	Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and haltbiodiversity loss						
	✔	✔	✔	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and dry-lands, in line with obligations under international agreements	"You Can Save Borneo!" Campaign since 2007	p.24-27
	✔	✔	✔	15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforesta-tion globally		
	✔	✔	✔	15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species		
		✔		15.a	Mobilize and significantly increase financial resources from all sources to conserve and sustain-ably use biodiversity and ecosystems		
		✔		15.b	Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such man-agement, including for conservation and reforestation		

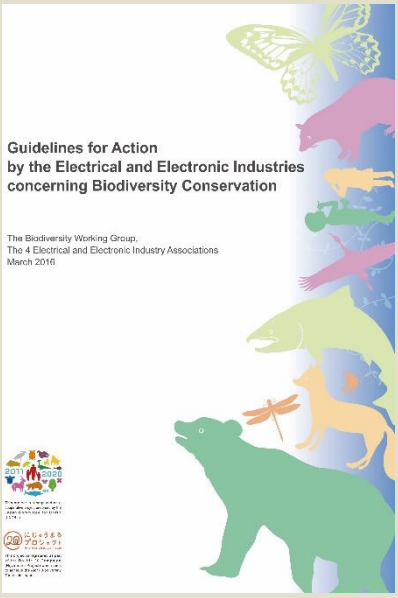
An example of activities from business entities

●Information	Organization name	The 4 Electrical and Electronic Industry Associations (General Association of The Japan Electrical Manufacturers' Association/JEMA, Japan Electronics and Information Technology Industries Association/JEITA, Communications and Information Network Association of Japan/CIAJ, Japan Business Machine & Information System Industries Association/JBMIA) Environmental Strategy Liaison Committee-Biodiversity Working Group
	Business contents	Planning and promoting measures for the sustainable development of the electrical and electronics industries, suggesting opinions and policy recommendations to various policies of the government and administration
	Number of members	About 470 companies/organizations (4 regular members)

● Content of activity: Formulation of action Guidelines concerning biodiversity conservation

The Biodiversity Working Group, The 4 Electrical and Electronic Industry established "Guidelines for Action by the Electrical and Electronic Industries concerning Biodiversity Conservation" in March 2015 to accelerate actions of the member companies on biodiversity conservation.

The Action Guidelines compare the business activities in the electrical and electronics industry with the 20 targets set by COP 10 (the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity), among which eight targets that are deemed to be deeply relevant (Target 1: Awareness increased, Target 4: Sustainable consumption and production, Target 5: Habitat loss halved or reduced, Target 8: Pollution reduced, Target 9: Invasive alien species prevented and controlled, Target 11: Protected areas increased and improved, Target 14: Ecosystems and essential services safeguarded, Target 19: Knowledge improved, shared and applied), specifically what should be done. In addition, when managing the progress of the measures, we regularly conduct a questionnaire survey on member companies to grasp the progress, then give feedback and provide the latest trends the results to the member companies,. Since 2016, the working group has constructed a database on biodiversity conservation activities of member companies and opened it widely to the public.



Source: JEMA website（https://www.jema-net.or.jp/Japanese/env/biodiversity2.html）

4. Drafting Plan

- **You can make it more effective, by making a concrete plan for the target.**
- **It is important to put the PDCA cycle in function, such as monitoring activity and reviewing plans described later, by improving the promotion system and progress management system utilizing the existing environmental management system.**

Idea

After setting policies and targets, you should consider modality and duration of the action you will take and draw up a plan. In holdings management, for example, first you decicde the vegetation for each part of the garden, then investigate necessary trees and grasses[22]. Further, you need to consider if the plan can be carried out only by your company and when and which part of the action or plan should be committed to outside experts.

At that time, it is important to work on the plan from a precautionary point of view while trying to accumulate scientific knowledge. Rreferring to existing environmental voluntary action plans is an efficient way. If your conpany has already formulated an environmental voluntary action plan, you may add biodiversity items when revising the plan.

When implementing the activity, it is important that the promotion and progress management systems and the PDCA cycle are in place. There is also a way to promote activity on conservation and sustainable use of biodiversity by utilizing existing environmental management systems and environmental committees. In addition, it is effective to publish your company's plan and activity status, for that can be a PR of your companies and the industry.

Practical Tips

One of the most effective way for drafting plans is to begin with the high prioritiy issues which give strong impact on ecosystem service or which are easy to tackle with because of clear understanding of employees and stakeholders. As for an issue requiring high expertise such as 'influence degree examination', it is strongly recommended to ask experts for advice. More effect may be obtained by planning internal workshops parallel with drafting plans.

[22] Inappropriate planning (introduction of alien species, genetic disturbance of native species, afforestation without consideration of subsequent management etc.) should be avoided by listening carefully to the opinions of experts and local residents in advance.

An example of activities from business entities

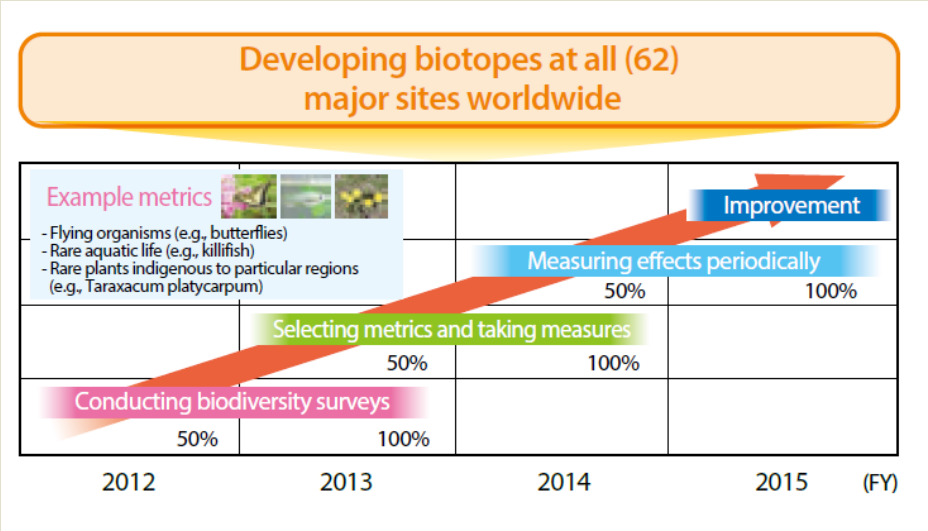
●Information	Company name	Toshiba Corporation
	Business contents	Energy Business, Social Infrastructure Business, Electronic Device Business, Digital Solutions Business
	Number of employees	153,492 (consolidated)

●Content of activity: Maintenance plan and progress management concerning conservation of biodiversity

Toshiba Group has formulated the 5th Environmental Action Plan from FY 2012 to FY 2015 and has conducted biotope development activities at 62 global bases. Within the plan, Toshiba Group set a goal of minimizing the adverse effects of its business activities on biodiversity and shifting its biodiversity policy toward initiatives for improvement to realize an ideal state of environmental management in 2015. It aimed to stop the reduction of protected species by 2015 and make efforts to increase them.

As for the maintenance of the biotope, Toshiba Group decided to proceed with three steps of "biodiversity surveys", "indicator selection" and "effect measurement", and as surveys, survey of creatures in the premises, red list survey of location areas, survey by experts and biodiversity potential assessment. Based on these survey data, species as indicators were selected, periodic effect measurements were made, and the validity of the process was evaluated. With regard to the progress status of these three steps, we set up planned values from FY2012 to FY2015, and based on this plan, we proceeded to develop the biotope by turning the PDCA cycle for each site and within Toshiba Group. With the planned roadmap formulation and progress management, we were able to secure an execution rate exceeding the planned value for all from FY2012 to FY2015 term.

[Contents of the 5th Environmental Action Plan]



[Plan and results of the 5th environmental action plan]

Subject	2012 Fiscal Plan/ Performance	2013 Fiscal Plan/ Performance	2014 Fiscal Plan/ Performance	2015 Fiscal Plan/ Performance
Survey execution rate	50%/81%	100%/100%	–/–	–/–
Index selection rate	–/19%	50%/91%	100%/100%	–/–
Measurement execution rate	–/–	–/18%	50%/67%	100%/100%

Source: Toshiba Group website (https://www.toshiba.co.jp/env/jp/vision/biodiversity_j.htm)

5. Building Internal Capacity

- **It is important to widely disseminate the understanding of biodiversity within the organization by promoting awareness of management and employees.**
- **By cultivating personnel who will become key persons to promote activity, you can efficiently build a capacity of management and employees.**

Idea

The latest information or tools on biodiversity as well as opportunities for study and training are important not only for the person in charge but also for other employees. It is important to establish, implement and maintain internal communication procedures among various related hierarchies and divisions in order to build capacity.

Through utilizing tools developed by business operator's organizations, future key personnel of the organization will be developed and raising awareness among the executive and employees will be promoted. And so, biodiversity will be understood more and more widely.

Practical Tips

There are several ways of building capacity, which vary depending on the understanding degree of the target person and the form of education. In addition to providing opportunities for capacity building to employees by holding seminars etc., activities examples including failure cases can also be shared to promote mutual learning. At the same time, it is also important to grasp the needs of employees and incorporate them appropriately. Here is an example of capacity building:

(1) Hold seminars and workshops

- Promoting capacity building on the relationship between business activities and biodiversity by seminars utilizing the internal education system
- Inviting external lecturers as necessary and obtaining information on the latest trends will broaden our horizons and lead to better understanding and motivation.
- Making real experience not only behind the desk, but also through field study will deepen the understanding.

(2) Introduction of activities

(3) Information sharing

- Cooperate with business entities' organizations and other business entities and share the information on the latest legislation and the domestic and overseas trends with them by using mailing list

(4) Provision of information

- Link websites serving as data source of existing manuals, guidelines, and scientific knowledge
- Provide information on workshops and lectures on biodiversity sponsored by other organizations to promote voluntary capacity building

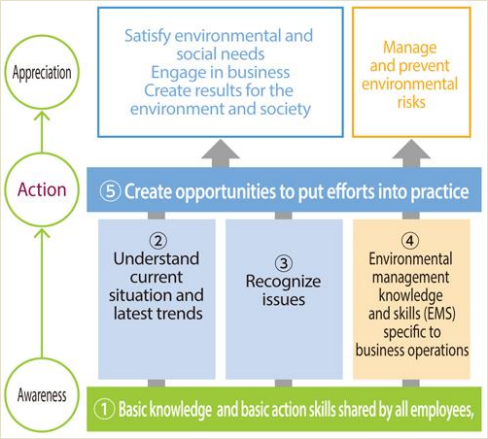
An example of activities by business entities

●Information	Company name	Sekisui Chemical Co., Ltd.
	Business contents	Manufacture and sales of housing, synthetic resin products, chemical industrial products
	Number of employees	23,006 (consolidated)

●Content of activity: Global environmental education for employees

In order to realize the long-term environmental vision, the Sekisui Chemical Group established an environmental education system for employees from 2014 and started education based on this. In order to realize the ideal environmental talent image of 2030, while shifting the level of employee's environmental talent level, the center of gravity of the educational program is gradually shifting from improvement of basic knowledge to creation of practical opportunities. Different educational programs are prepared by job levels and by roles , using e-learning, educational booklets, DVD and other tools. The type of educational program is shifted from passive programs such as lecture to participatory one using workshop that employees can think and act on their own.

These educations have been conducted mainly in Japan, and introduced gradually in North America, Europe and China and plan to continue globally in the future.



From 2017, Sekisui Chemical Group aims to visualize the knowledge and behavior of each employee by assessing the current level of achievement for the ideal environmental personnel to each person. In the future, the level of environmental knowledge and behavior of employees will be measured periodically with the assessment, in order to improve environmental education programs.

Source: Sekisui Chemical Co., Ltd. website（http://www.sekisui.co.jp/csr/eco/advance/env_education/index.html）

An example of activities by business entities

●Information	Company name	Nichirei Corporation
	Business contents	Processed food business, fishery business, livestock business, low temperature logistics business, real estate business, bioscience business
	Number of employees	14,682 (as of March 31, 2017)

●Content of activity: Implementation of environmental education

At the Nichirei Group, environmental education includes "Environmental e-Learning", which is held twice a year for all employees, "Energy Conservation Campaign at Employee's Home" to encourage employees and employees' energy conservation awareness. We conduct policies and targets, employee training to learn about connection between business and the environment.

Also, it created opportunities for learning not only in the classroom but also on the field, "Experience-type training at the company owned site of Fukushima Prefecture Bandai", such as exterminating specific alien species and walking around forests around the company's premises, Learning the difficulty of recovering the lost nature at the local site, "experiential training for protecting endangered species in Fujimi-cho Nagano Prefecture" and "hands-on training in supporting forest" are being implemented

Walking in the company owned land

Wood thinning work in supporting forest

Blooming *Cypripedium*

Source: Nichirei Group website（http://www.nichirei.co.jp/csr/environment/system.html）

An example of activities by business entities

●Information	Organization name	MEIDENSHA CORPORATION
	Business contents	Research & development/ design/ manufacture/ marketing & sales of electrical equipment, design & construction concerning plant construction, and maintenance of plant facilities
	Number of members	Consolidated 8,474 (as of March 31, 2017)

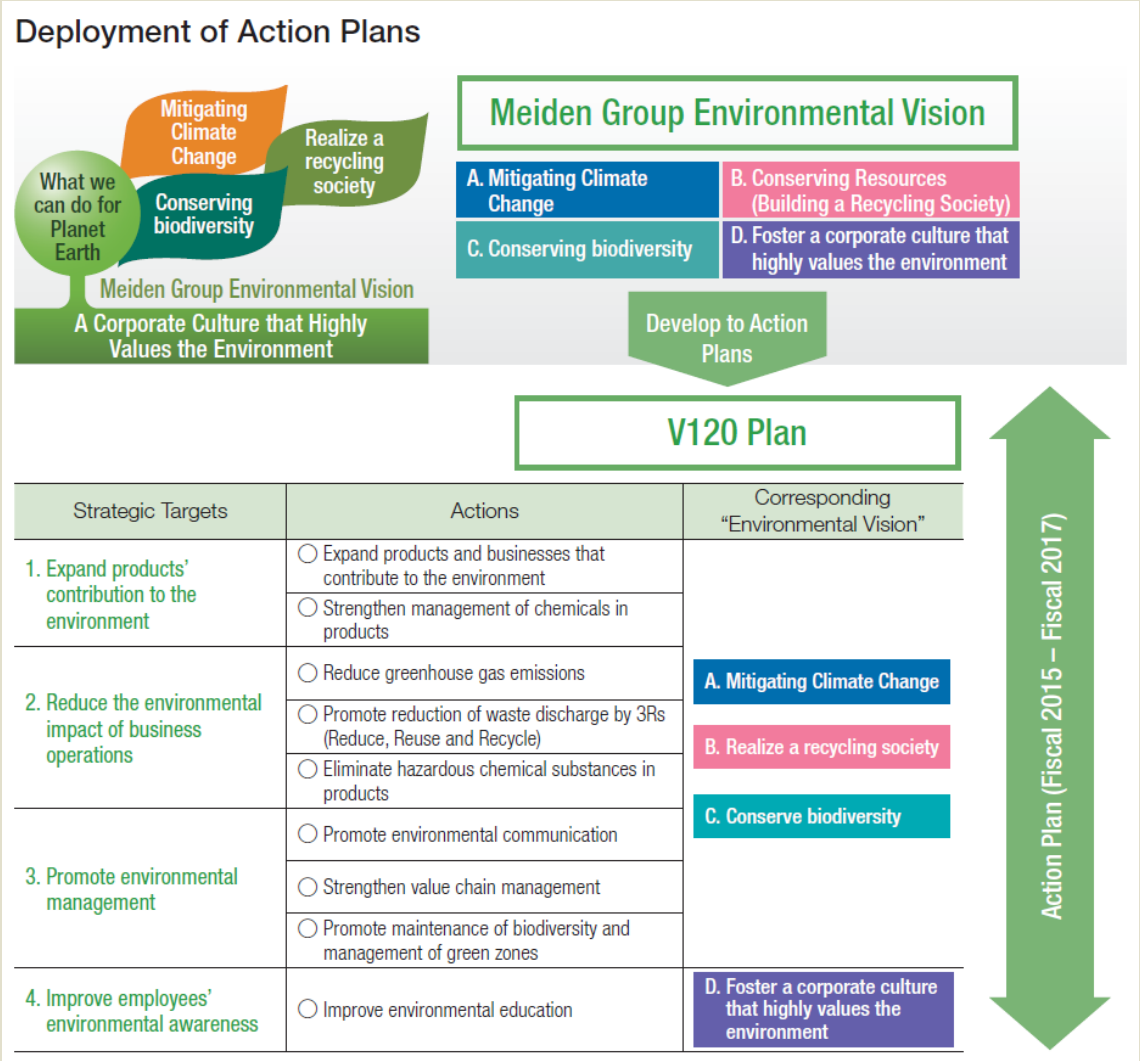
● Content of activity: Implementation of environmental education on biodiversity using e-learning system

At MEIDENSHA CO., LTD., environmental education using the e-learning system is implemented by establishing individual themes once every six months from FY 2014. Among them, it conducted environmental education on the theme of biodiversity in FY 2015. It was implemented for all employees including affiliated companies, 95% attended.

The materials used in the e-learning system are created based on "Let's Study Biodiversity (LSB)" which is a tool for education and awareness on biodiversity issued by four electric and electronic industry associations. Since the LSB is more than 50 pages of materials, e-learning materials are composed of about 5 slides which can be compared with the activity within the company after commentary on biodiversity which extracted the important part.

As a result of e-learning, in addition to having led to awareness of employees who did not know about biodiversity at all, it led to an understanding of internal activities such as nature observation sessions that had been carried out before e-learning .

MEIDENSHA CO., LTD ., is also working on promoting acquisition of eco certification as an activity of environmental awareness improvement, and by implementing e-learning, it was effective for increasing the



number of candidates and the number of candidates.

Source: Meidensha website（http://www.meidensha.co.jp/csr/csr_07/index.html）

6. Collaboration/ Communication with External Stakeholders

- **Interest in information disclosure and environmental reports is increasing, and it is important to communicate smoothly with external stakeholders by proceeding with disclosure of information on biodiversity.**
- **By strengthening cooperation with diverse entities in activity and social contribution activities in the main business, it is expected that mutual understanding on the conservation of biodiversity and activity on sustainable use will deepen.**

Idea

In order to win the trust of society by conducting activities that take biodiversity into account, business entities need to disclose information on environment themselves and communicate with stakeholders activly from the viewpoint of social accountability and demand for provision of information with stakeholders. In addition, communication such as information sharing and information disclosure may lead to opportunities to consolidate opinions and gain support from external organizations to make activity more effective. For this reason, it is important to ensure smooth communication with external stakeholders by adding biodiversity items to the environmental report. It is also important that cooperation with external stakeholders will be widely conducted not only in social contribution activities but also in core business through methods such as obtaining participation by local residents in development projects and holding site management.

Furthermore, based on the long-term perspective of biodiversity conservation and sustainable use activities, it is also important to work in cooperation with local residents through social contribution activities. For example, environmental education for local residents is one of means of communication, and it also leads to raising employee awareness about the environment. At this time, it is conceivable to clarify the purpose of activity and to examine the influence and effect of the activity on biodiversity. It is expected that you should flexibly utilize the technical and economic capabilities possessed by business entities and consider contributions in various forms.

Such involvement with external stakeholders may offer various merits such as obtaining external points and tips that contribute to innovation in the core business, corporate value improvement, sustainable management, etc.

Practical Tips

You should promote cooperation, communication and disclosure of information with various external stakeholders, from the planning stage of activities to implementation. You should promote two-way communication such as exchange of opinions with NGOs/NPOs and researchers using various interfaces including environmental reports. With this attitude, trusting relationships with stakeholders will be enhanced, and it becomes also possible to acquire information and ideas that are difficult to obtain with internal stakeholders alone.

In cooperation with NGOs/NPOs, you should promote cooperation in a long-term perspective aiming that business entities and NGOs/NPOs grow together. Collaboration with NGOs/NPOs may result in PR activities of business entities, which may lead to an improvement of the environmental images with business entities.

It is effective to utilize collaboration with regional education/research institutions, experts, etc. in relation to the formulation of strategies on biodiversity in social contribution activities and planning and implementation of monitoring. In addition, you can utilize services such as matching with NPOs and introducing experts at the Environmental Partnership Offices (EPO) in each region and Center for Regional Collaborative Conservation Activities of local governments (see next page).

Example of external stakeholders

- Government
- Local public entities (providing regional biodiversity information, arranging coordination among various entities)
- NGO/NPO (Hearing opinions on the impact of business entities' activities on biodiversity, collaboration in policy planning/social contribution activities)
- Local residents (cooperation in social contribution activities)
- Education and research institutions (universities, museums, children/primary education) (Providing information including scientific knowledge and ecological traditional culture of

local communities, conducting surveys on regional ecosystems and community systems, conducting environmental education utilizing corporate greenery)

- International organization
- Correspondent business entities、other business entities、different industries

Introduction of partner organization

○ Global Environment Outreach Centre (GEOC), Environment Partnership Office (EPO)

"Global Environment Outreach Centre" (GEOC) opened for the purpose of promoting environmental partnership by diverse entities such as NPOs, enterprises and administrative authorities. In order to realize a sustainable society, GEOC has been making various partnerships such as environmental/social business, collaboration activity with NPOs/local governments and support of ESD (Environmental education for Sustainable Development) program. In addition, the GEOC is sharing information, know-how and networks on environment, NPO and partnerships with regional Environment Partnership Offices (EPOs) that were established in eight regions in coorperation with NPO in each region (EPO Hokkaido, EPO Tohoku, Kanto EPO, EPO Central, EPO Chubu, Kinki Environment Hall, EPO Chuokoroku, EPO Shikoku, EPO Kyushu).

（URL：http://www.geoc.jp/）

○Center for Regional Collaborative Conservation Activities

Local public entities endeavor to establish "Center for Regional Collaborative Conservation Activities" as a base for mediating collaboration and cooperation among various entities, providing necessary information and advising.

Center for Regional Collaborative Conservation Activities established by local public entities is located in 13 locations nationwide (Hokkaido, Aomori, Tochigi, Oyama, Chiba, Nagano, Aichi, Nagoya, Aichi prefecture, Hyogo prefecture, Shiga prefecture, Osaka Prefecture Sakai City, Nara Prefecture Kashihara City, Takatori Town · Asuka Village, Tokushima Prefecture, Ehime Prefecture). (As of September 2017)

（URL：http://www.biodic.go.jp/biodiversity/about/renkeisokushin/_centre/）

An example of activities by business entities

●Information	Company name	Project Linking Life with One Another
	Participants	11 companies cooperation established in Chita Peninsula industrial area, Aichi prefecture, Chita city, Tokai city, local residents, university students, NPO

●Content of activity: Collaborating for conservation of biodiversity in company's green spaces

"Project Linking Life with One Another" has been conducted with the aim of improving biodiversity and fostering the next generation's leaders in the company's (factory) green area located in the coastal industrial area of Chita Peninsula, Aichi Prefecture. In order to improve the biodiversity of the consecutive green spaces , this project has launched by coordinating eleven companies that own the green zones and various stakeholders. They were, local university students, administrations such as Aichi prefecture, Chita city and Tokai city, local residents, NPO and experts to regenerate the local Satoyama ecosystem. They are challenging in forest management, creating habitat connection such as small ponds to build an ecological networks. As an achievement, Japanese fire fox came back after a long absence in the surrounding area.

In addition, as an antenna that transmits biodiversity activity widely and quickly, they are transmitting information through a variety of media such as original free papers, events and websites that students interview and edit. By doing this, it is effective not only to speedily and promptly promote the project, but also to support young people's growth through coverage and manuscript writing. In addition, this case is positioned as "new public support project (Cabinet Office)" and "ecosystem network formation model project (Aichi prefecture)".

Source: ecoReco earth（http://ecoreco.net/）

An example of activities by business entities

●Information	Company name	Sompo Japan Nipponkoa Insurance Inc.
	Business contents	Non-life insurance business
	Number of employees	25,822

● Contents of activity: Environmental conservation activities through SAVE JAPAN project

Sompo Japan Nipponkoa Insurance initiated the "SAVE JAPAN Project" nationwide to cooperate with local environmental groups, NPO support centers, and Japan NPO centers to preserve rare species. This project aims at "creating an environment where living things can live" throughout the country, and conducts civic participatory outdoor events featuring cooperation with stakeholders such as NPOs/NGOs. We held 647 events nationwide from the start of 2011 until FY 2016, with 32,175 participants.
Concerning the conservation of various scarce organisms in each region, we have been conducting conservation activities of over 100 kinds of scarce organisms such as Calyeta tsutobo, Luciola cruciata, Butastur indicus, Fuderindou and Dollarbird.

Source: SAVE JAPAN Project website（http://savejapan-pj.net/）

An example of activities by business entities

●Information	Company name	Palsystem Tokyo Consumers' Co-operative Union
	Business contents	Delivery service, welfare service, lifestyle services, etc.
	Number of members (Union members)	475,240 (as of the end of September 2017)

● The content of activity: Promotion and awareness-raising activities for biodiversity conservation

As for one of the activities for biodiversity conservation, the procurement of raw materials has many subjects to be considered and it is important to tackle with it in the long term. On the other hand, members' activities for environmental preservation are also important, so we promote dissemination and awareness-raising activities through experiences of seeing and touching living things like following.

① Living Creature Survey (collaborative project between Chuo University, the University of Tokyo and Palsystem Tokyo)

As the monitoring survey of citizen participation, since 2009, we have researched the distribution of butterflies and the relationship between butterflies and climate, environment and people. The survey results have been stored in a database, and a booklet named "Guidebook of Butterflies in Tokyo" has also been published, which were distributed to governments, libraries, universities and so on. There are more than 35,492 (cumulative in the end of March, 2016) data with photographs taken by more than 924 researchers, and our database has gained praise in the academic field.

② The activity for eradication of "invasive alien species"

We cooperate with some local organizations to eliminate invasive species, and our activity ~~that~~ contributes to the conservation of the local ecosystem and the species endemic to Japan.

③ Protecting the greenery of Tokyo

We visit green spaces within Tokyo to observe current situation and learn history of each space.

Source: Co-op Palsystem Tokyo website（http://www.palsystem-tokyo.coop/work/eco/biodiversity/）

An example of activities by business entities

●Information	Company name	Mitsui Sumitomo Insurance Co., Ltd.
	Business contents	Property and casualty insurance business and others
	Number of employees	14,650

●Content of activity: Holding symposium named 'Story of ecology told by companies'

The symposium organized by Mitsui Sumitomo Insurance(MSI) ' "The Story of Biology Told by Companies" has been held once a year since 2007 for corporate staffs as an enlightenment for companies in approaching biodiversity.

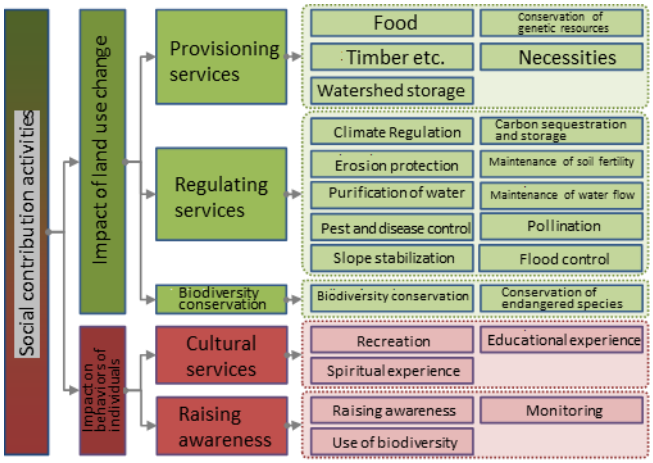
And this symposium has been held with the special cooperation of JBIB (Japan Business Initiative for Biodiversity) and MS&AD InterRisk Research & Consulting.

MSI has been supporting the JBIB's activities as the chair company since its establishment.

"The Story of Biology Told by Companies Part 10,Corporate initiatives for the biodiversity conservation toward the sustainable future –- from COP 13 to 2020 and looking towards 2030 -" was held on March 7. The keynote lecture in this symposium was about initiatives for biodiversity conservation toward 2020 which was the year of the Tokyo Olympics and Paralympic Games and then the target year for Aichi Biodiversity Targets, and toward 2030 which was the target year for SDGs. In addition, panel discussions about several themes in which corporation was highly interested, including natural capital, green economy and green resilience was carried out.

Source: Mitsui Sumitomo Insurance Group（http://www.ms-ins.com/company/csr/environment/maintenance/symposium.html）

[Reference] Economic evaluation of corporate biodiversity conservation activities



Regarding corporate biodiversity conservation activities, we would like to quantitatively evaluate the impact of those activities on society, and to utilize the results for internal decision-making and improvement of activities as well as for communication with external stakeholders.

The Ministry of the Environment has tried economically evaluating corporate biodiversity conservation activities from fiscal 2016 and has accumulated cases to improve the method.

In this trial evaluation, we focus on two kinds of impact: "impact of land use change" and " of changing the behavior of people" and use existing domestic public project evaluations and social impact evaluations that are progressing in Europe and the United States. Using the basic unit of the economic evaluation value based on the existing literature etc., the benefits that each brings (right side of figure) are multiplied by the area, the number, the number of people etc. per activity. In this way, the impact of the activity is converted into yen. Trial evaluations are introduces below:

Through these evaluations, it is expected to visualize the contribution amount of social contribution activities which is difficult to grasp quantitatively, promote understanding inside and outside the company, and lead continuation and revitalization of activities.

However, emphasizing only these evaluation results can lead to misunderstanding that the company is pretending to be environmentally friendly. It is also important to emphasize its core business (meaning the entire business activities including supply chain) and to understand the dependence and impact on biodiversity of the whole business including the core business (see Part 3, Chapter 1, 2.).

Case 1: A case study focusing on communication between external stakeholders (consumers/neighbors) and the company

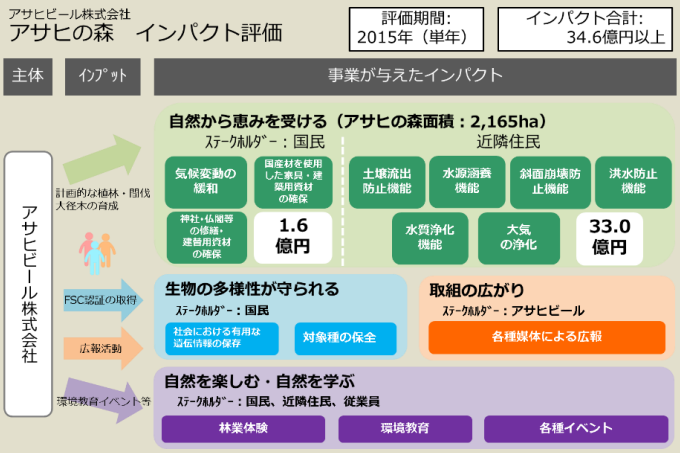
【Project Summary】

・Proper management of the company owned forest, the "Asahi Forest" (planned afforestation and thinning, cultivation of large-diameter trees etc.)

・Acquisition of FSC certification

・Conducting environmental education workshops for children and students

・Public relations Activities



評価の目的

ステークホルダーとのコミュニケーションを目的とした保全活動の価値の見える化

評価対象とした主なインパクト

自ら森林を保有・管理することによるステークホルダーにもたらす生態系サービスの便益

評価にあたっての留意事項

・生物多様性保全へのインパクトは適切な原単位がないことから金銭換算せず

・取組の広がりや自然を楽しむ・学ぶことによるインパクトは、貨幣換算を試みたが、全体のインパクトに占める割合が低いため結果は表示せず

・自然からの恵み（生態系サービス）の便益のみの評価額を示すこととなったが、これは本来のインパクトの一部であることから、「～円以上」と表記

【Results of economic evaluation】

・Benefits from nature such as climate change mitigation and soil erosion prevention effect ⇒ **More than 3.46 billion yen per year**

Source: Ministry of the Environment,, ASAHI BREWERIES, LTD

Case 2: A case study focusing on raising awareness of activities among employees and enhancing the activities

【Project Summary】

・Ex situ conservation: Transplanting and cultivating daylilies (*Hemerocallis littorea*) on the factory ground

・Habitat restoration: Transplanting into their native habitat (82 stocks in 2015, *ca.*100 stocks in 2016)

・Public Relations Activity

評価の目的

活動の価値を伝えることで、社員により前向きに取り組んでもらい、さらに活動を活性化する

評価対象とした主なインパクト

ハマカンゾウの保全活動を通した社員への環境教育や自然を楽しむ/学ぶことによるインパクト

評価にあたっての留意事項

・生物多様性保全へのインパクトは適切な原単位がないことから貨幣換算はせず、育成し、返還した株数という定量的な結果を表記

・従業員による保全活動や新聞等へ掲載によるインパクトを加算

・２社による協同事業ではあるが、インパクトは按分して評価

・評価結果に用いた額は、本来のインパクトの一部であることから、「～円以上」と表記

【Results of economic evaluation】

・Benefits mainly from raising awareness ⇒ **More than 1.39 million yen**

Source: Ministry of the Environment, Dai Nippon Printing Co., Ltd.

(Note) The above is a trial evaluation. The Ministry of the Environment is promoting the development of this method, and we will consider it including disclosure of methods in the future.

7. Monitoring

- **Grasping the activity status appropriately is essential to make the PDCA cycle of the whole plan functional.**
- **It would be a good idea to incorporate it into another monitoring that has already been carried out, to utilize existing tools, and to devise measures to reduce burdens and to work on a continuous basis.**

Idea

It is important to periodically monitor and analyze the activity status of the company through periodic monitoring, evaluate the progress status and achievement level of the plan, and reflects it in the review of the plan as necessary in order to make the PDCA cycle of the whole plans functional.

In addition, there are various information, methods, timing, and frequency to be grasped according to the activity of each targeted business activity. For example, if you set "target ratio of certified materials in raw material procurement" as the target, it is effective to regularly check the situation at the production site of the raw materials as well as at contract time and purchase time. In the green area management, it is recommended that the status of growth of introduced plants, invasion of alien species, usage by animals such as insects and appearance of target species is checked at least once a year.

It is important that the results obtained by these monitoring are extracted in relation to the environmental image aimed at by business entities and reflected in subsequent plans.

In this way, it is important to monitor the PDCA cycle and make it content assuming progress confirmation, evaluation and review. Furthermore, it is also required to make regular efforts to disclose information, such as publishing the results of monitoring and evaluation in CSR reports and others.

Practical Tips

When monitoring, it will be easier if you arrange it so as the burden of business entities is reduced as much as possible. For example, you can conduct monitoring with ones that have already been carried out (CO2, waste related, etc.).

Please choose a method that can efficiently collect data using the existing forms of monitoring and questionnaire (paper base, web or system base).

Examples of typical management indicators used for monitoring*

- Ratio of certified raw materials handled in total raw material amount
- Number of developments of certified products, number of commercialization, target sales volume
- Number of participants in environmental education/workshops etc. for employees, and acquisition rate of environment-related qualification
- Number of planning/ number of times of cooperation with external stakeholders, number of participants in planning
- Number of organisms appearing in the possession (green area management), etc.

*) Keep in mind that monitoring indicators need to be set at the goal and planning stage

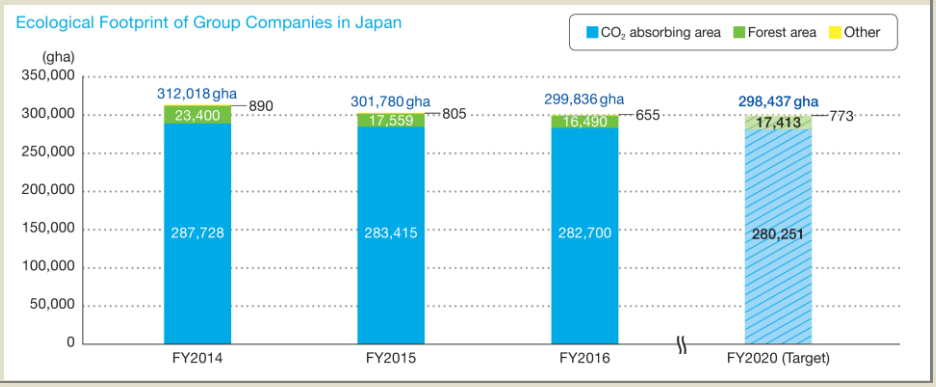
An example of activities by business entities

●Information	Company name	Daiichi Sankyo Co., Ltd.
	Business contents	R&D, manufacturing and sales of medical drugs
	Number of employees	*ca.* 15,000 (Daiichi Sankyo Group)

●Content of activity: Understanding the relationship between business activity and biodiversity by using "Ecological Footprint"

Daiichi Sankyo Corporation utilizes the "Map of Corporate Activities and Biodiversity" developed by the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB) to assess for each value chain the influence of business activities on biodiversity and the extent of dependence on ecosystem services. Then, we calculated and published the Ecological Footprint (EF) associated with the business activities of the Daiichi Sankyo Domestic Group as a comprehensive and quantitative indicator of environmental burdens, including biodiversity. The EF is an international measure of human impact on Earth's ecosystem using a unit named “gha (global hectare)”. The introduction of the EF enabled us to evaluate the environmental burden comprehensively. We assess the EF continuously to improve our activities by PCDA.

In calculating EF, we expanded the scope to make it more suitable for the Corporation, so that the environmental burden by business activities was able to be grasped from different angles, which then facilitated the process of problem recognition.



Source: Daiichi Sankyo Co., Ltd. website
（http://www.daiichisankyo.co.jp/corporate/csr/environment/biodiversity/index.html）

An example of activities by business entities

●Information	Company name	Co-op Natural Hyogo Consumers’ Co-operative
	Business contents	Supplying products to members, conducting programs improving lives of members and culture, undertaking initiatives relating to social themes of daily life etc.
	Number of employees	56

●Contents of activity: Survey of living creatures in rice field

Co-op Natural Hyogo has been undertaking an initiative called "Survey on living things in rice field" in Toyooka City since 2006. The Survey is aimed at deepening understanding of both farmers and co-op members about the multifaceted functions of rice field, especially about its role as a place where living things grow. Through a continuous survey in rice field by stakeholders, the relationship between living creatures and agriculture in rice field will be realized. In addition, the project is approved by the UNDB-J as one of its Coordinated Projects under the title “Decade-long Project to Improve Biodiversity of Rice Field” due to following aspects: (1) cooperation among various entities, (2) significance of the activity and (3) its PR effect.

Source: Japan Committee for United Nations Decade on Biodiversity (http://undb.jp/); Co-op Natural Hyogo Consumers’ Co-operative Website（http://www.shizenha.ne.jp/hyogo/）

8. Reviewing Plan

- **A robust PDCA cycle will be built by evaluating the activity status based on monitoring results and reflecting and incorporating the results into the PDCA cycle.**
- **You are expected to broaden the scope of your action and involvement of supply chains step by step.**

Idea

The basic idea conforms to the "4. Drafting plan". In reviewing the plan based on the monitoring results, you should make an evaluation, using the status of the relationship between biodiversity and the business as a benchmark. It is basically a process of spiraling up.

Ideally, you start with easy-to-work issues and contents, then, gradually expand the scope of the activity, involving the whole supply chains to disseminate activities of your company. Let's promote your biodiversity activity aiming at building even stronger PDCA cycle.

When implementing the activity, it is important that the promotion and progress management systems and the PDCA cycle are in place. There is also a way to promote activity on conservation and sustainable use of biodiversity by utilizing existing environmental management systems and environmental committees. In addition, it is effective to publish your company's plan and activity status, for that can be a PR of your companies and the industry.

Practical Tips

Based on the monitoring results and the state of the latest related bills and systems, it is desirable to check the contents and to review the process and target level as necessary. When reviewing, seek advice to experts as much as possible and try to assure accountability as well as appropriateness of changed contents.

※ For the activity cases, refer to "4. Drafting plan" (p. 53 ~).

Part 4 Activities of each business

In this part, we introduce the activities of each business introduced in Part 2. Check the outcome you obtained for the relationship between business activities and biodiversity, and refer to appropriate items.

The basic structure of each item is as follows:

①Subject name	Activity name
②Key message	The key messages such as important point of view in advancing activity and merit for business entities.
③Idea	Introduce ideas, the important point of view when advancing activity, and the way we aim. Particularly important parts are underlined.
④Example of activities expected from business entities	Here are examples of specific activities expected. Please refer to the end and promote activity according to the business contents and scale of each business entities.
⑤Examples	Examples related to above mentioned activities by business entities or organizations

①Subject name

②Key message

③Idea

④Example of activities expected from business entites

⑤Example

1. Raw Material Procurement

- Since biodiversity has often been affected at raw material production site, conservation effort has already been mandated in many business deals. Actions in the area of raw material procurement are considered as very important.
- Activities related to raw material procurement will contribute not only to preservation of biodiversity but also to cost reduction and improvement of business continuity.
- "Vertical collaboration" with business partners as well as in-house activities, and "horizental collaboration" within industries are effective.

Idea

In business entities who procure and use raw materials, it may be very difficult to grasp the production location depending on the length and complexity of the supply chain. Yet, through procurement of raw materials such as biological resources (wood, fishery products, agricultural crops), activities at the place of production (land use, use of biological resources) have a great influence on biodiversity. As for the direction of activity, in addition to "reduction of usage", "promotion of handling of certified products", "incorporation of consideration of biodiversity into procurement standards of raw material procurement Guidelines", "Questionnaire to customers and checklist" should be utilized to ensure that biodiversity-conscious raw materials are procured at each stage in the supply chain.

Activities based on individual business entities are important when implementing such activities, but maintaining cooperation with suppliers who provide raw materials is more important. It is desirable that the amount of raw materials handled with consideration for biodiversity be increased throughout the country, and cross-cutting cooperation (promoting activity within the same industry, etc.).

As mentioned above, you need to have your partners understand and recognize the necessity of activity related to raw material procurement. You are required to ask consideration to suppliers as necessary basis. But you need to be careful not to commit "abuse of superior position" under the Antimonopoly Act.

[Example of activity expected for business entities]

- You should try to reduce resource usage so that resources can be used within a sustainable range.
- You need to incorporate consideration for product diversity into procurement policies and procurement standards for raw materials.
  - (A) Confirm compliance with laws including local laws and regulations (legality).
  - (B) Confirm that there is no land use in the area considered to have high conservation value of biodiversity.
  - (C) Confirm that conservation of biodiversity is considered at the production stage of raw materials.
  - (D) Increase handling volume of certified products considering biodiversity.
- Business entities at each stage in the supply chain procure raw materials that take into consideration the diversity of raw materials and ensure traceability due to questionnaires to business partners and the use of check lists.
- You need to cooperate with and raise awareness of supply chain so far as your company has impact.

○ The Guide for Promotion of Raw Material Procurement for Business in Consideration of Biodiversity (JBIB)

The Guide for Promotion of Raw Material Procurement for Business in Consideration of Biodiversity is a practical guide developed by JBIB members for business to understand and manage risks in the raw material procurement process. It is also aimed to help a company to promote responsible procurement within the company.

Source : JBIB website : http://jbib.org/about/pdf/

An example of activities by business organizations

●Information	Organization name	Japan Paper Association
	Business contents	Survey and research on paper and pulp manufacturing industry, collection and publication of statistical materials, membership exchange etc.
	Number of members	33 companies/5 organizations

●Content of activity: Formulation of the Action Guidelines on conservation of biodiversity of Japan Paper Association

Paper industry is an industry that supplies essential substances for human life called "paper" with the benefit of ecosystem services "wood", and it is obliged to actively engage in biodiversity conservation. Following this, Japan Paper Association established Action Guidelines on Biodiversity Conservation of Japan Paper Association" in 2014.

The Action Guidelines, after grasping the relationship between the Aichi Target and the industry's activities, include (1) corporate structure, (2) sustainable forest management (active acquisition of forest certification systems such as FSC, PEFC, SGEC etc.), (3) responsible procurement of raw materials (securing traceability of raw materials, etc.), (4) environmental contribution by CSR, and (5) strengthening of external cooperation.

「生物多様性保全に関する日本製紙連合自行動指針」と「戦略計画2011-2020」に対する取り組み「愛知目標」の関係

○：自社に直接関係する △：間接的に関係する		1. 企業体制	2. 持続可能な森林経営 (Sustainable Forest Management)	3. 責任ある調達 (Sustainable Procurement)	4. 社会貢献活動 (Social Contributions as CSR)	5. 対外的交渉 (Social Contributions as CSR)
戦略目標A 生物多様性の損失を少なくする	目標1	人々がどれ程生物多様性の価値と行動を認識するか	○		○	○
	目標4	すべての関係者が持続可能な生産・消費のための計画を実施する	△	○	○	
戦略目標B 直接的な圧力を減らす	目標5	森林を含む自然生息地の損失が少なくとも半減、可能な限りに近いスピードで低下、劣化・分断が顕著に減少する	△	○	△	○

Source : Japan Paper Association website (https://www.jpa.or.jp/environature/index.html)

Example of activities from business organizations

●Information	Organization name	Japan Prefabricated Construction Suppliers and Manufacturers Association
	Business contents	PR activities, technology development and research, promoting interaction among members etc.
	Number of members	226 organizations

●Content of activity : Environmental Action Plan "Eco Action 2020" (revised in 2016).

Based on the current situation of environmental problems and the expectation of the housing industry, we revised "Eco Action 2020" formulated in 2012. The Action Plan has following five policies: (1) to build a low-carbon society, (2) to build a recycling-oriented society, (3) to develop a society of harmonious symbiosis, (4) to reduce chemical substances, and (5) to form good townscape.

In the revised edition, "Declaration on Sustainable Timber Procurement" was adopted and making thorough use of wood which considers forest ecosystem conservation was added to policies for global biodiversity conservation. Concrete targets include "securing traceability of timber", "setting criteria for selecting suppliers" and "conducting periodic monitoring", and each member company should set voluntary goals and make effort to achieve them.

持続可能な木材調達に関する宣言

会員各社は国産活動に於ける森林環境の保護に貢献するため、持続可能な木材の調達を推進します。

1. サプライチェーン・マネジメントの強化に努めます。
- サプライヤーと協力し、トレーサビリティの確保に努めます。
- 調達先の選定基準を設け、適正な木材調達を進めます。
- 定期的なモニタリングを実施し、適切な対応に努めます。

2. 持続可能な利用における森林生態系への配慮された木材調達を推進します。
- 生態系の保全や適切に行うため森林すべてが、天然林の大規模伐採ではない木材の調達を進めます。
- 熱帯の低地原生林の中の森林からの木材の調達を進めます。
- 貴重・重要な生態系や種への配慮が行われている木材の調達を進めます。
- 森林と農業に対する自然的な公益、物質的な利益の利用を進めます。

3. 社会性の確保された木材調達を推進します。
- 労働者の適切な労働環境を整備されていることを確認します。
- 地域社会の公的な活動やボランティア活動に協力します。

4. 合法性が確認された木材の調達を推進します。
- 森林関連法の明らかな違反や違反が確認された木材を調達します。

Source : Japan Prefabricated Construction Suppliers and Manufacturers Association Website (http://www.purekyo.or.jp/bukai/jyutakukojo/eco-action_2018.pdf)

1. Raw Material Procurement

- ❖ **Since biodiversity has often been affected at raw material production site, conservation effort has already been mandated in many business deals. Actions in the area of raw material procurement are considered as very important.**
- ❖ **Activities related to raw material procurement will contribute not only to preservation of biodiversity but also to cost reduction and improvement of business continuity.**
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Idea

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As mentioned above, you need to have your partners understand and recognize the necessity of activity related to raw material procurement. You are required to ask consideration to suppliers as necessary basis. But you need to be careful not to commit "abuse of superior position" under the Antimonopoly Act.

[Example of activity expected for business entities]

- ➢ You should try to reduce resource usage so that resources can be used within a sustainable range.
- ➢ You need to incorporate consideration for product diversity into procurement policies and procurement standards for raw materials.
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  - (D) Increase handling volume of certified products considering biodiversity
- ➢ Business entities at each stage in the supply chain procure raw materials that take into consideration the diversity of raw materials and ensure traceability due to questionnaires to business partners and the use of check lists.
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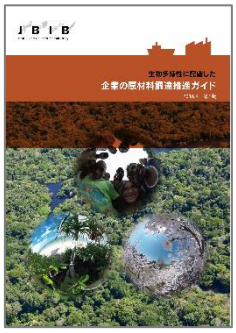


Source: JBIB website：http://jbib.org/about/output/

An example of activities by business entities

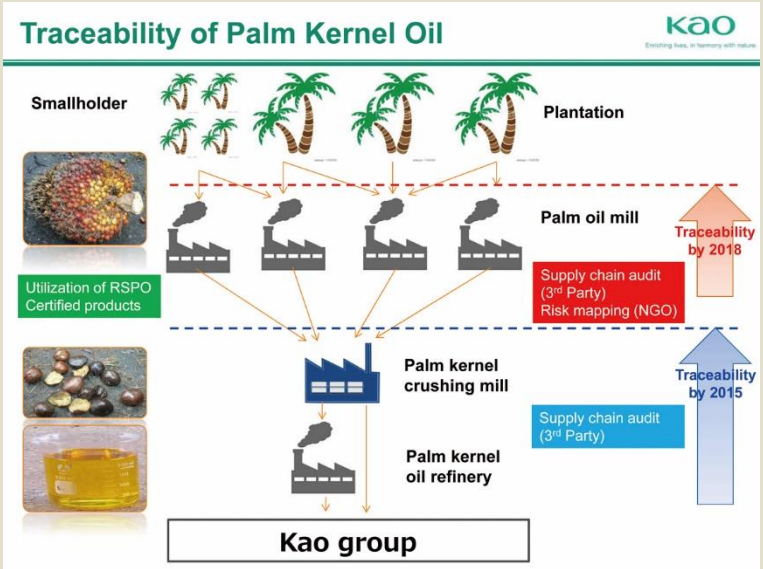
●Information	Company name	Kao Corporation
	Business contents	Manufacturing of cosmetics, skin care products, health function drinks, detergents for clothing, and oils etc.
	Number of employees	33,195 (consolidated)

●Content of activity: Sustainable procurement of natural capital

Kao Corporation has formulated the "Kao sustainability statement" The Statement defines the ways in which Kao aims to contribute to a sustainable society through their business activities.

They are using palm oil and pulp wood for their products (cosmetics, detergents for clothing, baby goods, etc.). They developed and improved "Guidelines for Supplier's Assessment" and "Guidelines for Sustainable Procurement of Raw Material " to promote their sustainable resource utilization, considering biodiversity, human rights, etc.

In these Guidelines, they are trying to strengthen the effectiveness of the activity by clarifying the scope of the target on raw material procurement and consideration items.



Source: Kao Corporation website（https://www.kao.com/jp/）

Kao Corporation Covering story with companies Part 10 Biodiversity for corporate fulfillment for sustainable future Preservation materials

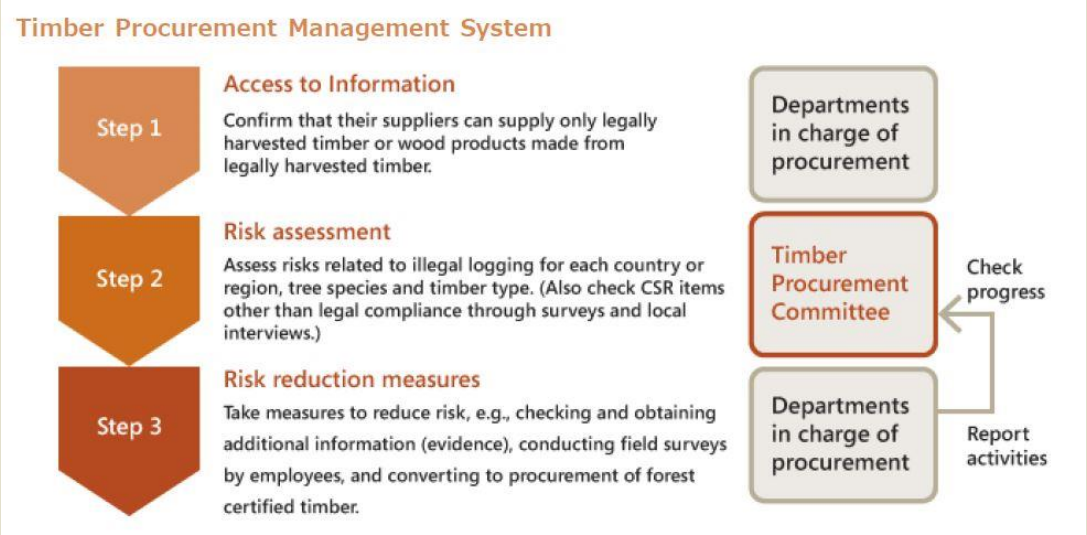
An example of activities by business entities

●Information	Company name	Sumitomo Forestry Co., Ltd.
	Business contents	Resource environment business, timber building materials business, housing business
	Number of employees	4,417 (Non-consolidated as of March 31, 2016)

●Content of activity: Management system in timber procurement

Sumitomo Forestry Group conducts due diligence to ensure sustainable timber procurement based on "Sumitomo Forestry Group Procurement Policy." The company has established a "timber procurement committee" composed of persons responsible for timber procurement at each division, and the due diligence includes confirmation of legality of timber, consideration to human rights, work safety, biodiversity, and local communities. Prior to the Committee, the Group also collects necessary information for products to be procured through questionnaire survey to vendors and local hearings.

In addition that the Sumitomo Forestry Group does not handle illegal timber, it also promotes the forest certification system and the use of wood and wood products that are afforestation origin, recycled wood origin, and domestic timber origin. The Group contributes to the realization of a sustainable and prosperous society through the promotion of timber use.



<Timber Procurement Due Dilligence>

Source: Sumitomo Forestry Co., Ltd. website（http://sfc.jp/information/society/social/business_partner/action.html）

An example of activities by business organizations

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	Business contents	Survey and research on paper and pulp manufacturing industry, collection and publication of statistical materials, membership exchange etc.
	Number of members	33 companies 6 organizations

●Content of activity: Formulation of the Action Guidelines on conservation of biodiversity of Japan Paper Association

Paper industry is an industry that supplies essential substances for human life called "paper" with the benefit of ecosystem services "wood", and it is obliged to actively engage in biodiversity conservation. Following this, Japan Paper Association established Action Guidelines on Biodiversity Conservation of Japan Paper Association" in 2014.
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「生物多様性保全に関する日本製紙連合会行動指針」と「戦略計画2011-2020」における個別目標「愛知目標」の関係

○ ： 直接的に貢献 △ ： 間接的に貢献			1. 企業体制	2. 持続可能な森林経営（Sustainable Forest Management）	3. 責任ある原料調達（Sustainable Procurement）	4. 社会的な環境貢献活動（Social Contributions as CSR）	5. 対外的な連携の強化
戦略目標A 主流化による根本原因への対処	目標1	人々が生物多様性の価値と行動を認識する	○			○	○
	目標4	すべての関係者が持続可能な生産・消費のための計画を実施する	△	○	○		
戦略目標B 直接的な圧力の減少、持続可能な利用の促進	目標5	森林を含む自然生息地の損失が少なくとも半減、可能な場合にはゼロに近づき、劣化・分断が顕著に減少する	△	○	△	○	

Source: Japan Paper Association website（https://www.jpa.gr.jp/env/creature/index.html）

Example of activities from business organizations

●Information	Organization name	Japan Prefabricated Construction Suppliers and Manufacturers Association
	Business contents	PR activities, technology development and research, promoting interaction among members etc.
	Number of members	226 organizations

●Content of activity： Environmental Action Plan “Eco Action 2020” (revised in 2016)

Based on the current situation of environmental problems and the expectation of the housing industry, we revised "Eco Action 2020" formulated in 2012. The Action Plan has following five policies: (1) to build a low-carbon society, (2) to build a recycling-oriented society, (3) to develop a society of harmonious symbiosis, (4) to reduce chemical substances, and (5) to form good townscape.

In the revised edition, **"Declaration on Sustainable Timber Procurement" was adopted** and **making thorough use of wood which considers forest ecosystem conservation** was added to policies for global biodiversity conservation. Concrete targets include "securing traceability of timber", "setting criteria for selecting suppliers" and "conducting periodic monitoring", and each member company should set voluntary goals and make effort to achieve them.

持続可能な木材調達に関する宣言

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1. サプライチェーン・マネジメントの強化に努めます。
・サプライヤーと協力し、トレーサビリティの確保に努めます。
・調達先の選定基準を設け、適正な木材調達を進めます。
・定期的なモニタリングを実施し、適切性の担保に努めます。

2. 持続可能な利用に向けた森林生態系への配慮がされた木材調達を推進します。
・生態系の保全や創出につながる植林であり、天然林の大規模伐採ではない木材の調達を進めます。
・持続可能な経営計画のある森林からの木材の調達を進めます。
・貴重・重要な生態系や種への配慮がされている木材の調達を進めます。
・森林生態系に対する負荷の少ない間伐材や再生材の利用を進めます。

3. 社会性の確保された木材調達を推進します。
・労働者の適切な労働環境が整備されていることを確認します。
・地域社会の伝統的知識や文化、経済の維持、貢献に努めます。

4. 合法性が確認された木材の調達を推進します。
・森林供給源が明らかで伐採権が確認された木材を調達します。

Source: Japan Prefabricated Construction Suppliers and Manufacturers Association Website
（http://www.purekyo.or.jp/bukai/jyutaku/pdf/eco-action_2016.pdf）

2. Use of Biological Resources

- **Inappropriate use of biological resources can lead to deterioration of the entire ecosystem.**
- **Confirm that the sites where biological resources are used locate not in critical areas for biodiversity, while avoiding use of alien species**
- **Active use of satoyama local village, if it is managed in an appropriate scope, may sometimes contribute to the improvement of ecosystem.**

Idea

Biological resources mean, for example, fishery resources, forest resources, agricultural products, etc. With regard to fishery and forest resources, excessive harvesting can lead to deterioration of specific species and ecosystem as a whole. In the past, there are cases in which species introduced as edible and pet-friendly purposes bred outdoors and imposed adverse effect on people's lives and ecosystems.

The impact on biodiversity sometimes jeopardize the society, the economy of the region, and traditional culture the, foundation of which was rooted on the biological resources.

In Japan, as indicated as the second crisis in the "The National Biodiversity Strategy (2012-2020)", the number of species has declined and the biodiversity has lost as a result of exploiting less biological resources in Satochisatoyama than before. In September 2016, to conserve and revitalize "forest", "village", "river", and "sea" that symbolize natural resources, to connect people involved in each resource, and to live in urban areas aiming at conserving and supporting people related to it, the “Connecting Forest, Village, Village, River and Ocean”[23] was published. We expect many business entities to actively participate in building a framework for conservation activities and to strive for realization of biodiversity conscious society.

The Nagoya Protocol has already been taken effect since August 2017, which is to promote the fair and equitable sharing (ABS) of the opportunity to acquire genetic resources and the benefits resulting from its use in Japan. It is necessary to acquire and use genetic resources in accordance with the rules of the providing country.

【Example of activity expected from business entities】

- Avoid using biological resources in the areas relevant to conservation of biodiversity.
- Manage the usage of biological resources to avoid running up
- Consider biodiversity by utilizing the certification system on sustainable forestry and fishery.
- Avoid the use of alien species in pollinator mediation and pest control, and appropriately manage so as not to adversely affect the outside.

[23] "Recommendation to sustain people and their livelihoods with Mori, Sato, Kawa, Umi“ (by Ministry of the Environment "Sustaining People and their Livelihoods with Mori, Sato, Kawa, Umi" project team, 2016)

An example of activities by business entities

●Information	Union name	Project H Promotion Council
	Business contents	Protection and cultivation of local bees, production and sales of honey
	Number of members	38

Content of activity: creating an economic cycle utilizing regional resources

In Shiiba village located in Miyazaki Prefecture, Project H (= Honey) Promotion Council has been protecting local honey bees and also engaged in production and sales of honey of Japanese Bees. Traditionally, beekeeping had been carried out individually in Shiiba village, but the Council decided to integrate those activities and commercialize beekeeping, seeking a better future of the Village. The Council set a strict standard for quality of its local honey and sell it as branded one.

The Project H has been so active that 1,600 bottles of honey (250 gram each) have ever been shipped and revitalizing local economy.

Source: Shiiba village website（http://www.vill.shiiba.miyazaki.jp/）

An example of activities by business entities

●Information	Company name	Kaito Yumin Club（OZ Group）
	Business contents	Eco Tour Planning, Tourist Information Service, Regional Design Consulting, Human Resource Development Train Planning
	Number of staffs	5

●Content of activity: Sustainable tourism utilizing regional resources

We are promoting eco-tourism in Toba-shi located in Mie Prefecture with the aim of realizing the “Hapiness”, meaning the happiness of our guests, nature, islanders and guides. Our policy is "to love local nature and community and to contribute to sustainable regional development through sustainable tourism".

As to natural environment of the region, we developed our own rules for utilizing fields, such as island life rules and observation rules for rocky beaches, and guidelines for training guides. Besides, we are focusing on natural environmental education and human resource development, such as the child park ranger training project.

To support local economy, we choose local food for lunch of our tours, for example, while cooperating with fishermen and fishermen's organization for ship transportation and fishing experience. These activity also lead to branding of the region and local products. In addition, we are engaged in a forest thinning project in cooperation with Toba Eco Tourism Promotion Council and also made a tour including utilization of unused fish of Kaito Yumin Club. In short, we try to create a new circulation of regional economy through conducting various problem-solving projects.

Source) Kaio Yumin Club Website (http://oz-group.jp/index.html)

An example of activities by business entities

●Information	Company name	Kirin Holdings Co., Ltd.
	Business contents	Japanese Alcoholic and Non-alcoholic Beverages, Overseas Alcoholic and Non-alcoholic Beverages, PHARMACEUTICALS AND BIO-CHEMICALS
	Number of employees	39,733 (consolidated)

● Content of activity: Sustainable tea farm in Sri Lanka

The Kirin Holdings Co., Ltd set forth the Kirin Group's Long-Term Environment Vision for 2050, while reducing the environmental loads that the Kirin Groups generates through its value chain. The Group identified four target areas — conservation and sustainable use of biological resources and water resources and sustainable use of containers and packaging and Global warming, aiming at the "realization of society that is based on 100% recycling".

As for the use of biological resources, the Kirin Group set an attainment target saying "Work toward sustainable use of biological resources by 2050", and the Group has been engaging in the CSV Commitment, for example, to improving the sustainability of farms in Sri Lanka, the key producing area of the Kirin Group, and securing biodiversity in Japan's agricultural areas. To describe more about Sri Lanka tea farms, the Kirin Group has been helping growers in acquiring Rainforest Alliance Certification by providing funds for training, in order to raise the sustainability of the tea farms. By supporting tea grower in Sri Lanka to become Rainforest Alliance-certified, the Kirin Group contributes not only to the conservation of biodiversity and improving ability to adapt to the climate change, but also to improving the lives of the people who work on those farms.

The Kirin Group received the highest "King of Beasts Award" in WWF Japan's "Business & Diversity Katte-ni Award" given based on examinations performed by WWF Japan on initiatives regarding biodiversity taken by companies.

Source: Kirin Co., Ltd. website（http://www.kirin.co.jp/csv/eco/mission/material.html#pageSection1）

An example of activities by business entities

●Information	Company name	Sakata Seed Corporation
	Business contents	Production and sales of vegetable seeds, flower seeds, grass seeds, vegetable seedlings, flower seedlings, bulbs and agricultural/gardening materials. Publication of gardening literature. Research and development, contract seed production. Designing, management and contract of following constructions: landscaping, greenhouse, agricultural facilities.
	Number of employees	680

●Content of activity: Agreement on utilization of genetic resources of "Sanphenece Ⓡ" based on biodiversity treaty

Sakata Seed Corporation and the Indonesian government (Indonesian Agency for Agricultural Research and Development (IAARD)) have formally agreed on the utilization of indigenous genetic resources for the further development of SunPatiens®.

This agreement is based on the Convention on Biological Diversity (hereafter, CBD).

SunPatiens® was commercially launched in 2006, and has grown to be recognized worldwide as one of the best performing flowering annuals in its category, especially in Japan, Europe and North and South America. Part of the revenue generated from sales of the product is being allocated based on the agreement for Access and Benefit-Sharing for utilization of genetic resources (hereafter, ABS agreement). Sakata pays a share of the SunPatiens® royalty proceeds to the Indonesian government and, in addition, performs technology transfer as a non-monetary benefit sharing.

Source: Sakata Seet Corporation website（http://www.sakataseed.co.jp/corporate/news/20160328.html）

An example of activities by business entities

●Information	Entity	Mie Prefecture
	Registered business entities	42 business operators (dismantling/sales/processing etc.)

●Content of activity: Mie Gibier registration system

In recent years, the number of wildlife such as deer and boar has been increasing in inter-mountainous areas. The damage of the agriculture, forestry and fishery industry has become more severe and wider. Also, in the forest area, severe impacts on biodiversity such as declining of lower vegetation and tree damage are occurring. One of the measures to reduce the damage caused by wildlife is capture by hunting, but consideration and implementation of “Gibier“ (effective use as meat)" is being conducted in various places in order to utilize it as a resource after capturing .

In Mie prefecture, in order to offer safe and delicious wild venison and boar meat taken in the prefecture, "Mie Gibier" quality and hygiene management manual was formulated, advancing hygiene management and securement of high-quality meat. Also, business operators using wild venison and wild boar meat are registered as "Mie Gibier Registration System". As of October 6 2017, there are 104 facilities of 42 business operators. In this registration system, restaurants in the prefecture and enterprises such as MaxValu, Curry House CoCo Ichibanya, etc. are registered. It can be said that this is a case that contributes to conservation of biodiversity by utilizing the natural resources of the area called "Gibier" at the production processing stage of business activities.

<Mie GIbier Processed Foods>

Source: Ministry of Agriculture, Forestry and Fisheries website (http://www.maff.go.jp/), Mie Gibier website (https://www.miegibier.jp/gibier/index.html)

3. Production and Processing

- **There are some areas that have already made progress. Let's try to reduce the impact on biodiversity at the production and processing stage as much as possible.**
- **It is important that measures are taken not only at plants and factories, but also at each stage of the supply chain, "vertical collaboration" with business partners, and "horizontal collaboration" within industries are effective.**

Idea

Water pollution caused by wastewater from factories and other business sites may affect the life and growth of organisms in rivers and marine areas. In recent years, concern about the use of water accompanied by climate change and water pollution has been rising rapidly, and it is possible we face risks such as stop of operation due to shortage of water, rise in water price, dispute about water with the surrounding residents.

There are many unknown factors; that chemical substances may affect the ecosystem has been pointed out. In addition, light (such as night lighting) has been pointed out as having an effect on insects, plants and the like. Regarding agricultural crops, activities such as improper use of agricultural chemicals and fertilizers, maintenance of farmlands and waterways that prioritize economic efficiency and efficiency may affect biodiversity.

As for the direction of activity, taking countermeasures such as water intake, wastewater volume, water quality, and discharge of chemical substances at factories and workplaces is also important. However, proper measures to conserve biodiversity and fishery methods should be carried out at each stage of the supply chain production and processing considering. For this purpose, it is considered effective to utilize briefing sessions and training related to the certification system carried out by business entities organizations in cooperation with affiliated business organizations.

Regarding exhaust, wastewater from the workplace, local laws and regulations such as the 'Water Pollution Control Act' governs some aspects. Apart from whether or not you conform to these Guidelines, you need to abide by these waste water standards and others rules and regulations.

【Example of activity expected from business entities】

- Promote reduction and recycling of waste.
- Understand the impact of biodiversity on production and processing methods, including agricultural methods and fishing methods, and utilize resources in a sustainable manner.
- Understand the impact on biodiversity, confirm the type and quantity, measures to reduce water discharge, water quality, chemical substances
- In light, depending on the location, implement leakage light suppression and lighting seasons and time consideration.
- Handle or promote handling of products in consideration with biodiversity including certified products separately from others
- Strive to acquire certification by utilizing briefing sessions and training related to the certification system implemented by business organizations.

○ Corporate Water Management Guide to Conserve Biodiversity (JBIB)

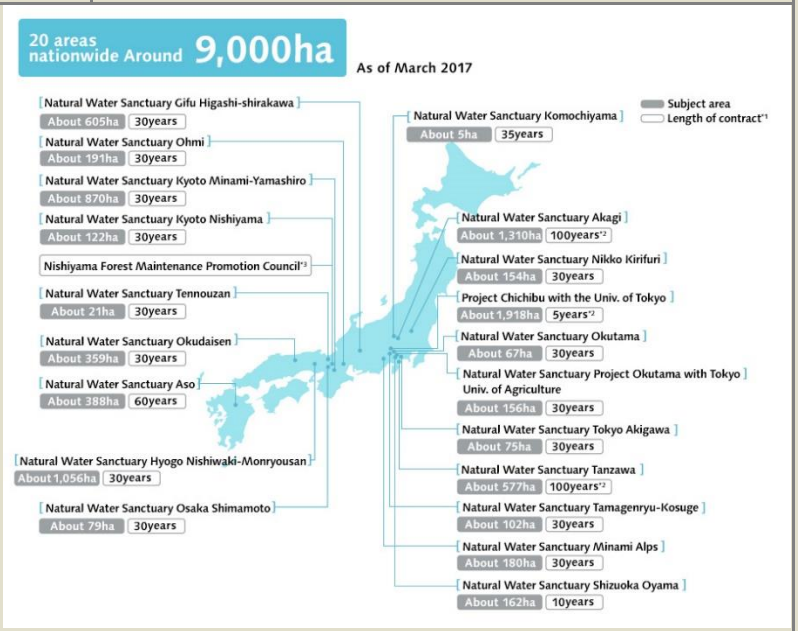
This brochure is a summary of studies on how companies can use water in a sustainable manner. It suggests to take into account new issues such as using water footprint to control water usage over the whole value chain and balancing water intake and drainage on a basin basis. Water neutrality which means zero impact on water resources is mentioned as a possible course of action. Reference cases are also introduced.

Source: JBIB website：http://jbib.org/about/output/

An example of activities by business entities

●Information	Company name	Suntory Holdings Limited
	Business contents	Alcoholic beverages, beverages/food business, health supplements etc.
	Number of employees	38,013 (Consolidated, as of December 31, 2016)

● Content of activity: Natural Water Sanctuary Projects



The Suntory Group uses a large amount of groundwater in the manufacturing of its products. To maintain the sustainability of that groundwater, since 2003, we have been signing medium- to long-term contracts that last decades with governmental bodies and with forest owners in each region where we operate. And we have been conducting activities aimed at preserving and recharging water through our Suntory Natural Water Sanctuaries.

Five targets of the Natural Water Sanctuary Projects are: (1) Forests with a great capacity for cultivating water resources, (2) Forests rich in biodiversity, (3) Forests able to withstand flooding and landslides, (4) Forests with great CO_2 absorption capabilities, (5) Beautiful forests where visitors can encounter nature in all its abundance.

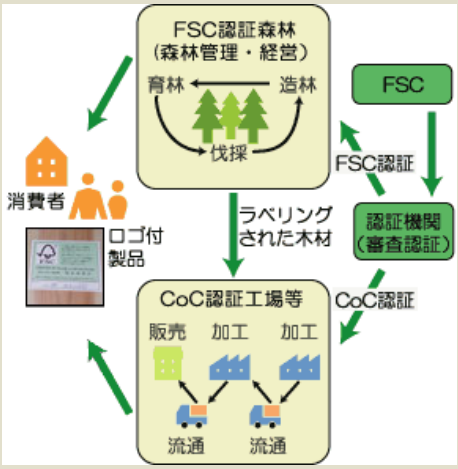
Suntory Beverage & Food Limited has been acknowledged as a CDP Water A List 2017 company after being highly regarded by the CDP (an international non-profit organization providing environmental information disclosure systems) due to company initiatives including its Preserving and Regenerating the Natural Environment initiative for sustainable water resource and activities serving to reduce water used at its plants under the initiative of Water Resource Cultivation.

Source: SUNTORY HOLDINGS LIMITED. Websit
（http://www.suntory.co.jp/company/csr/activity/environment/eco/forest/）

An example of activities by business entities

●Information	Company name	Hayami Forest
	Business contents	Forestry related business
	Number of employees	15

● Content of activity: Sustainable timber production and forest utilization



Hayami Forest aims to maintain a rich forest environment, contribute to global environment preservation for the survival of mankind, and aim for the stability of the local society, planting hinoki from the 1790s, sustainable circulation of the forestland it is using. In 2000, It acquired FSC® certification for the first time in Japan.

In Hayami Forest, (1) securing biodiversity (securing biodiversity by maintaining and cultivating appropriate underlying vegetation, securing aquatic organisms diversity by appropriate measures to prevent water pollution at mountain streams), (2) increasing land use efficiency, (3) Efficient use of wood, (4) prevention of soil erosion, (5) securing the soundness of forests (urgent afforestation of logging sites), (6) handling of chemicals, (7) response to forest damage, (8) preliminary survey of projects in the forest, (9) It uses forest other than those related to Hayami Forest as its environmental policy and it is doing sustainable forest management according to this

Source: Hayami Forest website（HTTP://WWW.RE-FOREST.COM/HAYAMI/FSC/INDEX.HTML）

An example of activities by business entities

●Information	Company name	Miyagi Prefecture Fishery Cooperative Association
	Business contents	Credit business (savings and loans, etc.), mutual aid business, economic business (purchasing · sales etc.)
	Number of employees	9,537

●Content of activity: Sustainable aquaculture fishery

The Miyagi Prefecture Fishery Cooperative Association has traditionally cultivated oysters. Most of those oyster shelves and fishing boats were washed away due to the 2011 Great East Japan Earthquake and Tsunami. While building back the operations, it was decided to improve the method of cultivating oyster through reducing the stocking density by one third. The environmental condition around the farms improved and also an average culture period was reduced from original three years to almost a year. In addition, for the purpose of reducing the risk of ecological impacts, protecting genetic integrity of wild population, minimising the inflow of pathogenic bacteria, it is decided to use only the shellfish spats collected in the local prefecture.

Through various improvements, the cooperative acquired the first ASC certification in Japan in 2016. With ASC certification, the value of such activities have been visualised, and economic incentives and price premium have been presented.

Source: ASC website（https://www.asc-aqua.org/ja/）

4. Investment and Financing

- **Since investment and loan has a large ripple effect on many industries, the firms are expected to expand their activity.**
- **A variety of relevant activities such as integrated reports and natural capital accounts and guidance are provided, and the utilization of these activities is also effective.**

Idea

Through investment and loans to projects and business, companies may indirectly give impact on biodiversity by business activities of the investee business entities.

The number of business entities engaging in investment and loans with the viewpoint of biodiversity is still low but such activities are expected to expand more and more in the future. Therefore, development and dissemination of financial products which promote biodiversity-conscious business activities should be promoted to provide incentives for business entities who work on conservation and sustainable use of biodiversity.

【Example of activity expected from business entities】

- Incorporate the viewpoint of biodiversity as investment criteria for investment and loans.
  (A) Utilize the Equator Principles[24] in case the project can be identified in project for financing and seek environmental impact assessment including biodiversity as part of the review.
  (B) In investing in business, confirm the consideration to biodiversity made by target business entities. (Presence or absence of policies concerning conservation and sustainable use of biodiversity and incorporation into environmental management system)
- Consider biodiversity by considering Principles for Responsible Investment (PRI).
- Develop and provide financial products that promote biodiversity-conscious business activities by incorporating the viewpoint of biodiversity into the process of assessing environmental ratings.
- Proactively provide information on the activities and useful information on conservation and sustainable use of biodiversity.

[24] The Equator Principles are voluntary international standards adopted by various financial institutions around the world. In financial projects for projects, financial institutions conduct environmental assessment and social impact assessment from the standpoint of the lender, and manage them. It was first adopted in June 2003.

An example of activities by business entities

●Information	Company name	THE SHIGA BANK，LTD.
	Business contents	Deposit and lending business etc.
	Number of employees	2,125 (as of March 31, 2017)

●Content of activity: Environmental financing (eco-finance)

The Shiga Bank has included "coexistence and co-prosperity with the global environment" into its CSR Charter and has been making go-ahead attempts among other regional banks, such as introduction of environmental rating and handling of SRI fund in addition to its own environmental conservation activities.

Among others, as a mechanism to support environmental/biodiversity conservation activity by means of financing, it has formulated 'Principles for Lake Biwa (PLB)' independently. The Bank gives PLB Rating, when necessary, to those customers who agree with the Principles. In 2009, it also formulated "Biodiversity Rating (PLB rating BD)". Customers can obtain loans from "Lake Biwa Principles Support Fund (PLB fund)" with reduced interest rates based on these ratings.

PLB格付BD評価指標

- □「生物多様性保全」方針の策定状況
- □ 推進・管理体制の構築状況
- □ 影響の考慮と低減・回避のための行動の有無
- □ ビジネスの中への組み込み状況
- □ 自然再生や伝統文化保全の活動への貢献度合
- □ 専門的な知識を有する研究機関等との連携状況
- □ 社員や取引先に理解を深める機会の設定状況
- □ 活動や成果の公表状況

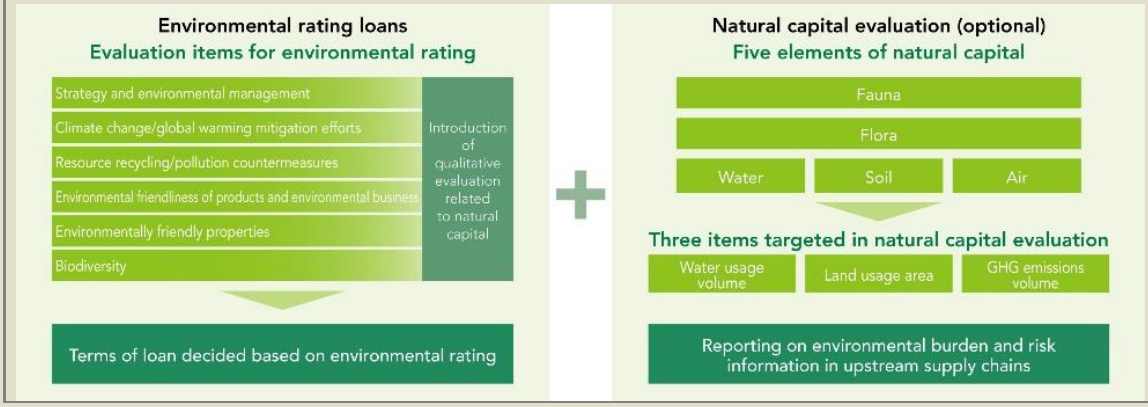
Source: Shiga Bank website（http://www.shigagin.com/csr/report/2016.html）

An example of activities by business entities

●Information	Company name	Sumitomo Mitsui Trust Holdings, Inc.
	Business contents	Retail business, wholesale, real estate business, asset management/operation etc.
	Number of employees	22,143 (consolidated)

●Content of activity: Natural capital evaluation type environmental rating loan

In the present age where supply chains are globally deployed, management of procurement risk on natural capital is an important theme for sustainable management strategies. In April 2013, Mitsui Sumitomo Trust Bank launched the "Environmental Rating Loans with Evaluation of Natural Capital Preservation" that adds activity on natural capital and influence to the process of evaluating the company's environmental rating. In this loan, it uses the natural capital assessment tool ESCHER to calculate the load and reliance on companies' natural capital for each procurement item, country (region), and provide options useful for risk management. Activity incorporating natural capital assessment into financing was the first attempt in the world and was taken up as an advanced case in the report of the European Commission.



Source: Sumitomo Mitsui Trust Holdings, Inc CSR Report（http://www.smth.jp/csr/report/）

An example of activities by business entities

●Information	Company name	Asset Management One Co., Ltd.
	Business contents	Investment management.
	Number of employees	972

● Content of activity: New launch of Japanese Bond ESG Fund

Asset Management One Co., Ltd. has launched a Japan Bond ESG Fund which incorporates considerations of material ESG (Environment, Society and Governance) factors into the investment decision-making process and portfolio management.

ESG investment takes into consideration non-financial ESG factors which have a potentially significant impact on the investee companies' financial performance over the mid-term and long-term and therefore on the performance of investment returns and risks. As such, ESG investment has been gaining increased awareness and interest among institutional investors in recent years as a key part of their responsible investment commitment.

In the investment process, ESG investment excludes corporates with potential risks and/or includes those who have been addressing ESG issues. In addition, through engagement with institutional investors, responsible investment is expected to encourage corporates to tackle ESG issues, which will contribute to the improvement of corporate value in the medium to long term.

The Japan Bond ESG fund aims to reduce downside risk in addition to generating stable returns by evaluating information such as corporate activities related to ESG issues, investment advice based on ESG data analysis provided by Mizuho–DL Financial Technology Co., Ltd., and proxy voting for listed companies (approximately 2,000 issuers).

Source: Asset Management One Co., Ltd. NEWS RELEASE（http://www.am-one.co.jp/pdf/news/43/ESGfund.pdf）

5. Sales

- **Sales activity is situated in the downstream of the supply and value chains and so able to influence consumers directly.**
- **It is important to deepen consumers' understanding of biodiversity because it leads to sales promotion of biodiversity-friendly products and services.**
- **By enhancing handling products and services that take into account biodiversity, companies can expect improvement of customer satisfaction and stabilization of product procurement.**

Idea

Companies can indirectly increase the impact on biodiversity by selling products/services that have a significant impact on biodiversity. Products and services that take biodiversity into account should be distinguished from others accurately.

On the other hand, by giving information on the products and services that care biodiversity to consumers at the time of sales, business entities can change consumers' awareness and behavior, which then changes consumer needs, which further changes behaviors of the upstream of supply chain, all of which lead to promotion of conservation and sustainable use of biodiversity in the end. Also, by responding to the new needs of consumers, business opportunities may expand further. Given that business entities engaged in sales activities are positioned closest to the consumer, they are expected to expand their activity further.

Specifically, they are expected to increase the sales of products and services that care biodiversity and incorporate viewpoints of biodiversity consideration into procurement policies and standards. Coordination with wholsalers and suppliers as well as sales persons is one of key factors to improve the effectiveness.

【Example of activity expected from business entities】

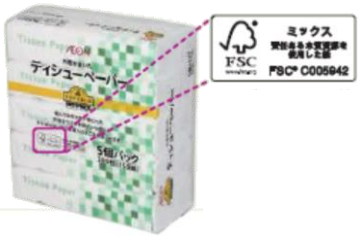
- Distinguish products and services produced/processed with consideration of biodiversity including certified products from others
- Include the viewpoint of consideration for biodiversity, especially handling of certified products into procurement policy and procurement standards
- Display explanation of the biodiversity consciousness of prodocts and services toward consumers
- Provide information on products and services considering biodiversity to consumers in an easy-to-understand way, cooperating with raising awareness activities by business organizations and public entities

An example of activities by business entities

●Information	Company name	AEON CO.,LTD.
	Business contents	Management of business activities of companies operating retail, developer, finance, services, and related businesses
	Number of employees	520,000 (Group employees)

●Content of activity: Aggressive sales of certified products

Aeon Co., Ltd. established "Aeon Sustainable Procurement Principles" in February 2014, and concrete activities include 1.Eliminating natural resource transactions, gathering and fishing conducted illegally, 2.Establishing and managing Aeon standards from the perspective of biodiversity preservation and preventing the depletion of natural resources, 3.Minimizing use of non-renewable resources, 4.Establishing traceability including place of production and fishing methods, for produce and marine resources and 5.Preventing the destruction of forest land with high conversation value. Preventing the destruction of natural resources, we are focusing on selling certified products that can sustainably use natural capital. In 2017, we are proceeding with efforts to announce "Aeon Sustainable Procurement Policy" and "Sustainable Procurement 2020 Target" for agricultural products, livestock products, fishery products, paper, pulp, wood and palm oil.

【ASC certified products】	【MSC certified products】	【FSC® certified products】
Certification to sea environment and creatures, cultivation considering society and human rights. Aeon released Asia's first certification salmon in 2014, and as of February 2017, it handles 10 types of products of 5 fish species.	Certification to doing fishery considering the sea environment and creatures so as not to reduce natural fish. Aeon started handling it in 2006, handling 38 product of 18 fish species, which is the largest domestic retailer as of February 2017.	Certification to utilize timber produced from appropriately managed forests as commodity raw materials and store materials. It has been selling products using FSC® certified paper since 2008.
TOP VALUE ASC certified osteotomy/skinless white fish fillet (Pangasius)	Top Value Green Eye Natural MSC certified salt salmon	 Top-valued using FSC® certified paper Best price tissue paper

Source: AEON CO.,LTD. website（https://www.topvalu.net/brand/csr/ecosystem/#ancb）

An example of activities by business entities

●Information	Company name	Oisix.daichi Inc.
	Business contents	Sales of organic vegetables, special cultivated agricultural products, non-added processed foods, safety-conscious foods and ingredients to general consumers through websites and catalogs
	Number of employees	418 (as of October 1, 2017)

● Content of activity: Sales of Japanese Ancient Vegetables

"Japanese Ancient Vegetable" is a series that delivers various local varieties of vegetables in Japan by the home delivery service "Daichi Wo Mamoru Kai" operated by Oisix.daichi Inc.
Many of the vegetables familiar to us usually have good appearance and good alignment, and they are mostly "breeding species (F1 species)" which has been improved according to the needs of the mass production and mass consumption market. Although their productivity and distribution efficiency are excellent, they are one generation species, so their seeds do not grow like their parent vegetables.
Meanwhile, local varieties have been repeatedly cultivated in the soil and climate in each region by farmers all over Japan for many years. Their unique shapes and tastes given by specific characteristics of each region are still attractive, despite of their weak points including seed-raising and -cultivating burden and instability of harvest amount.

Cultivation of "hybrid type (F1 type)" spread nationwide, while local varieties which take a lot of work and not suitable for mass production and mass distribution have been abolished more and more. "Japanese Ancient Vegetable" is a commercialized series of local varieties of vegetables in cooperation with producers who have a desire to protect precious seeds even under such circumstances.

Source: Oisix.daichi Inc. website（https://www.oisixdotdaichi.co.jp/）

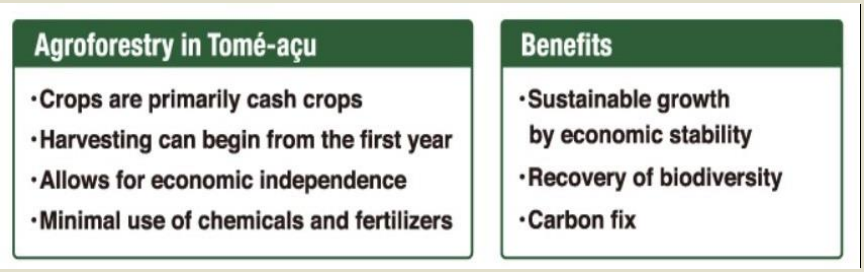
An example of activities by business entities

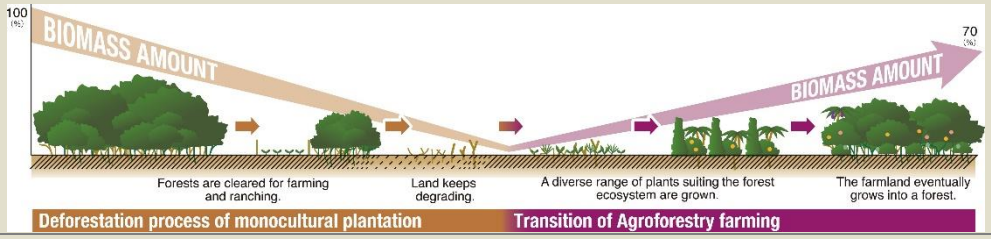
●Information	Company name	FRUTA FRUTA Inc.
	Business contents	Exclusive import distributor of Amazon fruits in Japan supplied by CAMTA (Tomé-Açu Agricultural Cooperative Association) ; wholesaler and exporter of raw materials for restaurant companies, food manufacturers, beverage manufacturers, cosmetic companies, etc.
	Number of employees	About 30

● Content of activity: Agroforestry marketing

FRUTA FRUTA Inc. contributes to the recovery of natural capital with the power of business, that is, the well-balanced consumption of the diverse fruits and crops of agroforestry, by making an alliance with other companies in various fields. According to FRUTA FRUTA, the increase of consumption of agroforestry products leads to the revival of destroyed forests in Amazon through returning profits to the people and/of the area.

Agroforestry is a system of agriculture in which people plant various kinds of crops and trees on the devastated lands of the Amazon in a form that follows the forest mechanism. CAMTA, the exclusive contract partner of FRUTA FRUTA, has been allegedly involved with agroforestry of about 7,000 ha. The amount of the greenhouse gas fixed by the system is estimated to be about 53,185 t per year.





Source: Fruta fruta website（https://www.frutafruta.com/greeneconomy/）

An example of activities by business entities

●Information	Organization name	NEXUSAIR Co., Ltd
	Business contents	Sales of materials, equipment and machinery for packing and wrapping
	Number of members	12

● Content of activity: Development and sales of air-buffer material made with biomass plastic

Nexusair developed biomass plastic film and air-buffer material made of it. The film is made with plant plastic whose raw ingredient consists of molasses, a residual by-product of the process of extracting edible sugar from sugarcane, which leads to cutting back on the use of petroleum resources, avoiding competition with food production and reducing carbon-dioxide emissions.

In Japan, biodegradable plastics have been imported and used for air-buffer material. However, since plastics are not disposed in landfill, its biodegradability has not been appreciated at all. By contrast, Nexusair's air-buffer material is fully compatible with Japanese supply chain and achieves 10% cut in carbon dioxide generation already at the production stage. In order to publicize and increase awareness of its product, the company provides the air-buffer material with the "Biomass Mark" printed on it, which is a certification of biomass-based products by Japan Organics Recycling Association. Besides, the air-buffer material was also approved as "KAWASAKI monodukuri brand" due to the originality of its raw material.

Source: Nexus Air website（http://www.nexusair.co.jp/）

6. Research and Development

- **Research and Development can be a fundamental solution to reduce the impact of biodiversity through products and services.**
- **Objects of research and development are not limited to products and services, but they include business models. Thus, business entities of industries other than manufacturing are expected to take part.**

Idea

Production methods, construction methods, or products/services themselves may affect biodiversity. That means research and development on products and services can potentially provide a fundamental solution to reduce the impact of biodiversity. In other words, business entities engaging in research and development can incresase their business chances, if they conduct research and development in consideration for conservation of biodiversity.

As to the direction of activity, in addition to promoting research and development on products/services, it is important to carry out R&D to come up with products, services, methods of production and manufacturing that have little impact on biodiversity. It is also important to include consideration to biodiversity (matters related to raw materials and biological resources to be used) in design rules.

It is likely to be thought that R&D is a matter only for manufacturers, but as mentioned above, services, sales, sales method and business models that take biodiversity in consideration are also objects of R&D. In order to realize a society indicated in "Recommendation to sustain people and their livelihoods with Mori, Sato, Kawa, Umi"[25], it is necessary to develop a business model in which biological resources obtained especially in a sustainable manner in Satoyama are distributed in the real economy. Therefore, business entities of the industries other than manufacturing are strongly encouraged to be involved in such R&D activities.

In applying developed technologies to society, it is advisable to forecast and consider secondary impacts they may bring as much as possible. In addition, it is necessary to engage in international cooperation proactively, transferring those newly developed technologies to developing countries, for example, which contribute to addressing global issues of biodiversity.

[Example of activity expected from business entities]

- Condudt research and development on products and services that have little impact on biodiversity
- Condudt research and development on production methods and construction methods that have little impact on biodiversity
- Incorporate the viewpoint of consideration for biodiversity into design rules and conduct research and development which takes biodiversity into account from the stage of designing throughout the life cycle
- Consider biodiversity conscious services, sales/sales methods, business models
- Promote customers' awareness on the importance of biodiversity through product development based on biodiversity (e.g. biomimicry: biomimetic technology)

[25] "Recommendation to sustain people and their livelihoods with Mori, Sato, Kawa, Umi“ (by Ministry of the Environment "Sustaining People and their Livelihoods with Mori, Sato, Kawa, Umi" project team, 2016)

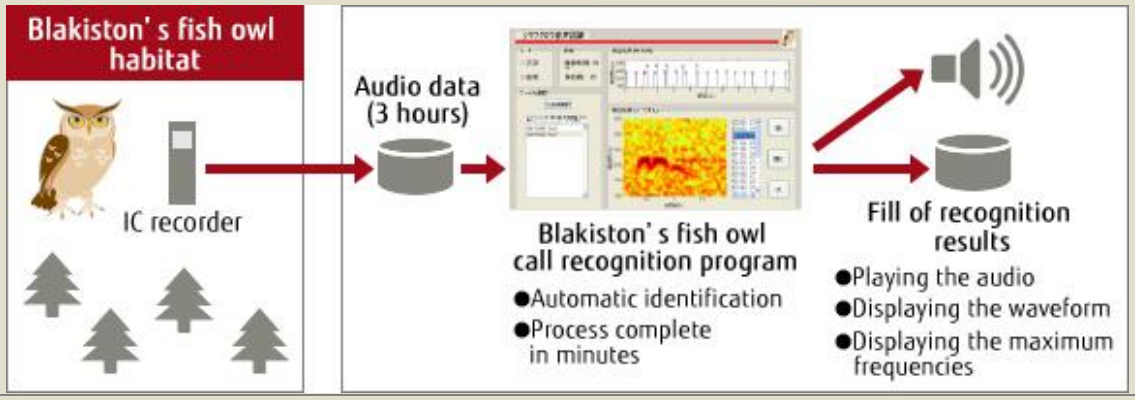
An example of activities by business entities

●Information	Company name	Fujitsu Limited
	Business contents	Communication system, information processing system, electronic device etc.
	Number of employees	155,000 (group-wide)

●Content of activity: Increasing efficiency and accuracy of surveys using voice recognition software

The Blakiston's fish-owl is an endangered species that lives only about 140 in eastern and central parts of Hokkaido. The Japan Wild Bird Society had been conducting surveys for preservation of the Owls but it was always problematical that it took much time to analyze the recorded cries.

For this reason, Fujitsu Limited developed a voice recognition software aimed at shortening the time of analysis and improving the accuracy of survey in order to contribute to conservation of the Owls. As a result, an analysis of three-hour-long recorded data was shortened to take only a few minutes, and it became also possible to detect cries with higher accuracy. In the end, more extensive survey became possible.



Source: Fujitsu Limited Website (http://www.fujitsu.com/jp/about/environment/activities/japan/owl/)

An example of activities by business entities

●Information	Company name	Lightnix, Inc.
	Business contents	Manufacturing, development and sales of medical equipment
	Number of employees	5

● Content of activity: Painless needle which imitated mosquito' s mouth (needle)

Lightnix, Inc. has developed the world's first plant-based lancet with the motto. "Manufacturing for human friendly and environment friendly".

In addition to mimicking the mouth (needle) of the mosquito and minimizing pain, the area of the wound is small and hemostasis time is shortened. Furthermore, because it is a plant-based resin, it has many merits such as being able to safely be used even for metal allergy, being incinerated and disposable. Japan Venture Award 2015, Medium Small Business Administration Prize Official Prize and many other awards.

※) The lancet needle is mainly used when a diabetic patient collects blood for blood sugar level testing. Also called a puncture needle.

Source: Lightnix website（http://www.lightnix.jp/products/）

An example of activities by business entities

●Information	Company name	Spiber Inc.
	Business contents	New-generation biomaterial development
	Number of employees	183

● Primary activities: Development of sustainable protein materials, such as synthetic spider silk

Spider silk possesses greater toughness than any known material—natural or manmade—on the planet, with levels approximately 300 times greater than steel and five times greater than nylon and silk. In 2013, Spiber announced that it had succeeded in developing mass-production technology for a synthetic spider silk protein material known as QMONOS™. This material has since garnered great attention for its microbial production process, which utilizes sugar as a feedstock and is not reliant on petrochemical resources.

In order to build a sustainable society, Spiber is engaged in the development of protein-based materials capable of playing a key role in industry and manufacturing. Preparing these materials for widespread adoption involves a variety of technical processes, such as genetic design and synthesis, fermentation, and purification—approaches which Spiber has designed entirely in-house. Spiber's protein materials, which do not rely upon non-renewable resources, show considerable promise for use in a range of industries such as apparel and automobile manufacturing.

Spiber's 2015 synthetic protein prototype jacket

Source: Nearby biodiversity (2016, Nao Miyashita), Spiber website（https://www.spiber.jp/）

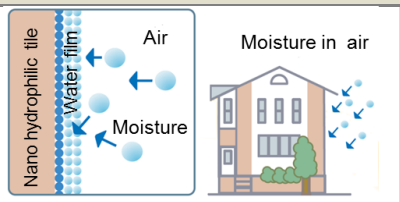
An example of activities by business entities

●Information	Company name	LIXIL Corporation.
	Business contents	Housing/service business etc.
	Number of employees	14,527 (as of the end of March 2017)

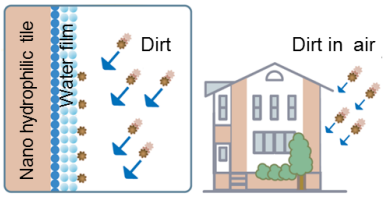
●Content of activity: Dirt-resistant outer wall imitating snail antifouling mechanism

LIXIL Corporation. focused on the fact that the shell of the snail is not always dirty, thinking that there is a mechanism that keeps the dirt off the shell itself, and clarified that the dirty hints are water, oil and groove. Furthermore, when analyzing the surface structure of the shell, grooves are made in a wide range of hundreds of nano (1 nano = 1 billion 1 m) to millimeter size, and the fine groove spreads to the shell surface and is always in the groove. It was found that it is removing (repelling) the oil causing the dirt because it is structured as water gathering.

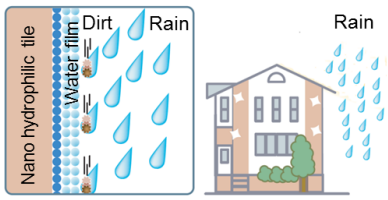
LIXIL Corporation. focused on this structure and applied it, using a structure similar to the outer wall material of a house, succeeded in having an anti-fouling mechanism that causes fouling if it rains. A few years after the idea, it was sold as an outer wall material of "nano hydrophilic tile".



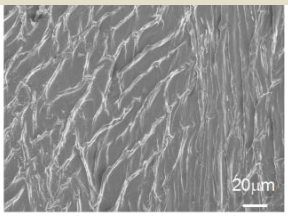
Nano hydrophilic tile absorbs moisture in the air, forming water film on the surface.



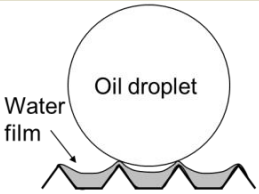
Urban dirt including oily compound like smoke sticks on the surface of tile.



Nano hydrophilic tile can easily remove oil containing dirt with rain alone.



Scanning electron microscope images show that well-regulated grooves are formed on the surface of the snail shell.



Many small grooves play a role like a rain gutter, resulting in the formation of water film to prevent oily dirt.

Source: LIXIL Group Corporation. website（http://www.lixil.co.jp/）

7. Transportation

- ❖ **There is a possibility that the ecosystem may be affected by movement and invasion of alien species by transportation.**
- ❖ **Activities such as countermeasures against ballast water and measures against alien species in imported materials (containers, pallets etc.) are expected to be expanded.**

Idea

There is a possibility that influences on the ecosystem in the ocean and coastal areas due to ship's ballast water and biofouling of hulls and influences by alien species invading in the transportation of goods may occur. Such a problem arises not only in the transportation, but also in the tourism industry. For example, seeds of the plants that do not naturally grow may be brought into mountains, wetlands or solitary islands, attached to travelers' clothies or shoe soles. That is also the reason why "local production of local consumption" should be promoted, as it avoids transfer and diffusion of alien species by transportation.

So, it is important to prevent transfer and diffusion of alien species through implementing measures to reduce invasion of alien species, such as installing a ballast water treatment system. Also, at logistics facilities, by exchanging the transportation pallet from the ones made of wooden to the ones made of resin, you can expect not only to protect forest and reduce CO2 emission but also to avoid transfer and diffusion of alien species.

[Example of activity expected from business entities]

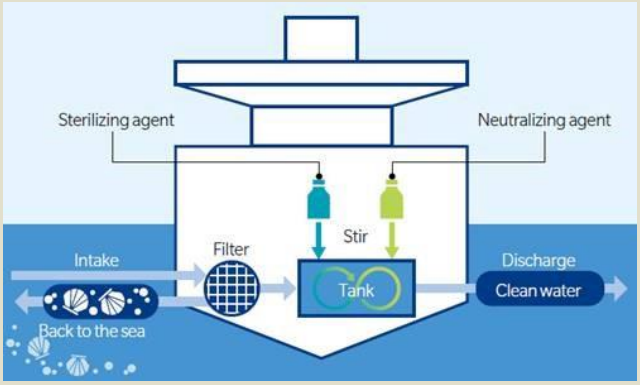
- ➢ Prevent the transfer of alien species by means of managing organisms and seeds adhering to containers and pallets, implementing countermeasures against ballast water by installing ballast water treatment system and voluntary smoke
- ➢ Preferential use of carriers who advance activity considering biodiversity lik alien species countermeasures
- ➢ Tackle reduction of emission of greenhouse gases and black smoke through the use of low pollution vehicles.

An example of activities by business entities

●Information	Company name	Nippon Yusen Kabushiki Kaisha (NYK Line)
	Business contents	Global Logistics (Liner Trade, Air Cargo Transportation, and Logistics), Bulk Shipping, and Others (Real Estate and Other)
	Number of employees	35,935

● Content of activity: Ballast Water Management to Preserve Biological Diversity

In September 2010, prior to the International Convention for the Control and Management of Ship's Ballast Water and Sediments* entering into force, the NYK Group demonstrated its commitment to protecting the global environment by installed a Ministry of Land, Infrastructure, Transport and Tourism–approved ballast water management system (BWMS)** called "JFE Ballast Ace" on Emerald Leader, a pure car carrier. This was the first installation of a BWMS on a vessel in the NYK fleet.



As of the end of August 2017, installation has occurred on 75 vessels, and the NYK Group will continue to install the BWMS on its owned and managed vessels.

* An international convention for the regulation and control of ship's ballast water and sediments for the purpose of preventing movement of aquatic organisms and pathogens harmful to the environment, human health, and economic activity. Effective from September 2017.

** Seawater (ballast water) is used in ships to maintain ship strength and stability, but oceangoing vessels transport not only ballast water but also the marine organisms in the water. The BWMS is a system that processes marine organisms carried by the ballast water so that ecosystems are preserved.

Source: NYK Line Group website（http://www.nyk.com/csr/envi/action/biodiversity.html）

An example of activities by business entities

●Information	Company name	Komatsu Ltd.
	Business contents	Construction and mining machinery, utilities (compact machinery), forestry machinery, industrial machinery
	Number of employees	47,204 (consolidated)

●Content of activity: Reduction in wood and cardboard packing materials

At Komatsu, as biodiversity was added to the Komatsu Earth Environment Charter in 2010, it has started improvement activities, with the reduction of wood and cardboard packing materials being the main focus, based on the perspective of forestry conservation. By making improvements such as using returnable pallets, changing materials, and simplifying/eliminating packing materials--- with a particular emphasis on improving the packing of spare parts and overseas production parts for which large amounts of packing materials had been used--- the FY2015 target was reached in the second year from when the activities were initiated from FY2011. And by continuing with improvements since then, the following effects were obtained:

〈FY2010 - FY2015 Activities Results〉

● Basic Unit of Packing Material Used per Cargo Weight (kg/ton)
Compared to FY2010 △24.8 %

● Amount of Wood/Cardboard Used
FY2010 - FY2015 Cumulative Total △1,978tons
The amount of wooden packing materials reduced when converted to cedar trees (tree age 50) is equivalent to 4,457 trees.
From the forestry conservation perspective, we kept 4,457 trees from being cut down.
Also, the amount of CO2 absorption converted to cedar trees is 62 (t-CO2/year).

● Improvement Status of Returnables

・Returnable use rate for spare parts' packing cases:
46% improvement (compared to FY2010)

・Returnable use rate for overseas production parts packing (all-purpose) cases:
22% improvement (compared to FY2010)

Source: Komatsu Ltd.website（http://www.komatsu.co.jp/CompanyInfo/csr/environment/2016/32.html）

8. Land Use and Development

- **Changes in land use and development projects may directly or indirectly have a major impact on biodiversity**
- **The impact on biodiversity may also jeopardize the traditional culture of the area rooted in biological resources**
- **Evaluate the impact on biodiversity in advance, and avoid or reduce the impact**
- **It is important to promote activities with support from experts for highly uncertain events, collaborating with external stakeholders including local residents from the earliest stage.**

Idea

Changes in land use such as construction of factories and business sites in agricultural land, forest land, and expansion of plantation by conversion of land use, establishment of afforestation grounds, and establishment of fish farms will cause changes in conventional ecosystems. There is a possibility that the habitat/habitat environment of organisms may decrease, divide, and change. Such land use and development projects may affect the biodiversity of river ecosystems and waters through soil drainage, installation of structures to land to be modified.

Similar problems may arise in the development of non-living resources (mineral and energy resources). Disappearance of existing ecosystem by stripping, influence on biodiversity due to disposal of large-scale mine waste and development of infrastructure such as roads and harbors, influence on rivers and marine ecosystem through soil contamination by water intake and water pollution in the primary treatment process of mining may occur. If collection of minerals and stones, disposal of tailings etc. are carried out inappropriately, loss and pollution of soil may be caused, which leads to loss of habitat of living organisms.

Such impact on biodiversity sometimes leads to decline of local traditional culture rooted in the biological resources. If the impact is large and widespread, it will become a huge social impact.

So, it is ideal to evaluate the impact on biodiversity in advance in order to avoid or reduce the impact. Further, it is recommended to establish a framework for continuing conservation activities at the site of land use and development by drafting, managing and monitoring plans in cooperation with external stakeholders such as local residents. In large-scale overseas projects, it is also important to work on conservation and sustainable use of biodiversity by complying with relevant laws and regulations of countries and regions concerned in cooperation with the relevant governments and international NGOs.

Regarding domestic land use and development that may affect the environment including biodiversity, it is advisable to implement environmental impact assessment based on assessment laws and ordinances voluntarily, taking into consideration the characteristics of the project,

[Example of activity expected from business entities]

- Conduct impact assessment on biodiversity and endeavor to avoid or reduce the impact such as avoidance of development in important areas
- In case it is difficult to avoid the impact, consider biodiversity offset based on adequate consultation with stakeholders
- Tackle the creation of biodiversity by creating green spaces under the consideration for the use of local tree species and the prevention of invasion of alien species
- Conduct ex post investigation on the impact by development continually
- Strengthen cooperation with external stakeholders, including drafting and managing plans with participation of local residents.
- In large-scale overseas projects , work on conservation and sustainable use of biodiversity by complying with relevant laws and regulations of countries and regions concerned in cooperation with the relevant governments and international NGOs.

An example of activities by business entities

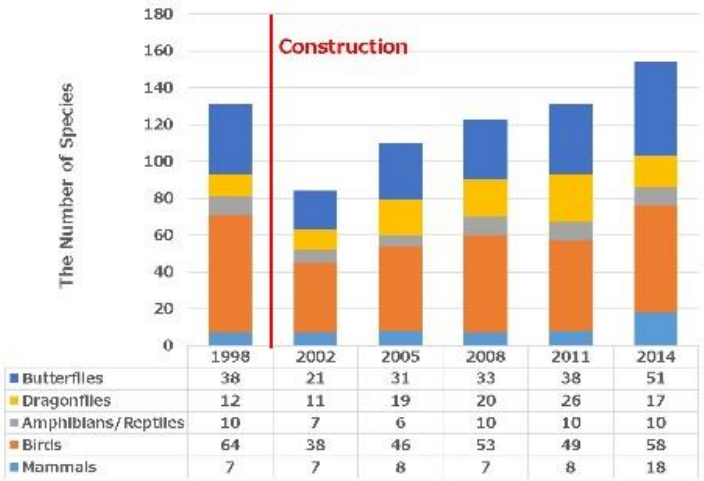
●Information	Company name	SANDEN HOLDINGS CORPORATION
	Business contents	Automotive Systems Business, Commercial Store Systems Business
	Number of employees	13,398 (consolidated)

● Content of activity: Cases related to biodiversity offset in environmental impact assessment

SANDEN HOLDINGS CORPORATION implemented voluntary environmental assessment and conducted an activity that contributes to the offset of biodiversity, in order to become a coexisting factory in the construction of Akagi Factory in Maebashi City, Gunma Prefecture.

Conservation measures to mitigate the development impact include planting 30,000 trees in the factory premises (although we cut down about 20,000 trees to build new factory, but planted more than that), and a soil of near-nature construction method. Creation of a habitat for aquatic life in a glen of valley and biotope, thinning in forest (artificial forest). Furthermore, in cooperation with various organizations, the company's man-made forest (biomaterials) and biotope are continuously managed and maintained by the minimum human care in the forest (artificial forest) so that forests and biotope can exert ecological functions. As a result of these conservation countermeasures, about 130 species of animals were identified as before, and about 690 species of plants were confirmed to be more than about 330 species before construction due to new biotope. The points of this case are (1) realization of net gain (positive impact creation which exceeds the negative impact caused by the development, (2) implementation of sustainable maintenance and (3) continuation of monitoring.

Figure 3-1 Full view of sanden forest / Akagi factory



	1998	2002	2005	2008	2011	2014
Butterflies	38	21	31	33	38	51
Dragonflies	12	11	19	20	26	17
Amphibians/Reptiles	10	7	6	10	10	10
Birds	64	38	46	53	49	58
Mammals	7	7	8	7	8	18

Figure 3-2 Result of Monitoring Survey (Animals)

Source: Reference case examples on biodiversity preservation in environmental impact assessment (2017, Ministry of the Environment)

An example of activities by business entities

●Information	Country	the United States
	Business contents	High Grade Residential Area Development

●Content of activity: Biodiversity offset (compensatory mitigation) of a riparian ecosystem

In the United States, there are a lot of successful cases of biodiversity offset, which achieved either no net loss or net positive impact. An early example of which is the compensatory mitigation along the Sacramento River in California with the aim of restoring riparian ecosystem and habitats of rare species :

An environmental impact assessment based on the provisions of NEPA and CEQA was conducted in the areas along the Sacramento River in the late 1980's. Different plans were considered from the perspective of how the environmental impact should be avoided and minimized and the Offsite Compensatory Mitigation Plan was adopted in 1997. In 1990, both monitoring of the site and fulfillment of the acceptability criterion were set as conditions for permits and licenses of development. Likewise the development site and the land where Nature had already been disappeared, the mitigation site must be located along the Sacramento River and kept as a restored reserve permanently. With a view to protecting rare species, it was also made obligatory to implement compensatory mitigation with an area of about 3.5 times larger than the habitat expected to be lost.

As a result of the offsite compensatory mitigation project since 1990 of a 50-hectare tomato field located 13 kilometers from the development site and the purchase of a 51-hectare land with undamaged riparian ecosystem in the upstream area, the development was allowed to start in 1997. The compensatory site was alienated to the state to be a nature reserve

写真提供：田中章

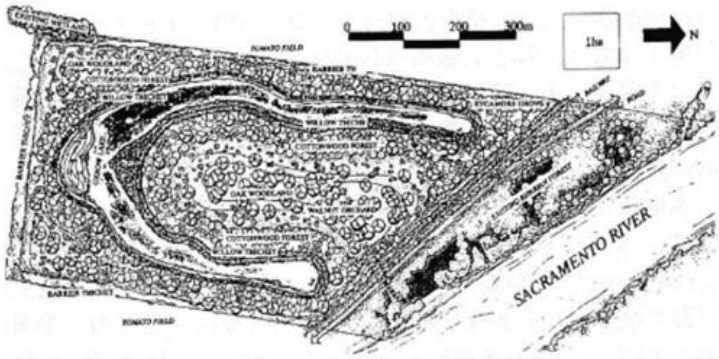


図 2-4 サクラメント川の代償ミティゲーション事例

出典：田中（1999）

Source: Tanaka, Akira (1999) A compensatory mitigation case study in the United States and its prospects in Japan Journal of the Japanese Institute of Landscape Architecture 62(5), 581-586

An example of activities by business entities

●Information	Company name	Sumitomo Corporation
	Country	Madagascar
	Business contents	Mine development project

●Content activity: Case of biodiversity offset in mining development project

Ambatovy Project is one of the world's largest nickel mine development projects, which lies in the eastern part of Madagascar. Sumitomo Corporation has participated in this project since 2005, in cooperation with a Canadian refining company and Korea Resources Corporation. Ambatovy commenced production of nickel and cobalt metal briquettes in 2012.

In addition to the compliance with domestic laws in Madagascar, this project conducts environmental management that complies with international standards such as the Equator Principles and the International Finance Corporation (IFC) Performance Standards. It also cooperates with national and international NGOs and environmental experts, such as Conservation International and Duke Lemur Center, to implement various programs for forest and biological protection through long-term environmental investigation. It has established a buffer zone to protect rare species around the mine site and has made various efforts such as setting environmentally friendly pipeline routes and protecting endangered species. As the first pilot project based on the biodiversity offset program (BBOP), it has actively promoted conservation projects under the concept of "no net loss, and preferably a net gain". This includes a plan to conserve an area of 14,000 ha or more in total from four conservation areas around the mine sites and the areas with similar vegetation, which is almost nine times the size of the areas impacted by the operation.

Source: Reference case examples on biodiversity preservation in environmental impact assessment (2017, Ministry of the Environment)

Sumitomo Corporation Website (http://www.sumitomocorp.co.jp/business/article/id=235)

9. Holding Management

- **Depending on the way of management of the land owned by business entities, it may affect biodiversity.**
- **Consideration for biodiversity may increase the value of real estate.**
- **In the future, it becomes important to contribute to the construction of local ecosystem networks.**

Idea

In the management of land owned by business entities and the use of the site, biodiversity may be affected by the introduction of alien species. On the other hand, it is also possible to form ecosystem networks and improve the quality of the region's ecosystem by appropriately managing the circumstances of the biodiversity. Such consideration to biodiversity may increase the value of real estate.

Currently, many business entities are working on conservation of biodiversity in their holdings individually, and those activities are not related each other. For this reason, it is important to continue to promote these activities on one hand, build ecosystem networks with the surroundings and position them in the regional biodiversity strategy on the other hand, leading to the establishment of a regional ecosystem network.

When restoring degraded ecosystems, it is important to apply low-burden environmental technologies which are consistent with dispensation of nature. For example when planting trees, it is necessary to carefully select tree species by listening to the opinions of experts familiar with the surrounding vegetation. It may be also advisable to ask external evaluations on holdings management by utilizing a system or a certification system for the evaluation of green spaces etc.

[Example of activity expected from business entities]

- In the holdings management, pay attention not to have a negative impact on regional biodiversity such as introduction of alien species
- Understand the situation of the biodiversity of the holding such as factory site and consider the use of the local tree species, while conducting large-area activities with a view towards the establishment of regional biodiversity strategy (construction of ecosystem networks, ex situ conservation of rare animal and plant species) in collaboration with external stakeholders (local residents, NPOs/NGOs, local public bodies).
- When implementing activity, monitor in cooperation with local universities and NGOs/NPOs and grasp the impact on biodiversity
- By utilizing a system or a certification system for the evaluation of green spaces etc, receive a diverse evaluation of the management of green of holdings

An example of activities from business entities

●Information	Company name	MITSUBISHI JISHO RESIDENCE CO., LTD.
	Business contents	Development, sale, and leasing of real estate
	Number of employees	1,070

●Content of activity: BIO NET INITIATIVE and acquisition of ABINC certification

Mitsubishi Jisho Residence Co., Ltd. is promoting "BIO NET INITIATIVE" which conducts planting plan considering the conservation of biodiversity in all "The Parkhouse" irrespective of the size of the property and the site area. This is a landscaping planting plan based on the following idea, and as of March 2017, the number of properties that introduced "BIO NET INITIATIVE" exceeds 100 projects.

○ Protect: Protecting a diverse range of flora and fauna without adopting invasive species
○ Nurture: Nurturing vegetation in the local area and species that are indigenous to Japan
○ Connect: Considering the formation of green networks with surrounding green zones
○ Use: Making use of the natural beauty of trees and the life force of the soil
○ Reduce: Reducing the outbreak of diseases and pests, the regularity of trimming and mowing, and the amount of burnable garbage produced

In addition, the company acquired 13 properties, "Ikimono Symbiotic Plant ® Certification (ABINC Certification)" certified by the Ikimono Symbiosis Project Promotion Council, of which "The Parkhouse Nishi Shinjuku Tower 60" And "Setagaya House" have won the "ABINC Award" from the high degree of contribution to the mainstreaming of biodiversity.

ABINC
Association for Business Innovation in harmony with Nature and Community

ABINC（Association for Business Innovation in harmony with Nature and Community）Certification is a third-party certification system for facilities with consideration for biodiversity by the Ikimono Symbiotic Project Promotion Council

Source: MITSUBISHI JISHO RESIDENCE CO., LTD. webiste（http://www.mecsumai.com/bionetinitiative/）

An example of activities from business entities

●Information	Company name	Mori Building Co., Ltd.
	Business contents	Comprehensive developers (urban redevelopment projects, real estate rental/management projects, culture/arts/town management business)
	Number of employees	1,294

●Content of activity: Acquisition of JHEP certification

"ARK Hills Sengokuyama Mori Tower" managed and operated by Mori Building Co., Ltd. has been planning a green area of the city in order to make the local environment better, aiming for a rich ecological system in which creatures such as small birds and insects come in. For realizing the plan, a large number of native plants originally found in the nature of the region and , dead trees that become homes of living things or feeding places have been planted and the soil used in this green area has been preserved and reused since before construction. As a result, various creatures, such as “Kogera” (Japanese Pygmy Woodpecker), have been observed in this area.
This project acquired Japan's first highest rank (AAA) at "JHEP certification" (development and management: Ecosystem Conservation Society –Japan), which is a certification that quantitatively evaluates the activities that contribute to conservation and recovery of biodiversity.

Kogera Garden

中央に池を配した「居住者に身近な憩いの場」です。小鳥や昆虫のすみかや採餌場として、あえて枯れ木を設置しました。

Sengokuyama Plaza

正面玄関となる複合棟の足元は、メタセコイアやくすのきなどの既存樹木を生かした緑の空間です。

O-Keyaki Park

大きなけやきのシンボルツリーを植えた芝生の広場は、地域住民や子供たちに利用されるにぎやかな場所になっています。

Source: Mori Building website（http://www.mori.co.jp/company/press/release/2012/11/20121129150000002540.html）

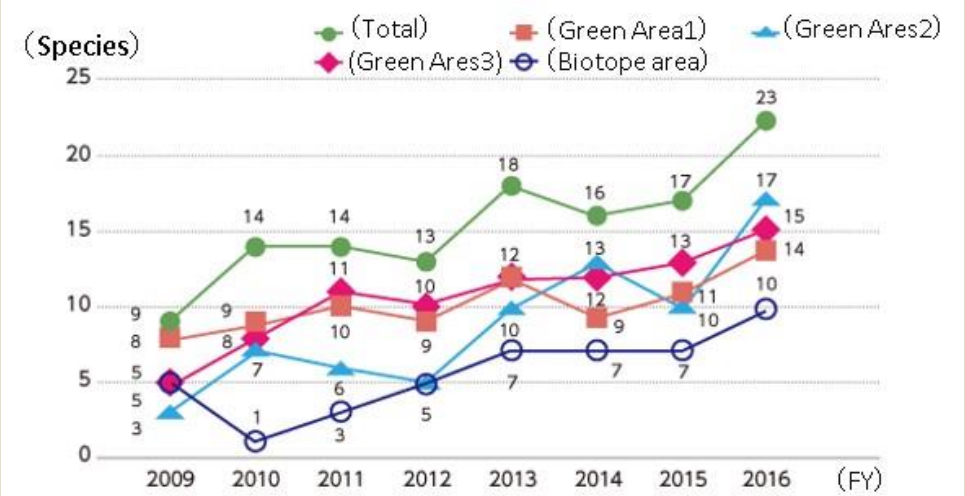
An example of activities from business entities

●Information	Company name	OSAKA GAS CO., LTD.
	Business contents	Sale of gas and gas appliances, gas pipes installation, heat supply etc.
	Number of employees	20,762 (consolidated)

●Content of activity: Conservation of green space in the company (office buildings, LNG terminals)

Based on the recognition that the various blessings biodiversity brings are indispensable both socially and for business promotion, Daigas Group established 'Daigas Group Biodiversity Policy' in 2010 as a guide to engage domestic and international biodiversity through business activities. In accordance with this policy, for example, Osaka Gas Co., Ltd. utilizes green spaces on the premises of its LNG terminals as a habitat for various creatures originated from its surrounding areas.
Together with local primary school students, the Company nurtured acorns collected from neighboring satoyama in the green area of the terminals. In addition, under the guidance of external experts, it cooperates in conservation activities of rare plants in the region, as well as regular monitoring development and visualizing the activity outcome.

In order to expand the efforts of these LNG terminals further throughout the group, it issued the "Reference for Biodiversity Consideration on Planting at Daigas Group" in 2014 as a reference for each organization and affiliate to work on. An affiliated company engaged in the business of development and operation of office buildings and condominiums / rental condominiums has been awarded the "Good Design Award" of 2016 with the activities to introduce regional seedlings to the planting of the properties with a help of this reference.



The number of butterfly species observed at the Senboku LNG Terminal

Source: Osaka Gas website（http://www.osakagas.co.jp/en/index.html）

Major certification institute related to biodiversity

The certification system introduced here is carried out under the responsibility of each organization, and business entities. The Ministry of the Environment does not guarantee the contents of the information provided by those certification institute.

Certificate name	Authorized organization and its outline	Overview/Features
FSC® certificate (Forest certification system)	Forest Stewardship Council®: global, not-for-profit organization dedicated to the promotion of responsible forest management worldwide. FSC defines standards based on agreed principles for responsible forest stewardship that are supported by environmental, social, and economic stakeholders including environmental groups, foresters, timber traders, indigenous groups, regional forestry associations, etc.	It is an international system operated by Forest Stewardship Council (FSC). There are two types of certification system. "Forest Management certification (FM certification)" certifying that responsible forest management is being conducted and Chain of Custody certification (CoC certification) certifying supplying and manufacturing timber/wood products from certified forest.
(Programme for the Endorsement of Forest Certification Schemes)	PEFC (International non-profit organization which operates international common forest certification scheme and endorses national forest certification systems developed through multi-stakeholder processes and operated independently.)	The scheme consists of "Forest Management (FM) certification" which is a third party certification to certify that a forest is managed in accordance with international standards (intergovernmental process standards) formulated for sustainable forest management, and “Chain of Custody (CoC) certification” to certify that a certain percentage of raw materials from certified forests and recycled materials are used for paper and timber products.
SGEC Certificate	‘Sustainable Green Ecosystem Council (a general incorporated institution)’	SGEC is a Japanese forest certification scheme aiming at promoting sustainable forest management, based on the Montreal Process, and considering natural and social site conditions, biodiversity, forest productivity, regeneration capacity, forest vitality and ecological, economic and social functions at present and in the future. This certification scheme has been endorsed by PEFC mentioned above.
MSC Certification	Marine Stewardship Council: An international nonprofit organization to promote sustainable fisheries	MSC program is consisted of two certifications: 1) Fishery Certification for well-managed sustainable fishery 2) CoC (Chain of Custody) Certification to ensure traceability in supply chain to prevent mixing with uncertified seafood. A global nonprofit organization MSC (Marine Stewardship Council) manages and promotes the program complying with FAO 's Guidelines for the Ecolabeling of Fish and Fishery Products from Marine Capture Fisheries.
ASC Certificate	Aquaculture Stewardship Council	The ASC is an international non-profit organisation that manages the world’s leading certification and labelling programme for responsible aquaculture. The ASC certificates are awarded to aquaculture farms that operates environmentally sustainable and socially responsible manners. Furthermore, Chain of Custody (CoC) certification are in place for distributors and processing facilities to ensure no mixing of certified products with conventional products.

※ Partly reprinted from the website of the Ministry of the Environment (https://www.env.go.jp/policy/hozen/green/ecolabel/touroku.html)
For other certification mark, please refer to the above web page.
Note 1) Apply authentication appropriately according to the type and the scale of each business.
Note 2) The above-mentioned certification is not necessarily obligatory.

Certificate name	Authorized organization and its outline	Overview/Features
Marine Eco-Label Japan（MEL）	Marine Eco-Label Japan Council	MEL is a seafood certification scheme for the sustainable management of aquatic resources and the conservation of ecosystems. MEL developed three types of standards for its certification. “Fisheries Management Standard” requires the sustainable and responsible management of capture fisheries. “Aquaculture Management Standard” also requires the sustainable and responsible management of aquaculture production. “Chain of Custody Standard” aims to secure that the certified products are originated from the certified fisheries and aquaculture.
Eco-farmer mark	Each prefecture	A certification granted to those farmers who are eligible to carry out plans for the introduction of a highly-sustainable agricultural production system that are designed in accordance with the Article 4 of Sustainable Agriculture Law (July 1999).
Biomass Mark	Japan Organics Recycling Association (General Incorporated Association conducting research, dissemination awareness for the purpose of constructing a comprehensive and reasonable recycling system of organic resources)	It certifies products using biological resources (biomass) which quality and safety conform to relevant laws and standards, and give biomass marks to display according to the biomass ratio of the products. Since plants absorb atmospheric CO_2 by photosynthesis, products using plant-derived materials (plastic products, fibers, printing inks, etc.) will not increase atmospheric CO_2 even if it’s burned. Biomass Mark certified products are safe, contributing to the formation of recycling-oriented society and preventing global warming.
Non-Wood Green Products Mark	Non-Wood Green Products Association of Japan (Development and Promotion of Non-Wood Green Products through Contribution to Global Warming and Conservation of Forest Resources)	The Non-Wood Green Products Mark can be applied to the Paper and the Paper Products from Non-Wood Materials, such as Bagasse of Sugar Cane, Empty Fruit Bunch of Oil Palm, Bamboo, Reed, Kenaf,Cotton Linter.

※ Partly reprinted from the website of the Ministry of the Environment
(https://www.env.go.jp/policy/hozen/green/ecolabel/touroku.html)
For other certification mark etc. please refer to the above web page.
Note 1) Apply authentication appropriately according to the type and the scale of each business entities.
Note 2) The above-mentioned certification is not necessarily obligatory.

Certificate name	Authorized organization and its outline	Overview/Features
RSPO Certificate	Roundtable on Sustainable Palm Oil (An international nonprofit organization promoting the production of palm oil considering the environment and society)	Certification will be given only if it passes the audit based on Principles & Criteria (P&Cs, 8 principles and 43 standards) as determined by the RSPO. There are two types of certification, only after all companies involved in the supply chain acquire either certification of plantation/mills (P&C certification) and (2) downstream certification (supply chain certification) from the mill, the final product will be certified.
Rainforest · Alliance Certification™	Rainforest Alliance (An international nonprofit founded to maintain tropical rainforests)	The Rainforest Alliance Sustainable Agriculture Standard is adaptable to different size farms. To earn Rainforest Alliance certification, farms must comply with strict requirements, such as meet the Standard's comprehensive criteria for sustainability that help improve the quality of life for farm families by both social and economic aspects and protect the environment, pass an audit by an authorized certification body.
Fairtrade Certification	Fairtrade International (Fairtrade Labelling Organizations International) as a scheme owner and FLOCERT as a certifier	It guarantees that products/ingredients are certified according to the internationally-agreed Fairtrade Standards which are designed to enhance economic, social and environmental development. 1. As in the economic aspects, it guarantees that producers receive Fairtrade Minimum Prices that cover the costs of sustainable production and Fairtrade Premium to invest in improving the quality of their lives. It also aims to facilitate long-term trading partnership. 2. The key social elements are: democratic decision-making process, transparency, no discrimination, no child labour, no forced labour, safe working condition 3. The environmental requirements are: minimized and safe use of agrochemicals, maintenance of soil fertility and water resources, proper and safe management of waste, and biodiversity. When a product carries the FAIRTRADE Mark it means that each organization in the product supply chain which produces, buys and sells the certified products/ingredients are regularly audited and certified in accordance with the Fairtrade Standards.

※ Partly reprinted from the website of the Ministry of the Environment
(https://www.env.go.jp/policy/hozen/green/ecolabel/touroku.html)
For other certification mark etc. please refer to the above web page.
Note 1) Apply authentication appropriately according to the type and the scale of each business entities.
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○Achievement status of Aichi Targets (intermediate evaluation by GBO 4 and adoption of Cancun Declaration)

In the fourth edition of the Global Biodiversity Outlook (GBO4) published in 2014, the status and expectation of achievement of the Biodiversity Strategy Plan 2011-2020 and the Aichi Targets were reported. According to its summary, “there has been significant progress towards meeting some components of the majority of the Aichi Biodiversity Targets. However, that progress will be regarded as insufficient, unless urgent and effective actions to reduce the pressure on biodiversity and to stop its continuing decline are taken”.

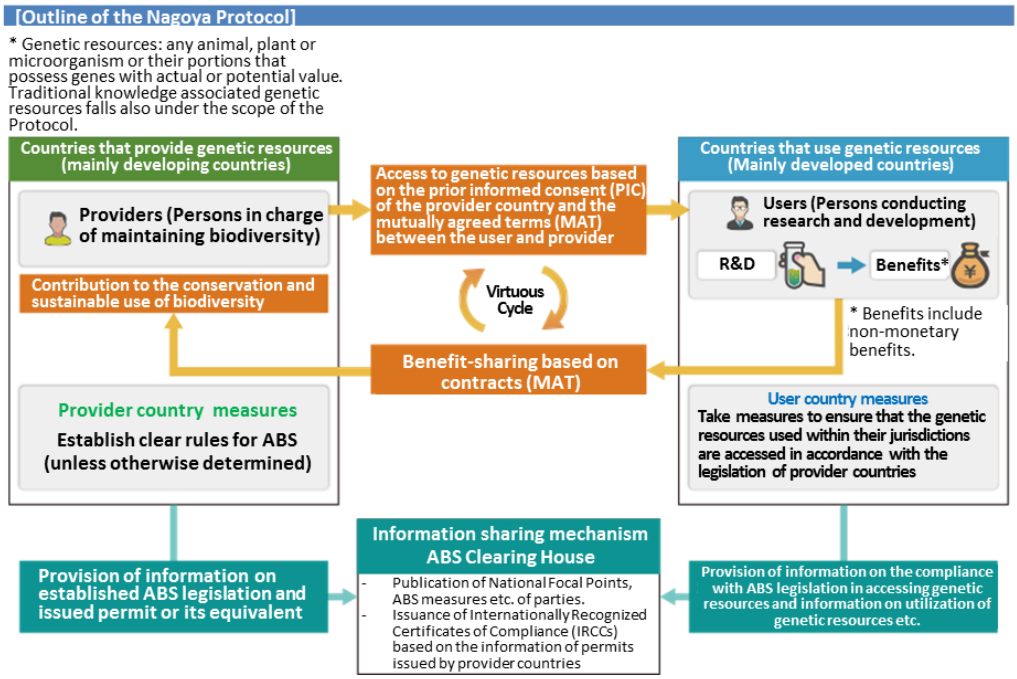
The CBD-COP 13 in 2016 was held with the theme of "incorporation of conservation and sustainable use of biodiversity in various sectors of agriculture, forestry and fisheries industry and tourism industry" and discussions on mainstreaming biodiversity were made. Particularly at the ministerial level meeting, Cancun Declaration on Mainstreaming the Conservation and Sustainable Use of Biodiversity for Well Being[26] was adopted.

○Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)

One of the objectives of the Convention on Biological Diversity is "access to genetic resources and fair and equitable sharing of benefits arising from their utilization" (ABS). At the CBD-COP 10 held in 2010, the Nagoya Protocol on the ABS was adopted, signed by 91 countries and the EU and entered into force on October 12, 2014 with the conclusion of 50 countries.

The Nagoya Protocol sets out measures to ensure the proper implementation of the rules stipulated in the Convention. Specifically, it stipulates clarification of procedures for accessing genetic resources in the country where genetic resources are provided and promotion of compliance with laws of providing countries by users.

After several years of careful consideration, the government of Japan issued the ABS Guideline on May 18 2017 as domestic ABS measures for the Nagoya Protocol and ratified the Protocol on May 22 2017. The Nagoya Protocol came into effect in Japan in August 20, 2017.



Source: ABS website（http://www.env.go.jp/nature/biodic-abs/index.html）

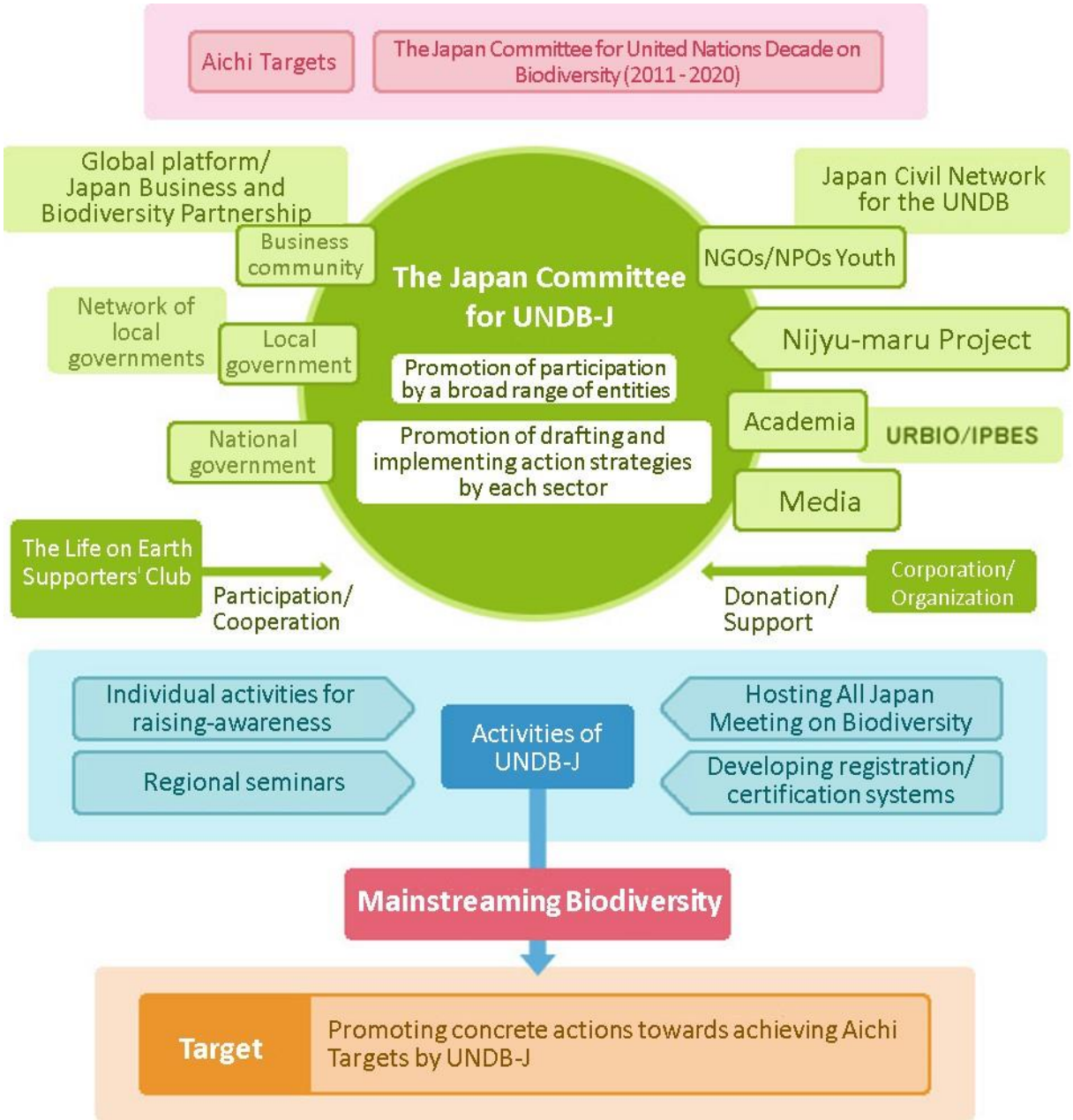
[26] Press Release on December 19, 2017, Ministry of the Environment Japan, Outcome of the 13th meeting of the Conference of the Parties to the Convention of Biological Diversity, 8th meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety and 2nd meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol on Access and Benefit-sharing (UN Biodiversity Conference in Cancun, Mexico, 2016), Annex (1) Japanese translation (HTTP://WWW.ENV.GO.JP/PRESS/FILES/JP/104335.PDF)

○ Japan Committee for United Nations Decade on Biodiversity (UNDB-J)

In order to promote the participation and cooperation of all domestic sectors including state and local governments, business entities, citizens and private organizations and to promote activities for conservation and sustainable use of biodiversity with the aim of achieving the Aichi Targets, the Japan Committee for United Nations Decade on Biodiversity " (UNDB-J) was founded in September 2011.

UNDB-J has been engaged in various activities with voluntary support of its members (7 persons and 31 groups) consisting of the goverment, local public entities, economic circles, NGOs/NPOs,·youth, experts, academics etc.

■Role of UNDB-J



Source: Japan Committee for UN decade on biodiversity website（https://undb.jp/about/）

○Paris Agreement

From November 30 to December 13, 2015, the United Nations Framework Convention on Climate Change - COP21 was held in Paris, France and a COP decision which includes a new legal framwork "Paris Agreement" was adopted. The Paris Agreement sets out the policy of reducing net greenhouse gas emissions by human activity to zero toward its general object of "holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels (, while limiting the temperature increase to 1.5 degrees Celsius above pre-industrial levels would significantly reduce the risks and impacts of climate change)."

The Paris Agreement has characteristics listed below. As a whole, it can be said to be a historical international agreement, for it is a declaration of resolve to proceed and strengthen countermeasures for global climate change (global warming) toward net zero emissions[27].

- “Below 2 degrees”
  The objective of holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels was established. And, taking countries particularly vulnerable to climate change into consideration, the Agreement refers that limiting the temperature increase to 1.5 degrees Celsius would also signigicantly reduce the risks and impacts of climate change.

- Long-term goal
  For achieving the above mentioned object, a long-term goal of reducing global greenhouse gas emissions to such an amount that the ecosystem can tolerate. That means that the emission of greenhouse gases by human activities should be reduced substantially to zero.

- Five-yearly review
  It was decided that each country reviews the targets including emission reduction targets for 2025/2030 submitted to the United Nations and submits revised ones every five years after 2020. The next timing of submission is in 2020 (draft should be submitted 9 to 12 months before the deadline). At that time, countries having 2025 targets will submit 2030 targets and countries having 2030 targets will review them.

- Setting higher targets
  When submitting targets every five years, each country should in principle set higher targets.

- Finance support
  With regard to finance support for countries that need assistance, developed countries should play a leading role in principle. But developing countries are also encouraged to support other developing countries voluntarily.

- Remedy for loss and damage
  To prepare an international framework to provide countries that have not been able to adapt to the climate change and actually got "losses and damage" with remedy.

- Mechanism of verification
  A global mechanism to periodically monitor and report on and conduct verifications globally on activities of each country towards reduction targets or of supporting other countries. The mechanism promotes countries to comply with emission reduction goals indirectly.

Source: WWF Japan website（https://www.wwf.or.jp/）

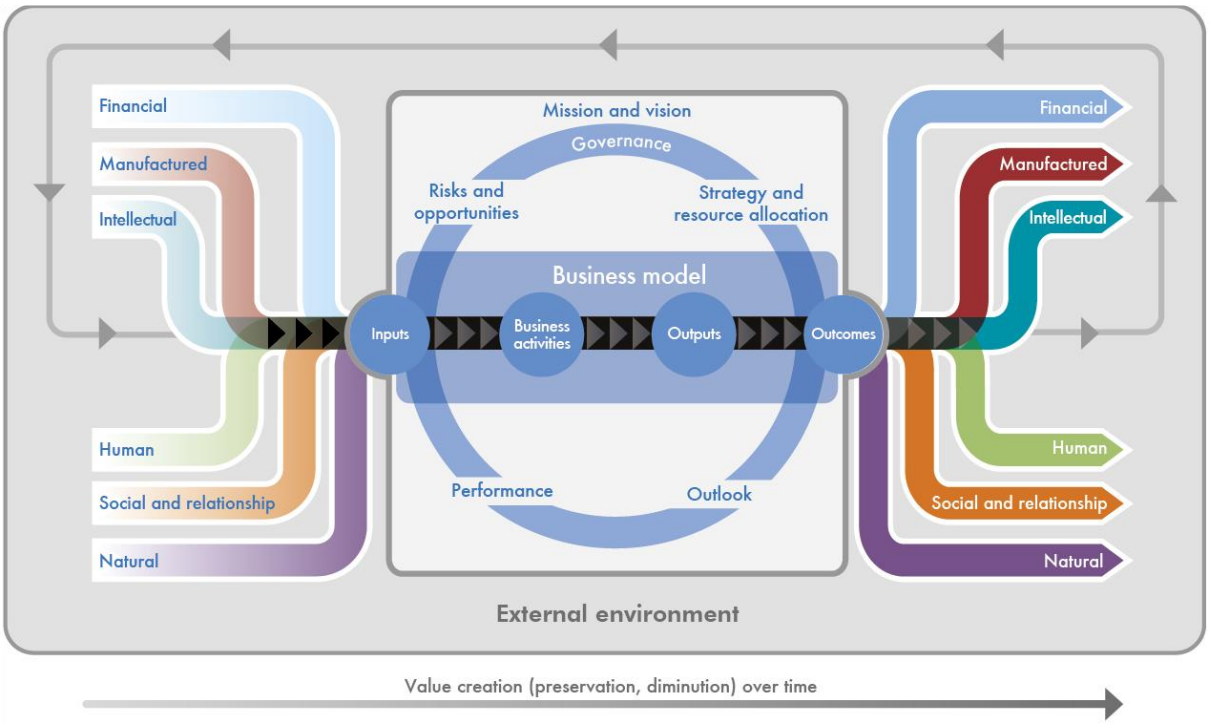
[27] WWF Japan website (https://www.wwf.or.jp/)

○Integrated Report

In making responsible investment including ESG investment, investors need to evaluate investment destination from the viewpoint of ESG elements, and companies need to disclose information for that investment. In recent years, not only conventional CSR reports and environmental reports, but also "Integrated reports" are increasingly compiled and published.

"Integrated reports" are aimed at providing financial capital providers with higher-quality business reporting and at supporting business entities in their decision making for more efficient and productive allocation of capital. Therefore, financial information such as sales, consideration for environment and society and non-financial information such as intellectual assets and governance are integrated into one report and disclosed.

In 2013, the International Integrated Reporting Council (IIRC) announced "International Integrated Reporting Framework"[28] in collaboration with the Global Reporting Initiative (GRI) and others who are developing guidances on environmental reports. IIRC suggested to group the capital into six classes "finance, equipment, intellect, human, society and relationships and nature" and report on each category. What is noteworthy in the context of conservation and sustainable use of biodiversity is that natural capital is included in the six classes. In other words, introduction of natural capital account into integrated report is being required.



Source: "International Integrated Reporting Framework Japan Edition" (December 2013, International Integration Report Council (IIRC), Japanese translation: Japan Institute of Certified Public Accountants)

○Green Procurement

Apart from the trend of ESG investment, integration report and natural capital account, a situation is arising in some countries and regions where sale of products and services to public agencies will not be allowed, if there are no activities on conservation and sustainable use of biodiversity.

For example in October 2012, the Department for Environment, Food & Rural Affairs (DEFRA) in the UK announced with business entities, organisations and NGOs that all palm oil used in the UK will be substituted with palm oil produced with sustainable processes by 2015. In addition, the EU Council approved the revision of EU directives on public procurement in February 2014 to enable goverments to make procurement with consideration for policy conditions on society and environment such as reduction of energy consumption. As a part of the revision, the concept of "total lifecycle cost" of products and services, including carbon footprint, has been introduced. It is well possible that the concept will be applied to the biodiversity sector in the future.

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[28] "International Integrated Reporting Framework", December 2013, International Integration Report Council (IIRC), HTTP://INTEGRATEDREPORTING.ORG/RESOURCE/INTERNATIONAL-IR-FRAMEWORK/ .

○Classification of ecosystem services and examples (detailed version)

Service	Subcategory		Brief Description	Example
Supply service	Food	Crops	Cultivated plants or crops to be harvested as food and bait	Grain, vegetable, fruits
		Livestock	Animals grown for consumption or use at home or commercial use	Beef, pig, chicken
		Fishing business	Wild fish captured by fishing methods other than aquaculture	Tuna, crab, cod
		Aquaculture fishery	Fish, shellfish, crustaceans, seaweeds to be bred and bred in closed environments using ponds, other freshwater or seawater for harvesting purposes	Shrimp, oyster, eel, seaweed
		Wild food	Wild plants and animals to be harvested or captured	Fruits, tree nuts, mushrooms, wild animal meat
	Fiber	Wood, wood fiber	Produced from trees or obtained from natural forest ecosystems, afforestation sites	Logs, wood pulp, paper
		Other fibers (cotton, hemp, silk etc.)	Fibers other than wood collected from the natural environment or grown and harvested by humans, those used for various purposes other than fuels	Textile (clothing), rope
	Biomass fuel		Organisms that have been living until recently, or those used as energy sources	Firewood, charcoal, cereals for fuel production, feces
	Freshwater		Inland water, groundwater, rainwater and surface water used in homes, industries, agriculture	Beverages, industrial process, power generation, fresh water for industrial processes
	Genetic resources		Genes and genetic information used for breeding of animals, improvement of plants and biotechnology	Genes used for increasing crop resistance
	Biochemical substances, natural medicine, medicinal products		Medicines, biociadal products, food additives and other bio-derived substances for commercial use	Alginic acid, ginseng, crown (camphor tree)
Coordination service	Adjustment of the quality of the atmosphere		The ecosystem releases chemical substances to the standby or removes chemical substances from the atmosphere and affects the air quality in various aspects	The lake functions as a source of absorption of sulfur compounds.
	Climate regulation	Global scale	Ecosystems affect the global climate by releasing greenhouse gases, aerosols into the atmosphere or by absorbing greenhouse gases and aerosols from the atmosphere.	Forest absorbs and stores carbon dioxide. Wetlands and paddy fields emit methane gas.
		Local/ Regional scale	The ecosystem affects regional or wide temperature, precipitation and other climatic factors	Changes in land cover, temperature and precipitation.
	Water conditioning		The impact of ecosystems on the timing and scale of water spills, floods and aquifer recharge, especially the potential water retention capacity of ecosystems and regions	Equivalent soil promotes aquifer recharge. The floodplains and wetlands of rivers reduce the flooding at the outflow peak.
	Adjustment of soil erosion		Role of planting in soil retention and landslide prevention	Vegetation such as grass and trees prevents soil loss due to wind and rain.

Service	Classification	Brief Description	Example
Infrastructure service	Water purification and waste treatment	The role of ecosystems to absorb and decompose organic waste in water, the role of assimilating and detoxifying compounds through processes in soil and sediment	Underground microorganisms decompose organic waste.
	Prevention of disease	The effect of ecosystem on incidence and quantity of human pathogens	The unspoiled forest reduces the number of flooded areas to be mosquito breeding sites and reduces the incidence of malaria.
	Pest damage and weed control	Effects of ecosystems on crop and livestock pests, weeds, and diseases trends	Predators inhabiting nearby forests of agricultural land such as bats, toads, snakes eat pests and weeds in crops.
	Pollinator	The role of ecosystems to carry pollen from male flowers to female flowers	Bee inhabiting the forest near the farmland mediates crop pollen.
	Protection from natural disasters	The ability of ecosystems to reduce damage due to natural disasters such as typhoons and storm surges, and maintain the frequency and strength of natural fires	Mangrove forests and coral reefs protect coastlines from large waves. The biodegradation process reduces fuel that burns with wildfire.
Cultural services	Recreation and ecotourism	Enjoy recreation from natural ecosystem	Hiking, camping, bird watching
	Ethical value	Spiritual, religious, aesthetic essential "presence", or any value that people give to ecosystems, landscapes or species	Fulfillment obtained from sacred land and rivers, belief that all species are worthy of protection
Infrastructure service	Nutrient circulation	The role of ecosystems in the flow and recycling of nutrients (nitrogen, sulfur, phosphorus, carbon, etc.) through processes such as decomposition and absorption	Soil animals and microorganisms decompose organic matter and make the soil fertile
	Primary production	Production of biological materials by plant photosynthesis and assimilation of nutrient salts	Algae transform sunlight and nutrients into biomass and form the basis of food chains within aquatic ecosystems
	Water circulation	Flow of water circulating in ecosystem in the form of solid, liquid, gas	Water carried from soil to plants, from plants to the atmosphere, and from the atmosphere to the soil through rain

Reference: Hanson, C., J. Ranganathan, C. Iceland, and J. Finisdore. 2012. *The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities Arising from Ecosystem Change*. Version 2.0. Washington, DC: World Resources Institute, pp4-5, Table 2 Definitions of Ecosystem Services.

○ Outcome of a fact-finding study on business entities' activities in biodiversity field

The Ministry of the Environment conducted a questionnaire survey in 2013 with the aim of grasping the activity status of businesses in the biodiversity field. Here, we excerpted results on 'activities of each business' which are closely related to the Guidelines.

(1) Outline of the study

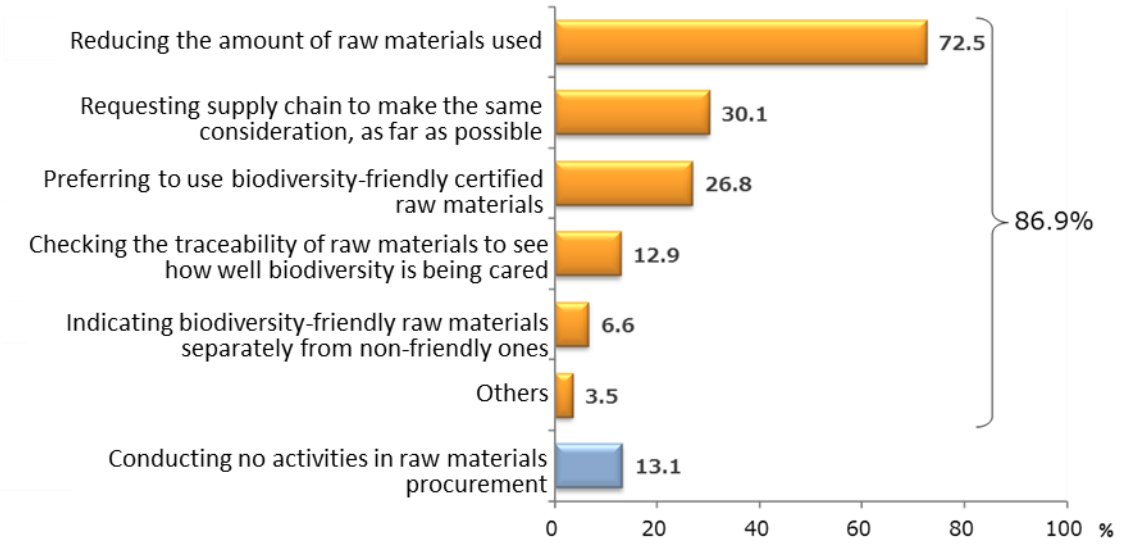
Name	A fact-finding study on business entities' activities in biodiversity field
Content	Consciousness and awareness concerning activities on conservation and sustainable use of biodiversity by business entities. Implementation status of activity on conservation and sustainable use of biodiversity by business entities
Duration	From January 10, 2013 to January 31, 2013
Scope	All the business entities* with more than 500 employees** registered in *TSR Corporation Information File 283 byte* by Tokyo Shoko Research, Ltd., * Other than entities engaged in public service defined in Japan Standard Industry Classification Large S ** With more than 50 employees as for agriculture, forestry, fishery and mining, quarry, gravel-digging industry excluding restricted areas, planned evacuation zone, zone in preparation for the lifting of the evacuation order, and difficult-to-return area due to the Great East Japan Earthquake: · Business entities excluding ones engaged in agriculture, forestry, fishery and mining, quarrying and gravel collecting industry: 6,067 companies · Business entities engaged in agriculture, forestry, fishery and mining, quarrying and gravel collection industry: 351 companies
Method	Send questionnaire to the persons in charge of environment or CSR of each business operator by mail. Request to answer twice by both sending postcards and calling, if necessary.
Answer method	Answer by one of the following methods: ·Answer on the website · Fill out directly questionnaire form and send it by mail
Investigating entity	Office for Mainstreaming Biodiversity, Biodiversity Policy Division, Nature Conservation Bureau, Ministry of the Environment Japan

(2) Summary of the study results (Q5-1 to Q5-9)

①Raw materials procurement

Among the business entities who are engaged in raw materials procurement, 86.9%* are performing some kinds of activities. The most frequent answer is "reducing the amount of raw materials used", and the next most answer is "requesting supply chain to make the same consideration, as far as possible".

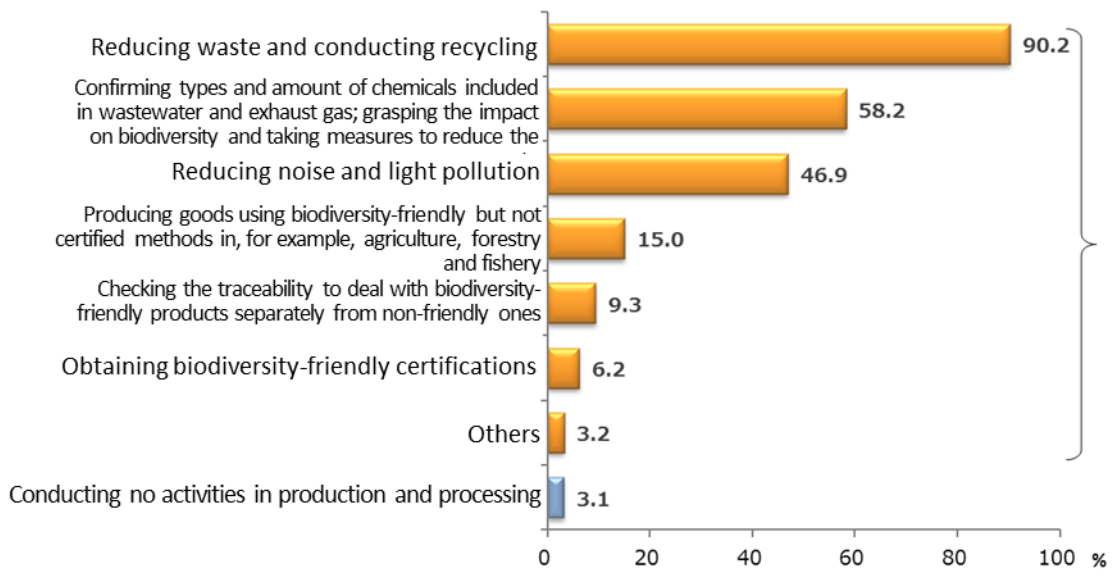
* Percentage to 1,322 companies that chose options other than "not engaged in raw materials procurement".



② Production and processing

Among the business entities who are engaged in production and processing, 96.9%* are performing some kinds of activities. The most frequent answer is "reducing waste and conducting recycling", and the next most answer is "confirming types and amount of chemicals included in wastewater and exhaust gas; grasping the impact on biodiversity and taking measures to reduce the waste".

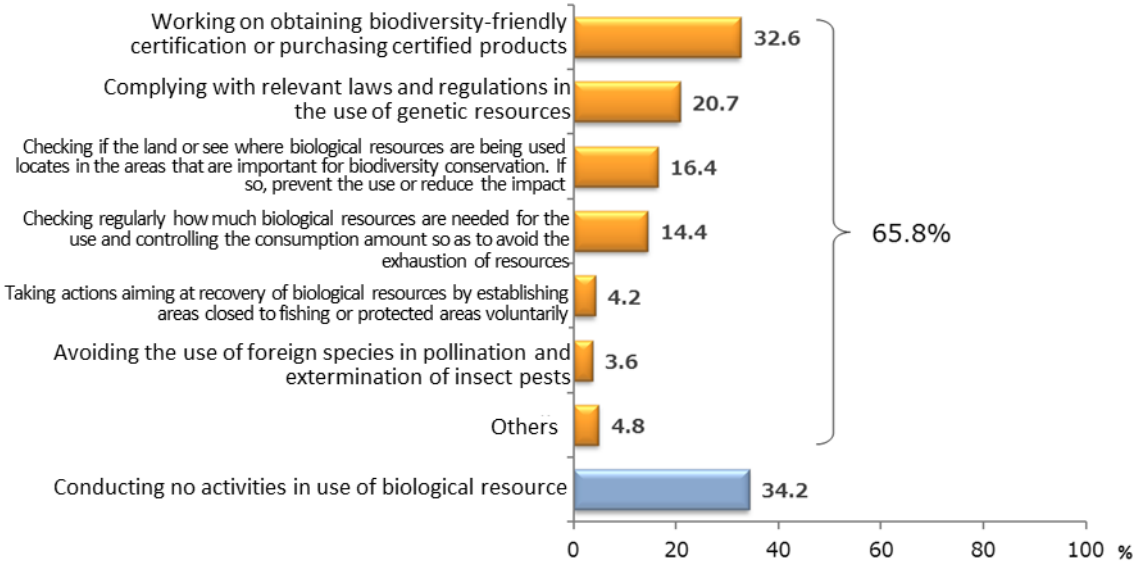
※) Percentage to 1,209 companies that chose options other than "not producing/processing"



③ Use of biological resources

Among the business entities who use biological resources, 65.8%* are performing some kinds of activities. The most frequent answer is "working on obtaining biodiversity-conscious certification or purchasing certified products", and the second most answer is "complying with relevant laws and regulations in the use of genetic resources".

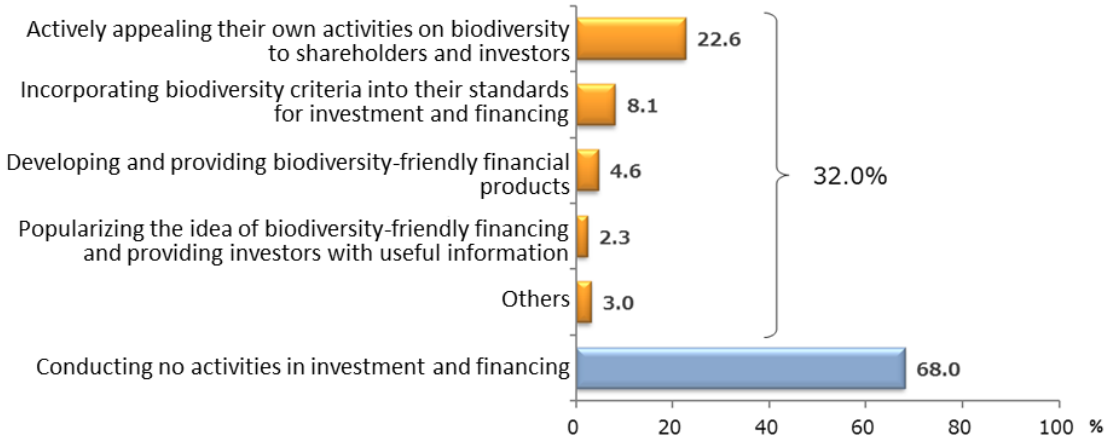
※) Percentage to 743 companies that chose options other than "not using biological resources"



④Investment and financing

Among the business entities who are engaged in investment and financing, only 32.0%* are performing some kinds of activities. The most frequent answer is "actively appealing their own activities on biodiversity to shareholders and investors", and the second most answer is "incorporating biodiversity criteria into their standards for investment and financing".

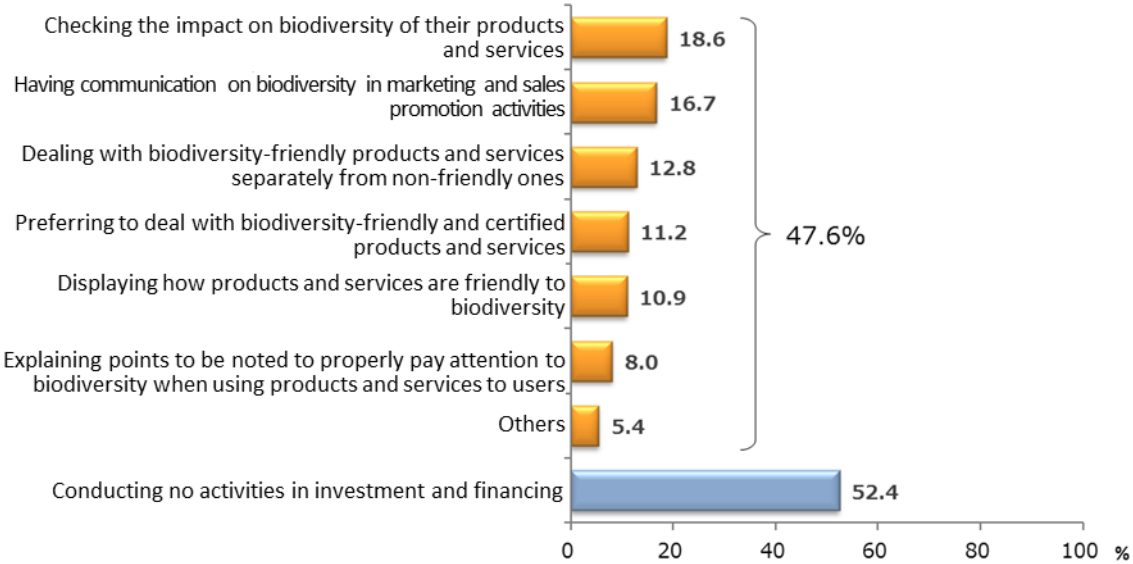
※) Percentage to 855 companies that chose options other than "not doing investment and financing".



⑥ Sales

Among the business entities who are engaged in sales, 47.6, %* are performing some kinds of activities, leaving much room for activities in the downstream of the supply chain. The most frequent answer is "checking the impact on biodiversity of their products and services", and the second most answer is "having communication on biodiversity in marketing and sales promotion activities".

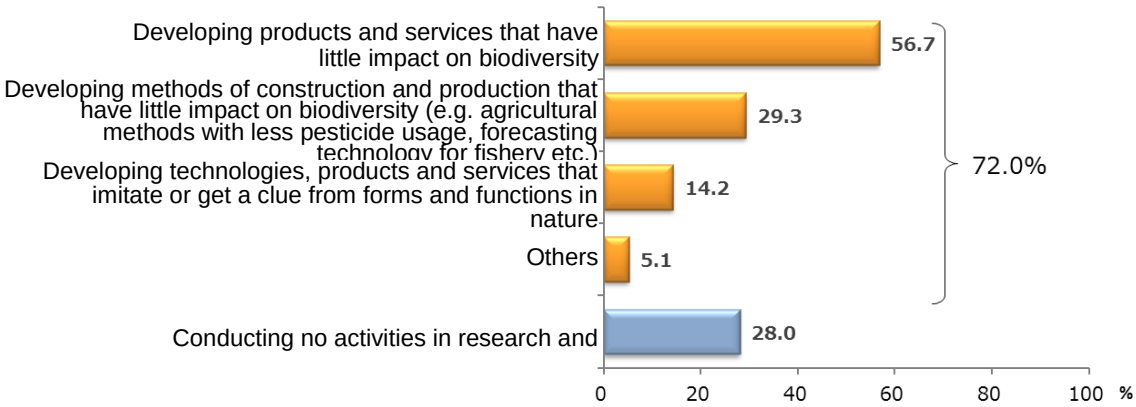
*) Percentage to 1,183 companies who chose options other than "not doing sale".



⑦ Research and development

Among the business entities who are engaged in research and development, 72.0% are performing some kinds of activities. The most frequent answer is "developing products and services that have little impact on biodiversity", and the second most answer is "developing methods of construction and production that have little impact on biodiversity (eg agricultural methods with less pesticide usage, forecasting technology for fishery etc.)".

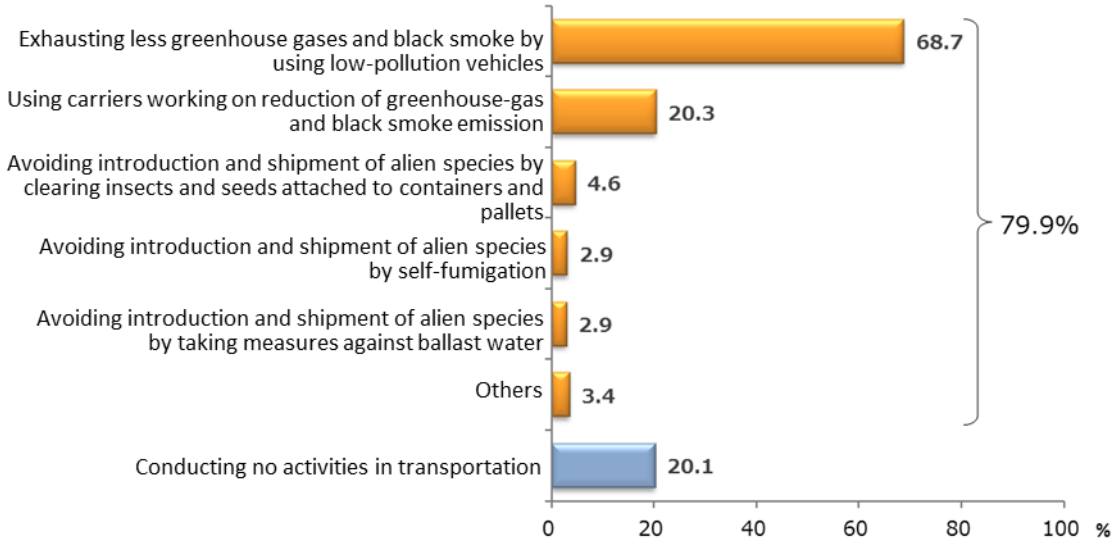
※) Percentage to 1,076 companies that chose options other than "not conducting research and development"



⑧ Transportation

Among the business entities who are engaged in Transportation, 79.9% are performing some kinds of activities. The most frequent answer is "exhausting less greenhouse gases and black smoke by using low-pollution vehicles", and the second most answer is "using carriers working on reduction of greenhouse-gass and black smoke emission".

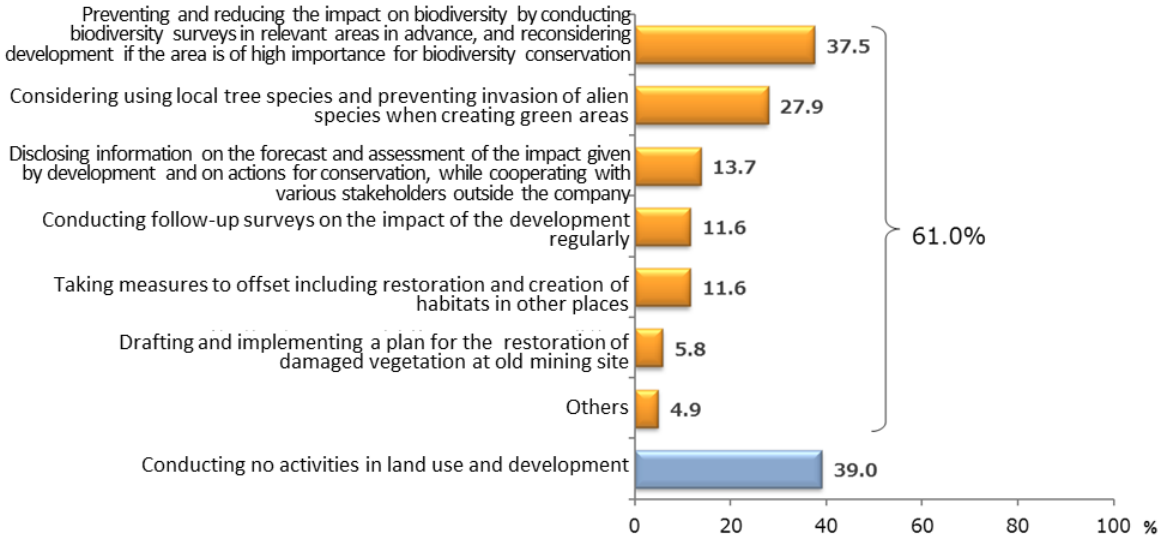
※) Percentage to 1,222 companies that chose options other than "not doing transportation".



⑨ Land Use and Development

Among the business entities who are engaged in Land Use and Development, 61.0 % are performing some kinds of activities. The most frequent answer is "preventing and reducing the impact on biodiversity by conducting biodiversity surveys in relevant areas in advance, and reconcidering development if the area is of high importance for biodiversity conservation", and the second most answer is "considering using local tree species and preventing invasion of alien species when creating green areas".

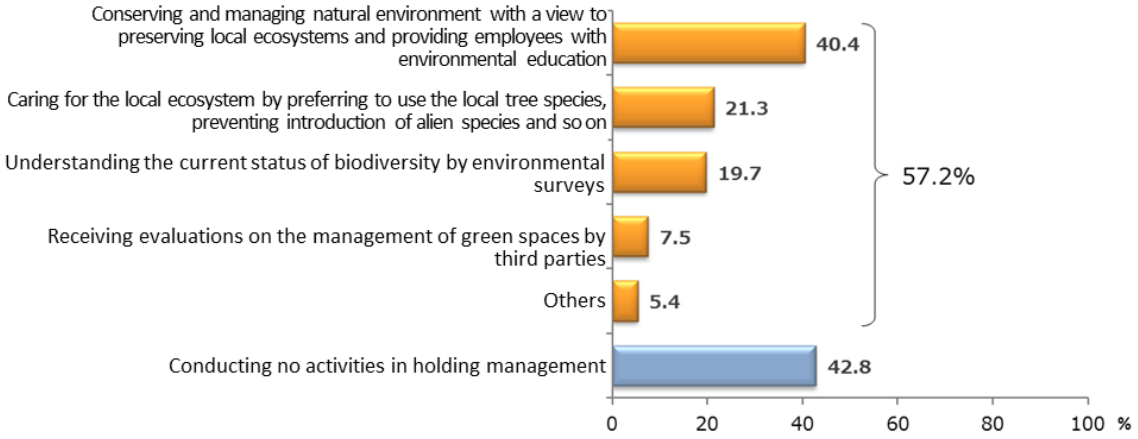
※) Percentage to 779 companies that chose options other than "not conducting land use/development project".



⑨Holding management

Among the business entities who are engaged in holding management, 57.2% are performing some kinds of activities. The most frequent answer is "conserving and managing natural environment with a view to preserving local ecosystems and providing employees with environmental education", and the second most answer is "caring for the local ecosystem by preferring to use the local tree species, preventing introduction of alien species and os on".

※ Percentage to 1,077 companies who chose options other than "not doing holding management"



Guidelines for Private Sector Engagement in Biodiversity

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2nd edition

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Ministry of the Environment

JAPAN

FOR ALL THE LIFE ON EARTH

Biodiversity