

Business-Related Activities

Development of biodiversity conservation activities
<Ricoh Co., Ltd. (Global)>

Biodiversity conservation activities at the Ricoh Group first started in 1999, when we started the Forest Ecosystem Conservation Project with environmental NGOs and local communities throughout the world. This was to recognize our responsibility as a manufacturer of products that use a great deal of paper and to engage in the conservation of forest resources. Also in 1999, we started the Environmental Volunteer Leader Development Program to encourage employees to take an initiative in environmental conservation activities. In 2008, when the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)¹ was established, we helped the organization in our role as one of the founding members to advance the goal of promoting cooperation and active involvement of various companies in biodiversity conservation. We evolved the aforementioned Environmental Standards for Paper Product Procurement (established in 2003) that aimed to protect the world's precious natural forests further in 2010 by formulating the Ricoh Group Standards on Wood-based Raw Materials². The standards are applicable to the entire Group and their scope has been expanded to include broader wood-based materials in addition to paper products.

1. <http://www.jbib.org/en/> 2. See page 37.

Mapping of relationship between business activities and biodiversity**<Ricoh Group (Global)>**

The Ricoh Group created and uses the Map of Corporate Activities and Biodiversity that shows the relationship between corporate activities, such as product lifecycle and land use, and biodiversity. 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 are using the discoveries from the mapping to enhance our biodiversity conservation activities in close cooperation with each business division.

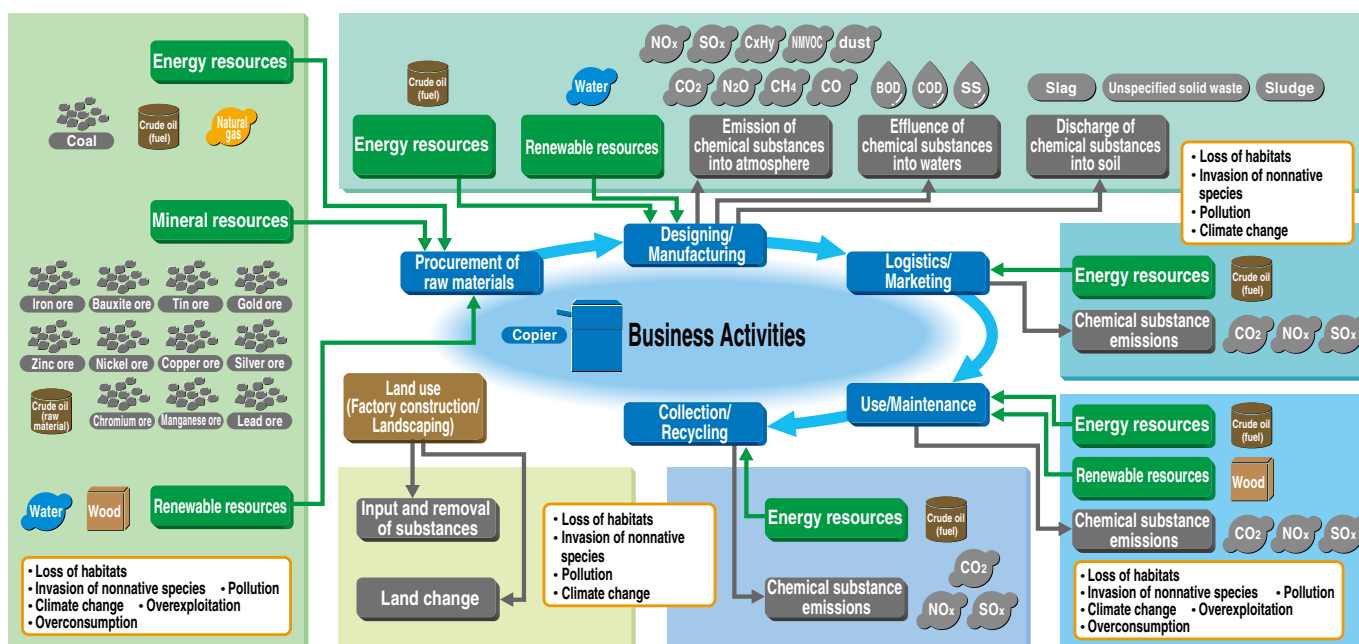
Conserving the biodiversity of office and factory premises**<Ricoh Co., Ltd. (Japan)>**

At the Ricoh Group's office and factories around the world, green space and greenery constitute an important part of these business sites. Some locations even have lush green forests within their premises. To conserve the biodiversity of such natural environment within our properties, the current Environmental Action Plan, effective for three years from fiscal 2011, calls for: (1) higher greenery coverage, (2) removal of invasive alien species, and (3) minimal use of chemical pesticides and fertilizers.

Managing office and factory premises using the IPM method**<Ricoh Ohmori Office (Japan)>**

Continued use of chemical pesticides and fertilizers to maintain green space will make the place an unsuitable habitat for a wide variety of creatures. In light of this finding of our monitoring of the creatures inhabiting the premises of the Ricoh Ohmori Office, we started to manage the green space in the office under the approach of integrated pest management (IPM)*, a comprehensive approach to pest and weed management with minimal use of chemicals, in fiscal 2010. We are currently experimenting with IPM with the aim of recovering the health of the ecosystem of our premises. From fiscal 2011, periodical monitoring of the green space in question will begin to assess the effects and challenges of IPM. Based on the assessment results, we will be formulating a green space management manual and follow the instructions specified therein to maintain greenery in our office and factory premises around the world.

Map of Corporate Activities and Biodiversity (Recycled multifunctional digital copiers)



* Integrated pest management: An integrated approach for pest and weed control, which has been internationally adopted in agricultural operations in recent years. IPM adopts an optimal combination of pest and weed prevention and control means based on the consideration of every possible technique available. It aims to reduce the use of pesticides and other chemicals to minimal levels while at the same time preventing the proliferation and growth of pests and weeds and reducing and

minimizing hazards to human health and the environment. Major IPM components include:

- Physical control: Using light, sound, heat and mechanical methods;
- Chemical control: Applying chemicals derived from natural ingredients;
- Biological control: Introducing natural enemies of target pests; and
- Cultivation control: Improving the quality of soil (e.g. enhancing drainage and ventilation)

Specialist
Interview

INTERVIEW

Providing professional support for Ricoh's ambitious initiative

● GREEN WISE Co., Ltd.

Mr. Yuichi Tamaru, Chief Executive Officer

Supporting pioneering IPM-based corporate greenery management toward biodiversity conservation

Our company offers biodiversity-friendly green solutions to clients through our green management service. In response to Ricoh's request, we are helping them manage the green space in their Ohmori Office by practicing integrated pest management (IPM). IPM is a new approach for pest control, which has been increasingly adopted in the agricultural sector worldwide in recent years. By utilizing nature's disease and pest control mechanisms, it aims to minimize adverse impact on human health and the environment. Ricoh Ohmori Office became the first corporate facility to introduce this method in its greenery management, while IPM has been already adopted in green houses or other closed spaces.

When we started to practice IPM 11 years ago, even our employees—green management specialists—thought that it was impossible to manage green spaces or farms without using chemicals. However, chemically maintained soil cannot support the lives of organisms, apart from an extremely limited range of creatures, and it makes crops less healthy, more vulnerable to pests and diseases over time. Considering these facts and many other negative effects of the use of agrochemicals, such as health risks to plant growers, the extinction of beneficial insects, and the increase of pests' resistance, we concluded that we had no choice but to introduce IPM. After shifting from conventional pest management to IPM, site monitoring and manual pest control is important. During the initial phase after the introduction of IPM, abnormal outbreaks of pests sometimes occur. Regular site monitoring to detect and remove pests will eliminate the need to use chemical agents (naturally derived pesticides may be applied when necessary, though). While this approach is labor- and cost-intensive from short-term perspectives, it will create such an environment that the population of beneficial insects that eliminate pests will increase, the soil will become more fertile, and organisms helping the growth of plants can inhabit the site from the middle- to long-term. Therefore, it is fair to say that IPM is a rational, low-maintenance pest control method, eliminating dependence on chemicals.

I believe biodiversity conservation activities can generate greater effects when implemented broadly on a regional basis. I hope the introduction of IPM at Ricoh, a corporate environmental leader, will promote public recognition of this new methodology and inspire other organizations to follow.

When considering biodiversity conservation, public attention tends to focus on the protection of endangered species.



GREEN WISE Co., Ltd. (Tama City, Tokyo)

(From left)

Mr. Norifumi Hirata
Manager, Business
Development Group,
Sales Management
Division

Mr. Yuichi Tamaru
Chief Executive Officer

Ms. Keiko Takeuchi
Business Development
Group, Sales
Management Division



An example of IPM application utilizing the balance of nature. To grow crops which are likely to become prey to birds and insects, natural herbs, green onions, and other strongly smelling species are often planted around them or an environment where natural enemies of target pests can live is created.

However, achieving optimal balance of overall ecosystems is also equally important. We would like to make our utmost efforts to help Ricoh succeed in their project at the Ohmori Office, and then expand IPM practices to other Ricoh sites and surrounding areas, and eventually to other corporations.

● Mr. Norifumi Hirata, Manager, Business Development Group, Sales Management Division

"For the past 10 years, we have been developing and accumulating the experience and know-how of IPM practices on our own, as the regulatory framework for agrochemicals and organic farming has yet to be sufficiently developed. Crops grown by IPM are fresh and vigorous, with a strong aroma and a deep, distinct flavor. You can tell what the optimal environment for plants should be."

● Ms. Keiko Takeuchi, Business Development and Sales Group, Sales Management Division

"We conduct weekly monitoring of the green spaces of the Ohmori Office, to which chemical agents are no longer applied. Early detection and removal of harmful insects can eliminate the need for insecticide use. So far, the occurrence of pests has been maintained within the expected range."

* Corporate website of GREEN WISE Co., Ltd.: <http://www.greenwise.co.jp/> (Japanese only)