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The Introduction of e-DNA into Companies

— Measures to root a biodiversity viewpoint in
business management and corporate culture —

Summary

Because of rising environmental awareness in the world, a number of important international treaties have been agreed. For example, “The Convention on Biological Diversity” was signed by 150 government leaders at the Rio Earth Summit in 1992 for biodiversity conservation, and “The Kyoto Protocol” was adopted at COP3 in Kyoto in 1997 to deal with climate change.

In this context, I wish to place a particular emphasis on the conservation of biodiversity as its importance was previously-unrecognized - especially by Japanese corporations. Consequently, I will start by outlining the benefits to corporations of promoting biodiversity conservation activities and the utility of collaboration with NGOs and other external organizations for further development of such activities. It is particularly worth noting that sending employees to undertake biodiversity related field activities and having them learn through their own “hands on” experience is an effective means for a corporation to promote staff development and encourage awareness of the importance of biological diversity.

Through active participation in environmental activities, company employees will become expert on environmental issues. They will thus share with the company their valuable knowledge learned by exploration and this will, in turn, help to define the corporate vision on environmental affairs. Furthermore, such environmental consciousness, which I will term “e-DNA”, will gradually take root in the corporate culture.

In this article, I will present my view on “e-DNA”, which is the key for the future development of companies. By introducing “e-DNA”, a company may evolve its policies so as to become environment-friendly and thereby improve its competence in an age of growing environmental concern. Also this will surely contribute to the preservation of our vulnerable biosphere.

Introduction

In 1972, the Club of Rome (a research and advocacy group of intellectuals, established in Rome in 1968) published a report entitled “Limits to Growth”. At the time, Dr. Dennis Meadows, a young scientist at MIT (Massachusetts Institute of Technology), and his team reported the results of computer simulations based on the inputs of global

trends in population, industrial capital, food production, resource consumption, environmental pollution and other factors. The broad message was that there are limits to the availability of natural resources on earth and that if humanity takes no measures to contain population growth and continues the pursuit of wealth and economic growth, natural resources commencing with fossil fuels will be depleted. Hence humanity will face a catastrophic situation.

To describe more specifically the catastrophic situation, it was explained that rapid and unexpected changes would occur, such that all of a sudden, population and industrial productivity would uncontrollably fall. Such an outcome could become reality within 50 years. The report was epoch-making as it first set out historical examples of the finite nature of natural resources and then demonstrated future risks and limits. It gave a deep shock to the world public. It demonstrated scientifically that, if humanity should continue on its path of intensive consumption of natural resources and energy, the future of humanity will not necessarily be sustainable.

In this perspective, it is now clear that the destruction of the global ecosystem is now exacerbated by aggressive human activity. As a result, a number of species have been falling into crisis. According to an estimate by scientists, about 5 to 10 percent of species living on earth will be wiped out of existence within 30 years. Under such conditions, UNCED (*Earth Summit: United Nations Conference on Environment and Development*) was held in June 1992 in Brazil, and “The Convention on Biological Diversity” was adopted. Japan has become a contracting State of this treaty in May 1993. 187 countries have acceded to the treaty today. It is finally acknowledged that the conservation of biodiversity is the key for our sustainable future.

There is an alternative, eccentric opinion which holds that, when looking back on human history, we can see that our civilization has developed with the sacrifice of many other species. It concludes therefore that there will be no problem even if we continue to make progress in a similar way.

In fact, all creatures are mutually dependent with others: no species is viable without dependence on others. If biodiversity should be lost, such interdependence will collapse irreversibly. If this type of situation should arise, since the human species is simply one of the species living in the biosphere, the loss of the species on which we depend will surely make us nonviable also.

I. The Present state of Japanese Corporations

In spite of increasing awareness of environmental problems, biodiversity is still a less than convincing issue for ordinary corporations - other than those which are immediately involved with the ecosystem such as in the mining or water resource development industries. In such a situation, what kind of measures do they take to maintain biodiversity?

Viewing broadly the current state of the Japanese corporate sector, it could be said that the level of environmental management systems such as the fabrication of ecological products and the use of production processes with low environmental burden, is top in the world. However, it seems also that, in Japan, CSR (Corporate Social Responsibility) activities focused on biodiversity, which is a worldwide trend, are quite primitive whereas some advanced world enterprises have already started to incorporate a concern for biodiversity in their strategies

In this article, I introduce some perspectives from the visionary companies and specific cases of their conservation activities. I then describe my own observations on business management taking into account the viewpoint of biodiversity.

Japanese companies are world-leaders in the areas of green products and production processes as well as in environmental management systems. Typical green products such as hybrid cars and flat panel TV are enjoying good sales through generating public support. And such production processes as the “zero-emission factory” are well designed, placing special consideration on energy saving and low environmental impact. With regard to the acquisition of ISO standard 14001, Japanese companies are well in advance compared to companies in other countriesⁱ.

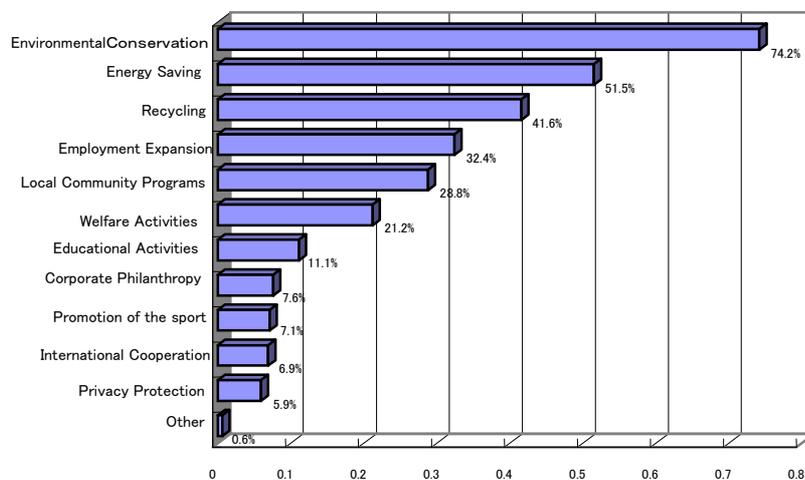
In considering the relation of biodiversity and corporate practice, the dissociation of business practice and conservation activity is somewhat controversial. “Biodiversity” is a comprehensive concept composed of terrestrial and aquatic creatures and plants. And the objective of “The Convention on Biological Diversity” is the conservation of biological diversity and the sustainable use of its components, ecosystems, species and genes. Frankly speaking, the daily business of companies, manufacturing and food industries in particular, almost always threatens biological diversity.

Nonetheless, the present approach of most Japanese companies is mainly to lower their resource consumption and environmental impact aiming at cost saving and reduction of risks. Such efforts are also very important because that will have indirect effects in slowing down the pace of the decline of biodiversity. But in reality, such measures are not directly related to the protection of the endangered species and ecosystems which are rapidly deteriorating.

As a matter of fact, Japanese companies have been predominantly focusing on social action programs. It is more than probable that they consider that environment conservation may not be a precondition for CSR activities. However, consumers have a different perspective on these matters.

Figure 1,

“What kind of corporate activities do you think contribute to society?”



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These are the interesting results of a questionnaire which targeted ordinary citizens to explore how far the image of a corporation is attributable its social contribution. (Fig. 1)

In regard to how far corporate activities may be considered as social contributions, environmental protection and conservation activities receive the highest score of 74%.

Although environmentally-responsive activities such as energy saving and recycling related to their business domain are valued, the environmental conservation activities unrelated to the main business domain were more attractive for citizens. The survey clearly indicates that citizens evaluate a firm predominantly by its performance in relation to environmental conservation activities.

On top of this, the survey also indicates another interesting aspect: that the previously dominant philanthropic activities such as the sponsoring of artistic and cultural activities are now going largely unnoticed by citizens.

II. Biodiversity conservation measures and corporate management

Under present circumstances, the reduction and extinction of species caused by the degradation of ecosystems are becoming exacerbated at a high speed. It would therefore be difficult to contain this trend only by reducing the burdens on the global environment. Accordingly, many researchers and scientists in the environmental field are now investigating the root causes of this deterioration of ecosystems which is leading to the extinction of an increasing in number of species. And they are further working to develop measures to avert such a critical situation.

A human being, as a living body, has arteries that supply the oxygen, energy and nutrients required for physical activity and veins that retrieve body wastes and carbon dioxide. These interact with one another to sustaining life. Likewise, for the long-term survival of human society, which is totally dependent on the global environment, it is absolutely imperative to conduct “venous-like corporate activities” such as energy saving, reduction of CO₂ emission, and the recycling of resources and wastes. And in parallel, it is also essential to study the factors causing the decline of biodiversity so as to resolve the negative factors in a positive manner. Moreover, since the public positively evaluates corporate activity to preserve ecosystems, there is a high potential to upgrade a corporate image by performing environmental protection activities such as the conservation of biodiversity, and so on.

1. Risks associated with management

The following cases could be considered as risks arising from management in the absence of a sound perspective on the preservation of biodiversity.

1) Influence on the corporate brand

There is a problem to be carefully considered: that the delay in engagement with biodiversity preservation could negatively affect a brand image. As already stated, having a head start on biodiversity preservation activity over rivals will enhance the corporate image. Conversely, lagging behind in such activities may have serious consequences for brand value. At present, there are numbers of news items which relate to the issue of “Corporate Social Responsibility” almost every day: hence corporate efforts on environmental conservation are more in evidence than ever before.

2) Influence on operations

A lack of consciousness of biodiversity issues may lead to bad decisions on important business issues, will severe risk of shaking the foundations of the business, such as an adverse impact on operations and/or losing market share and public respect. As for such management risks, we can learn from many episodes of the past. For example, in the mid nineties, the Royal Dutch/Shell Group faced the problem of the ocean disposal of an offshore oil rig, encountering strong opposition from the public. There have for example, also been many conflicts between local residents and companies caused by the construction of factories or commercial facilities which would damage valuable local ecosystems. Such blunders have been replicated in some form or another many times, but essentially they could become avoidable by ensuring beforehand that biodiversity conservation is well considered in the formulation of business judgments.

3) Influence on financing

Financing is a critical factor in corporate management. Recently, many investment funds and investors have tended to invest in companies which place emphasis on effective CSR activities. Also, a number of mutual funds, focused on the excellence of CSR activities, have been established. It is natural that companies which neglect CSR activities get lower market rating, which may in turn lead to difficulties in their financing, and a rise in the cost of funds.

2. Business opportunities

There are surely many opportunities on the positive side. By responding appropriately to the risks as mentioned above, the whole aspect may be changed in a positive direction, towards the improvement of brand value, smoother operations, financing on favorable conditions and so forth.

1) Relationships with the local community

By emphasizing the conservation of biodiversity, the company will establish a good relationship with the local community, interested in regional environmental affairs. In the case that the relationship with a local community is neglected, there are risks of generating protests from the local residents and facing negative campaigns. This can have a considerable impact on costs, caused by the delay and disruption of operations and increase the need for additional investment to meet the conditions required by the residents.

An example of recent date, which is not however directly a cause of corporate activity, is as follows: during the initial development phase of the EXPO 2005 held in Aichi, Japan, a 540ha forest called “Kaishono-mori” was proposed as the event site. But, as the region is richly endowed with nature where goshawks live, the idea was strongly opposed by environmentalists who feared the destruction of nature in the region. As a result, only a small part of the forest was used as the “Seto site”. Finally, there was no other choice but to construct the main site named “Nagakute” by converting an existing public park for young people. As a result, the event site was divided into two locations which caused, even more than the inconvenience to visitors, a delay in the project and a huge impact on the cost.

2) Expansion of the customer base

By demonstrating responsibility in the conservation of biodiversity, a company can appeal not only to existing customers but also to other environmentally-conscious consumers. By opening up such new markets, the company can obtain a higher market share, as well as the premium prices over competing products.

3) Improvements in productivity

By promoting CSR activities including the preservation of biodiversity, a company can

increase company loyalty as well as the morale of its employees. And finally, this will result in the improvement of productivity. Moreover, by positively promoting CSR activities, the company can acquire an improved corporate reputation and attract and retain excellent employees who have a strong concern for corporate social responsibility as well as for global environmental problems.

III. Issues and solutions in promoting the conservation of biodiversity —

As described above, it is feasible that the activity of biodiversity conservation will have an important influence on establishing and maintaining brand value and on several points of business management. Consequently, how to promote biodiversity conservation activity which is not directly related to the business domain, is a very important issue to be considered by gathering wisdom from inside and outside the company.

I will now raise some controversial points concerning the promotion of biodiversity conservation and propose some solutions to overcome the issues.

1. Challenges in promoting biodiversity conservation

In the First place, I would like to cite some of the challenges which may be encountered by companies in promoting biodiversity conservation activities.

1) Lack of specialized expertise

The problem arises from the gap between the company expertise and complex issues of biodiversity. For almost all companies, the conservation of biodiversity is not their own business domain. Therefore, the difficulty is that, even if they plan to promote such activity, there is no expertise on biodiversity within the company.

2) Lack of in-house training systems

Lack of effective in-house training systems is also a problem. For existing environmental management systems, in-house environmental education is often based on reading textbooks and literature and listening to lectures by instructors. However, with regard to the natural environment, living experience is also very important. In the

case that large amounts of second hand information are presented one after another, one drowns in a deluge of information, leading to the possibility of losing sight of sound judgment. Besides, without one's own experience, it is very difficult to nurture the deep sense and conviction of environmental management.

3) The daily environment of employees

What is the real situation surrounding employee? Even employees who are responsible first to acknowledge the environmental issue then to take measures to avoid the problems at the planning phase of each business project, in reality are busy on daily business shuttling between home and office. In such an environment, it is not surprising that they have little time to think about dolphins and whales! With the recognition of such a situation, the effort of the company towards the purposeful implementation of on-site training is extremely important in promoting biodiversity conservation activities.

2. Collaboration with external partners

Here I would like to point out the importance of collaboration with external organizations including NGOs as partners to achieve a breakthrough from the current situation. Several leading companies have already started to seek coordination with external parties in engaging in the environmental protection. These companies are trying to promote their biodiversity conservation activities with such external partners. Likewise, there is a movement of NGOs rather to collaborate with corporations as partners than to antagonize them as opponents.

What kind of benefits can we expect from such collaboration with external organizations?

1) Utilization of special capabilities

The first benefit is that the company can get easy access to specialists and information on biodiversity and bring in the NGOs' special knowledge and skills, which have been accumulated by long experiences, to support their biodiversity conservation activity. The second benefit is the potential of building more sophisticated in-house educational systems for the employees through collaboration with external partners. The third one

is that the partnership with global NGOs enables a company to utilize the NGOs' network, and to perform its global activities in cooperation with its affiliates in other areas. Preparing in-house systems for such collaborations enables the employees to have a good chance to be in close contact with nature through the nature conservation activities promoted by the company.

2) Environmental consciousness of employees

By cultivating such naturalists inside the company, it may be possible to make a transition in the criterion for daily business judgment from "industrial logic" to logic based on "the sense of ordinary people". As the next step, it is worth obtaining consensus at the management level to ensure high appreciation of such employee's experiences and to recognize them in business decision making. Through this manner of collaboration with external organizations, the company may practice high-level biodiversity conservation activity, and it can thus change the employee's consciousness, and what is more, take account of this consciousness in corporate management.

3. Cases of partnership with external partners

Internationally influential NGOs such as WWF and Conservation International, etc. are expressing and promoting coordination with the corporate sector on their side. The following are some examples of partnership between companies and NGOs.

1) RIO TINTO

A British company RIO TINTO is famous for its activities in iron and nonferrous metal mining and refining, and in the production of industrial materials and mineral resources. They make use of partnerships with several conservation groups for their biodiversity conservation activity. The company fully recognizes the importance of information of this sort in carrying out its business, hence they have been continuing a collaborative activity with the UNEP World Conservation Monitoring Center for more than 10 years, and also have established the same kind of agreements with the Royal Botanic Gardens, Kew, Birdlife International, and Earthwatch Institute for several years.

2) Royal Dutch/Shell Group

The Royal Dutch/Shell Group based in Britain and the Netherlands, known as an international oil major, is asking external organizations to collaborate in their site selection operations, collectively analyzing the endemic species and the features of the ecosystem at the selected sites. They have been partnering with the Smithsonian Institution for 5 years and collaboratively working on the assessment and monitoring of the biodiversity in the Gamba Complex in the Gabonese Republic in Africa. The main purpose of the partnership is to obtain accurate assessments from a third party viewpoint of the impacts on the region caused by their business. By accumulating knowledge about the local biodiversity, the company makes use of the partnerships also to build up the capacity of Gabonese government, and to develop their sustainable development plans in genuine collaboration with Gabon.

3) HSBC (employee participation program)

HSBC (Hong Kong & Shanghai Banking corporation), the world 2nd largest financial group, has been conducting a 5 year program with the Earthwatch Institute. They send off 2,000 employees, from their business locations all over the world, to Earthwatch field research projects for about 2 weeks as field assistants. Each employee who finishes the volunteer period will receive 550 dollars of extra budget, and he or she is required to participate in nature conservation projects in the local community.

This program not only support many projects of high quality research worldwide in the field of conservation but it also creates 2,000 in-house nature advocates at HSBC, and at the same time, it produces thousands of nature conservation projects in local communities. Additionally, by disseminating information on this employee participation program inside and outside the company, HSBC has succeeded in improving its corporate image as well as the employees' loyalty to the company.

4. Merits of employee participation projects

The Earthwatch Institute, supporting the above RIO TINTO and HSBC programs, has been promoting volunteer activities consistently for 35 years since its foundation. It has organized and supported the participation of a total of 80,000 people in more than 3,000 field research projects all over the world, generating contributions to scientific research of around 52 million US dollars and more than 10 million hours.

What do the employees experience when they participate in the field research of Earthwatch projectsⁱⁱ?

1) Environmental education

Earthwatch provides the opportunity to an individual volunteer to contribute to and participate in an experience-based educational process on a significant environmental issue. The volunteers support more than 100 research projects by scientists all over the worldⁱⁱⁱ such as in the Amazon, the Galapagos Islands, and so on. And, citizens and company employees are participating in all these projects considered as sort of “classrooms” for environmental conservation.

Through participating in such field research, the employee will practice and experience cutting-edge research on the preservation of wildlife and ecosystems and on other issues. During the period of their involvement, the volunteers live together with the researchers and can absorb their knowledge of every aspect in the field. Through hands-on experience, employees thus absorb the essence of the field research. In this way, employees who have participated in conservation activities around the world, become knowledgeable in relevant research areas and then, they come back to the office, bringing this experience and motivation with them.

2) International exchange

Participation in these research activities gives each employee many benefits^{iv}.

In the first place is international exchange. When we look at the nationality of volunteers, in the case of Earthwatch, Japanese is a minority. Under such conditions, a Japanese participant shares the life experience with like-minded volunteers from other countries for one or two weeks. Such an opportunity is a tremendous experience of international exchange for the participants, and many of them obtain a broader point of view.

3) Experiences in environmental conservation activity

Earthwatch engages citizens in general in scientific field research related to nature

conservation and other disciplines. The participants assist in data collection on the spot, and such data are used as the fundamental base for the scientific papers published by the scientists. In daily life, it is not easy to appreciate the links between global environmental problems and ourselves, but through these activities one can foster directly the sense of concern about environmental matters.

4) Realizing the front line of scientific research

Basically there is no opportunity for members of the general public, who are amateurs, to participate in a field research setting or in front-line scientific research. Earthwatch thus provides a rare opportunity for individuals to learn the methods of scientific research and the reality of the changes taking place in the biosphere, directly from scientists and researchers who have been dedicated to their research for a long time. The participants are indeed directly involved at the scene of conservation activities for wildlife, plants and ecosystems and others, and they can actively engage themselves in such activities. In contrast with classroom lectures or the reading of textbooks, this hands-on experience is the real learning process for environmental science using the whole body and the five senses.

5) Awareness-raising of employees

In addition, the contact between the employees and the wider society is also an important facet of CSR activity: the above mentioned system is also an effective method to promote CSR in practice because everyone can see the face of the corporate member who is working and sweating on the site. There are a number of cases where the employees, engaging in these activities in a wonderful natural environment because of the support of their company, have achieved new insights and felt a sense of fulfillment, renewing themselves in body and spirit. And after their return home, their morale has greatly improved. The employees, having acquired an international way of thinking and obtained a broader point of view, have also recognized the changes in their own perspectives and their conscious mind.

IV. Introducing “e-DNA” into your company

Through this process of learning and experiencing closely environmental matters such as the conservation of biodiversity, environmental experts will be cultivated. When

these environmental expert employees come back to the workplace, they bring many benefits to the company in many aspects. And, they are able to make business decisions on environmental issues in a better way.

Employees participating in outdoor explorations will have had quite rare and extraordinary experiences, and in some cases, have lived in areas far from modern civilization. They talk and share such vivid wonders with their coworkers. Then the narratives will gradually get around the company. This will expand the number of employees sensitized and participating in environmental activities or social action programs, and the company culture will be improved as well.

When employees go through such an experience of environmental related activities and then diffuse such experiences, the meaning and the principle of the environmental conservation activities will take root with each employee as DNA, and with the company by extension; I therefore name it “e-DNA”. By fermenting such e-DNA in its facilities, the company can obtain direct and indirect benefits, as outline below:

1) Active participation in biodiversity conservation

Concerning the environmental impacts caused by their businesses, companies are often fundamentally careful not to surface them. They act on the principle of “covering up the problem”. In such cases, they tend to participate in social responsibility and social action activities in a rather passive way. But, employees, who have e-DNA, proudly act in a dignified manner with a sense of being responsible to promote conservation activities on a global basis.

Earthwatch and other organizations have been producing significant results in the fields of biodiversity conservation and of other disciplines through their long-term activities. Collaboration with such third parties enables both the companies and their employees to have a base to participate in and contribute to such activities.

2) Sustainable use of biological resources

For many companies, the largest factor related to biodiversity is the utilization of biodiversity to generate resources for their products in direct and indirect ways. It is therefore essential to verify whether biological resources are used in a sustainable way

or not, taking account of the whole business flow from upstream to downstream. The central focus of investigation for biodiversity conservation is nature. Therefore steady and extensive field data collection is indispensable. For this purpose, physical and financial support to the field work undertaken by the e-DNA employees is most valuable both in promoting the research itself, and in feeding back the outcome to the business process as well.

3) Strengthening the relationship with stakeholders

It is necessary for a company to measure its level of attainment to business goals and criteria, and also to stakeholders' expectations. Diverse stakeholders have varied expectations for the company. However, the e-DNA employees can sensitively respond to such concerns. The employee himself, by consistently keeping in mind right or wrong and the evaluation of business behavior, can build good relationships with sensitive local communities through collaboration with the groups engaging in the conservation of biodiversity.

4) Strengthening environmental management systems

Most companies create their environmental management systems focusing on measures to deal with environmental matters so as to reduce potential risks and negative impacts on their business.

The strengthening and consolidation of environmental management system can be a valuable tool to contribute to the modification and improvement of their business. And, the involvement of e-DNA employees is indispensable for such tasks.

5) New business opportunities

By actively disseminating such employees' performance inside and outside of the company, consumers may be impressed by the company's efforts in conservation activities, and at the same time, the corporate image can be improved.

Moreover, by reconsidering business from a new viewpoint, it becomes possible for the company to acquire new customers and to find new business opportunities. And, in the case that the company meets higher standards for business sustainability, whenever the

company finds new business opportunities, the employees' performance can be used as an attractive point for investors, and as a result, the company may obtain good financing conditions.

As mentioned above, efforts for the preservation of biodiversity are increasing in importance as the benchmark for the stability of business enterprises. Besides, the conservation of biodiversity is too vital to be left in the hands of government alone. In the future, companies and citizens have to encourage activities with an eye to global environmental conservation and the reform of society, and to carry on this movement to assure the preservation of the vulnerable biosphere.

(This paper was based on the authors' opinion at the panel discussion of the conference, "Sustainable Management Forum of Japan", with additional comments on the collaboration between companies and external organizations^v.)

-Profile-

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ⁱ International Organization for Standardization(2003) The ISO Survey of ISO 9001:2000 and ISO14001 certificates

<http://www.iso.org/iso/en/iso9000-14000/pdf/survey2003.pdf>

ⁱⁱ Kiyoshi Takatori, "Sending employees to the outdoor ecological researches an new approaches to the environmental education-", *Companies and human resources (Kigyo-to Jinzai)* ", (2004) –Only available in Japanese

ⁱⁱⁱ Earthwatch Institute Website Expedition Search

<http://www.earthwatch.org>

^{iv} Earthwatch Insitute (Japan) ,ed., *Earthwatch-researchers of the outdoor investigation and volunteers* (Tokyo: Daiichi-Shorin, 1996) –Only available in Japanese

^v Earthwatch Institute (Europe) / International Union for Conservation of Nature and Natural Resources / World Business Council for Sustainable Deverlopment, *Business and Biodiversity* (Swizerland, WBCSD, 2002)

http://biodiversityeconomics.org/applications/library_documents/lib_document.rm?document_id=716