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Business & Biodiversity

The Handbook for Corporate Action

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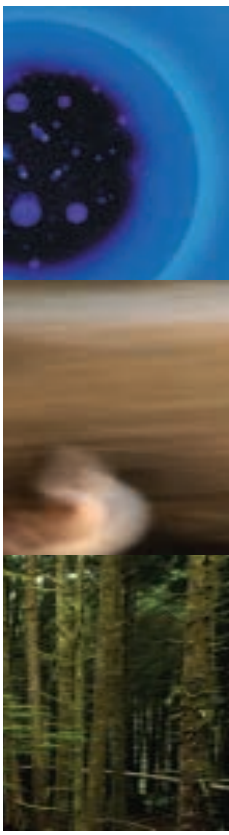

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FOREWORD

Biodiversity is at the core of sustainable development. It impacts the quality of human life and is an essential component to the sustainability of all human activity, including business. Through this Handbook, we wish to attract the attention of the business community to the importance of biodiversity. Whereas the four-page Executive Summary is specifically aimed at business leaders, it is hoped that the main text will address the needs of managers responsible for Health, Safety and Environment or Sustainable Development. For those requiring additional information, the Handbook's companion CD-ROM, inserted in the back inside cover, expands case studies and provides other sources of business and biodiversity information.

In June 1997, the World Conservation Union (IUCN) and the World Business Council for Sustainable Development (WBCSD) produced ***Business and Biodiversity, A Guide for the Private Sector.*** This report provided many insights into why businesses should be involved in the biodiversity debate and suggested how they could best participate. The 1997 Guide is available on the aforementioned CD-ROM.

Earthwatch Europe has since joined this partnership for progress between the biodiversity and business communities to produce an updated report, ***Business and Biodiversity, The Handbook for Corporate Action.***

The Handbook builds on the 1992 Convention on Biological Diversity (CBD), the core international agreement on biodiversity, which recalls the three components of biodiversity, namely: ecosystems, species and genes. The Convention also establishes the three fundamental objectives for biodiversity:

1. **Conservation of biodiversity,**
2. **Sustainable use of biological resources, and**
3. **Equitable sharing of biodiversity benefits.**

Biodiversity is everywhere and it is everyone's responsibility. Biodiversity is more than just the reasoned use of nature and natural resources by the resource extraction companies. Financial institutions, consumer goods companies, service organisations and the information technology sector can all contribute to the fundamental objectives of the CBD. It is the hope of our three organisations that a wider cross-section of the private sector will accept the challenge, integrate biodiversity concerns into their management systems, and take action to conserve biodiversity that is at the core of our planet's ability to sustain future generations.

This Handbook highlights how a number of companies have already begun to do so. In particular, this report:

- **Outlines the business case for biodiversity,**
- **Identifies corporate biodiversity issues, and**
- **Provides guidance for developing biodiversity corporate action.**

The companies and organisations that contributed resources to produce this report are acknowledged on the inside back cover. Many other companies contributed case studies giving tangible evidence of business action to conserve and enhance biodiversity. In addition, we particularly wish to thank University of Oxford's Wildlife Conservation Research Unit (WildCRU) for their unique contributions to this report. This institution has been preparing courses and presentations for business managers – an overview of which is available on the CD-ROM – to assist them in making biodiversity an essential component of daily operations.

Sustainable development is all about meeting the needs of present generations while safeguarding the ecosystems, species and genetic components that make up biodiversity, a crucial factor in meeting the needs of future generations. Earthwatch Europe, IUCN, and WBCSD bring this Handbook to the 2002 World Summit on Sustainable Development as a contribution to the increasingly important agenda on business and biodiversity.

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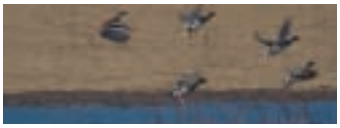

The Handbook's companion CD-ROM provides additional **Business and biodiversity resources.** It includes extended case studies and lists the key institutions and sources of information which can help build a company's capacity for integrating biodiversity into business practice. These resources and updated information will be posted at http://biodiversityeconomics.org/business/handbook.

Chapter 1, **The business case for biodiversity,** shows how responsible biodiversity stewardship is a fundamental business issue. It explains the concept of biodiversity and the three objectives of the Convention on Biological Diversity: conservation, sustainable use, and benefit sharing. It also surveys the risks and opportunities which biodiversity presents to business. Insights from companies demonstrate the business case.

Chapter 2, **Corporate biodiversity issues,** looks at a selection of issues of particular importance to the corporate sector. Lessons learned within the corporate world are presented, covering issues such as protected areas and 'hotspots', threatened and invasive alien species, and access to genetic resources. Advice is also given on how a company can identify and prioritise the biodiversity issues it should address.

Chapter 3, **Corporate biodiversity action,** provides companies with a starting point on how to deal with biodiversity issues and develop a biodiversity action plan. Practical guidance is offered on integrating biodiversity considerations into a company's environmental and social responsibility programmes. A framework for corporate action and key components of a biodiversity action plan are presented, illustrated by examples from corporate practice.

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Executive summary

Biodiversity is the life support system for our planet. There are more than six billion people and the world is heading for eight or nine billion by 2050. Their livelihoods depend on our planet's biodiversity, in the form of ecosytems, species and genetic material. There may be differences of opinion about the rate of loss, but there is no doubt that ecosystems, species and genes are being lost or damaged faster than ever before. Such a loss undermines the natural richness of our planet and threatens our future sustainability. This report acknowledges that business and society in general share responsibility for the current deteriorating situation as well as for solutions to improve it.

Businesses can play a positive role in biodiversity conservation. The good news is that there is a strong business case for integrating biodiversity considerations into core management systems. The bad news is that, to date, not enough companies have done so.

"Healthy ecosystems support healthy people, sustainable companies, sound economies and hence sustainable development."

Biodiversity and sustainable development

Business is all about survival. In order to survive, businesses need to generate profits. But today, many businesses have recognised that long-term sustainable development requires good environmental performance and good social performance as well. This Handbook argues that biodiversity can be associated with good environmental, economic, and social performance. These elements are consistent with the three objectives of the Convention on Biological Diversity: conservation, sustainable use and equitable sharing of benefits.

When businesses first began addressing environmental issues, it was usually in terms of risks or costs. Today, addressing environmental issues can be often considered as a form of competitive advantage, as a way to reduce waste, avoid pollution and, more generally, provide better products and services. This Handbook, however, takes an even stronger stance – businesses ignore biodiversity at their own peril. Just as with other environmental issues, there are biodiversity risks as well as biodiversity opportunities to assess and manage so as to improve corporate performance. Further, there is the ethical case for addressing biodiversity issues. Companies should manage their biodiversity impacts simply because it is the right thing to do.

Sharing responsibility and taking action for biodiversity is not about charity. There is nothing wrong with philanthropy directed at the conservation of nature, but it is no substitute for businesses actively managing biodiversity in their day-to-day operations. This Handbook makes the business case for integrating biodiversity considerations into corporate management systems. Healthy ecosystems support healthy people, sustainable companies, sound economies and hence sustainable development.

The diversity of business

Not all businesses are alike. For the natural resource companies – forestry, fisheries, water, mining, and oil and gas – biodiversity is mostly about ecosystem management. First, such companies have to go where the resources exist. Then they must, in most cases, demonstrate that they know how to extract the resource with the smallest possible footprint or impact on biodiversity. At every step, they have to obtain government permission – the 'formal' license to operate – as well as the 'informal' license to operate from stakeholders (e.g. local communities, NGOs academics).

In the best possible case, an individual company may be able to show that society and biodiversity are better off during and after the project than they were at the beginning. In the worst case scenario, a company may need to demonstrate that damage to biodiversity has been minimised or offset by other actions.

For the forestry industry, based on a renewable resource, the issue is all about sustainable forest management. It is about reforestation, conserving unique habitats, addressing erosion issues, and total management on an endless but sustainable natural cycle. For fisheries, it is all about preventing the depletion of the ocean's renewable resource base by over-fishing with too many ships and using technologies that destroy the marine biodiversity upon

"Biodiversity is everywhere and it is everyone's business."

which the fishing industry depends. For those companies involved in the supply and treatment of water, the issue involves working with all customers to prevent pollution and manage consumption levels. Good management of natural ecosystems ensures clean water for future generations.

For those extracting non-renewable resources, the issue involves using best environmental management practices. Mismanagement of biodiversity can result in losing the license to operate or in jeopardising access to land for future business opportunities. A company that loses its reputation will find it difficult to survive in competitive markets.

For other manufacturing companies, biodiversity issues may affect siting of plant or may drive process changes to ensure that their products do not adversely impact biodiversity. For the pharmaceutical sector, access to biodiversity may provide important remedies for illnesses and provide opportunities for equitable benefit sharing with the owners of that biodiversity. For most of the service industry, addressing biodiversity issues may be primarily about reputation and image, but may also be linked to the consumption of resources which affect biodiversity, as, for instance, in the tourism sector.

In the end, biodiversity is everywhere and it is everyone's business. All companies, even those located in urban areas, can make a positive contribution to biodiversity. Further, most businesses are not global or multinational. There is a need to engage domestic businesses, small and medium-sized enterprises (SMEs), and artisanal operations in biodiversity issues. In the developing world especially, it may be the local companies and SMEs that hold the key to conserving biodiversity. Although most of the Handbook's illustrations originate from large companies, it is hoped that these will motivate the wider business community to 'think globally' and 'act locally' with respect to biodiversity.

Biodiversity and risk

Not adequately addressing biodiversity issues imposes risks on business operations. A company's position in the marketplace – and indeed its profitability – can be threatened by such risks as:

- Challenges to its legal license to operate,
- Disruption of its supply chain,
- Damage to the brand image,
- Consumer boycotts and campaigns by environmental NGOs,
- Fines, third party claims for environmental damages and future environmental liabilities,
- Lower ratings in the financial markets, and
- Poor staff morale and reduced productivity.

Senior corporate managers need to assess and then manage these risks.

Biodiversity and opportunity

Addressing biodiversity issues, however, provides multiple opportunities, including:

- Securing the license to operate,
- Strengthening the supply chain,
- Bolstering stakeholder relationships,
- Appealing to ethical consumers,
- Ensuring sustainable growth,
- Attracting socially responsible investors, and
- Improving employee productivity.

This Handbook provides examples describing each of these business opportunities. It is obvious that these opportunities are the reverse side of the risk coin. Good management always turns risks into opportunities.

Corporate biodiversity action

Having acknowledged the value of engaging with biodiversity, businesses need to develop an action plan and mainstream biodiversity conservation into their activities. There is no one formula that fits all companies, and biodiversity action will need to be tailored to fit specific needs.

"There is no one formula that fits all companies, and biodiversity action will need to be tailored to fit specific needs."

Chapter 3 of this Handbook lays out one possible road map, or checklist, that a company might use in moving towards an action plan. This checklist includes:

1. Make the business case for biodiversity,
2. Identify a senior-level biodiversity champion,
3. Carry out a biodiversity assessment,
4. Secure board-level endorsement,
5. Develop a corporate biodiversity strategy,
6. Develop a corporate biodiversity action plan, and
7. Implement the corporate biodiversity action plan.

Based on the specific findings of the biodiversity assessment and the direction set out in the strategy, the biodiversity action plan should clearly indicate how the strategy will be implemented. It will assign responsibilities for each activity, determine where these will take place, who will be involved, how they will be financed, how progress will be measured and set a clear timetable.

The plan is likely to cover a wide range of actions across various functions and locations of the company. In all cases, the emphasis should be on developing and implementing programmes which integrate biodiversity into existing management systems, and setting biodiversity-related priorities and objectives within the local and national context.

Conclusions

- **Biodiversity is a crucial element in any long-term sustainable development strategy.**
- **There is a business case for integrating biodiversity into core management systems: to manage risks, capitalise on opportunities and meet corporate social responsibilities.**
- **Too many companies have ignored biodiversity for too long – this Handbook provides the rationale to take action on biodiversity now.**

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1. The business case for biodiversity

Increasingly, companies are recognising that incorporating environmental and social concerns into business plans and processes is essential for lasting commercial success. There is a growing recognition, too, of the need for environmental and social responsibility. With respect to 'brown' issues such as pollution and waste, many companies are making significant progress. It is on 'green' issues, however, such as ecosystem management and sustainable use of biological resources, that the responsibilities and indeed the risks and opportunities for businesses, are less well understood. This Handbook introduces the concept of 'biodiversity' and explains why and how businesses should address biodiversity.

The term 'businesses' represents, admittedly, a large variety of actors. It covers such diverse sectors as the extractive industries (mining, oil and gas); the banking and financial sector; biodiversity-based companies such as agriculture, fisheries, forestry and water; tourism; energy; manufacturing to name but a few. Businesses also operate at very different scales: from small artisanal operations, to small and medium-sized companies and global multinationals. The needs of these companies will be very different. Whilst providing a generic vision and framework of business and biodiversity issues, the Handbook recognises this diversity and the need, in the end, to target individualised biodiversity activities.

1.1 WHAT IS BIODIVERSITY?

"Biodiversity refers to the variety of life on Earth."

Biodiversity, as a term, refers to the variety of life on Earth. It includes the vast array of genetically distinct populations within species, as well as the full variety of species and the communities, and ecosystems of which they are part. It is an embracive concept, referring to the entire ecosphere and all of its ecosystems and component living parts and the ecological and evolutionary processes that keep them functioning, yet ever evolving. The Convention on Biological Diversity (CBD), one of the main agreements of the 1992 Rio Summit and adopted by over 180 countries, defines biodiversity as:

"For a business, an ecosystem perspective focuses on where a company's operations sit within the larger ecological landscape."

"the variability among living organisms from all sources including, *inter alia,* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

Since 1992, biodiversity policy-makers and specialists have chosen to look at biodiversity at three levels: ecosystems, species and genes. These levels, or components, also provide a practical way for business to look at biodiversity. The next chapter uses these three levels to explain key biodiversity issues.

Ecosystems

An ecosystem is defined by the CBD as:

"a dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit."

Examples of ecosystems include: forests (e.g. mangrove, tropical moist forests, temperate deciduous forests), grasslands and savannahs (e.g. prairies, pampas), wetlands (e.g. fens, peatlands), marine systems (e.g. coral reefs, inter-tidal zones), and freshwater systems (e.g. lakes, rivers, wetlands).

For a business, an ecosystem perspective focuses on where a company's operations sit within the larger ecological landscape. This could mean a factory situated alongside a tropical river, a sawmill in a temperate rainforest, a drilling platform in the North Sea, a gas pipeline across Arctic tundra, or a tourist resort on a mountain slope.

Businesses also depend on ecosytem services, notably for regenerative and waste assimilation capacities. Yet, many ecosystems are being impoverished by unsustainable activities. Consequently, resources are being consumed at a rate far exceeding their natural levels of replenishment and current waste streams are exceeding ecosystems' waste assimilation capacities – thus, in the end, drawing down natural capital.

Species

A species is a group of organisms formally recognised as distinct from other groups. Typically, species are distinguished by a combination of physical and biological characteristics, and individuals belonging to a species normally breed only with each other. Every species has a unique geographical distribution and has specific habitat requirements. Species can be conveniently divided into categories, such as bacteria, fungi, molluscs, crustaceans, insects, plants, reptiles, amphibians, birds, fish, and mammals. Around 1.75 million species have been discovered so far, although this is only a small percentage of the total thought to exist.

Business activities impact – both positively and negatively – on a vast array of species. Some sectors, such as agriculture and forestry, depend directly on natural resources for their production processes. But all sectors, indeed all people, rely on biological resources – at the very least for food, which comes from plants and animals.

"All sectors, indeed all people, rely on biological resources."

Genetic resources

Genetic material is defined by the CBD as:

"any material of plant, animal, microbial or other origin containing functional units of heredity."

Genetic material includes seeds, cuttings, individual organisms, or DNA. The corporate sector now plays a dominant role in the commercial use of genetic resources and their derivatives. For example, food and beverage manufacturers use botanical genetic material to develop compounds to sweeten or fortify food products. Commercial seed companies collect and develop seed varieties for horticulture. Personal care and cosmetics companies research and develop substances to moisturise, colour or add fragrance to their products. Future breakthroughs in the pharmaceutical industry may depend, to a large extent, on the availability of a sufficiently large genetic base.

"The CBD provides both a global policy platform and guidance on developing voluntary corporate biodiversity strategies and action plans."

The Convention on Biological Diversity

More than 180 countries are Parties to the Convention on Biological Diversity (CBD), the aim of which is to encourage and enable all countries to conserve biodiversity, use its components sustainably, and share equitably the benefits arising from its utilisation. In many cases, biodiversity conservation depends on a willingness to use components of biodiversity sustainably, in ways which support the long-term needs of people whilst maintaining the natural resource base. Parties to the CBD, however, are concerned that biodiversity is being significantly reduced by human activities, including corporate sector activities.

The CBD is a framework convention, meaning that the main decision-making powers lie at the national level with member states. Unlike other biodiversity agreements which list protected sites or threatened species, the CBD provides an integrative approach to biodiversity management. Hence, it is attractive to business because it provides both a global policy platform and guidance on developing voluntary corporate biodiversity strategies and action plans.

1.2 WHAT ARE WE TO DO ABOUT BIODIVERSITY?

More than simply providing a common definition of biodiversity, the CBD clearly lays out what we should do about it. Article 1 states that:

"The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources…"

These three objectives provide a global policy platform for corporate action: 'conservation of biological diversity' addresses environmental sustainability; 'sustainable use of its components' concerns economic sustainability; and 'the fair and equitable sharing of benefits arising out of the utilization of genetic resources' relates to social sustainability.

Since 1992, however, the focus of the third objective has been broadened by policy-makers to biological resources in general – including ecosystems and species as well as genetic sources. Recent decisions of the Convention's Conference of the Parties explicitly refer to "equitable sharing of the benefits from the utilization of biological diversity" in the context of a range of issues from environmental impact assessment, and plant diversity, to ecotourism. With this change in emphasis, the CBD presents an integrated approach to biodiversity management for all business sectors combining:

1. Conservation of biodiversity,
2. Sustainable use of biological resources, and
3. Equitable sharing of biodiversity benefits.

For each of these objectives, companies can develop, where relevant, strategies, policies and action plans which integrate biodiversity into their business model.

Conservation of biodiversity

The CBD recognises the importance of biodiversity everywhere. Owing to the very existence of this global agreement, and because they have a duty of care to protect the environment, businesses – whatever they do and wherever they operate – have a responsibility to conserve biodiversity. Hence, several companies, such as BP and Royal Dutch / Shell Group of Companies (Shell) in the energy sector, Northumbrian Water (part of Suez) in the water sector, and Rio Tinto in the mining sector are developing corporate-wide strategies to address their impacts on biodiversity.

Initiated in 2000, BP's biodiversity strategy focuses on addressing biodiversity issues as an integral part of the way the company does business, through environmental management systems and across the lifecycle of activities and products. This includes operating responsibly, contributing to public policy and conservation projects, promoting research, education and awareness, and engaging stakeholders. In particular, during 2001, the company has worked with many NGOs, local communities, governments and other stakeholders to develop its biodiversity action planning process and to seek views on adopting performance measures for biodiversity.

For many sectors, such as energy, mining, food processing, fisheries and transport, production needs to be managed so as to maintain the integrity of ecosystems. For example, the construction of dams can impact

on freshwater systems – the plant and animal life in riverbanks and fish migrating along watercourses. With these concerns in mind, Electricité de France have introduced technologies such as fish ladders at hydroelectric dams to ensure that the integrity of the freshwater ecosystem is maintained.

Sustainable use of biological resources

In a marked contrast to earlier biodiversity-related conventions, the CBD explicitly recognises the value of sustainable use. According to the CBD:

"*Sustainable use* means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."

In biodiversity-based sectors such as agriculture, forestry and fisheries, sustainable use must be a key feature of the business model. The Tropical Forest Foundation in the United States and Brazil, together with Caterpillar, a heavy equipment manufacturer, have for example developed logging equipment which reduces damages and increases the harvesting efficiency in tropical forests. Compared to conventional logging, this technology also lowers harvesting costs resulting in a higher overall profit margin.

"The equitable sharing of biodiversity benefits requires companies to integrate sound management of biodiversity with social responsibility."

Potentially commercial species are measured one year prior to harvest

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In other sectors, from tourism and entertainment to manufacturing and banking, companies can question whether the biological inputs to their operations are sustainable. More and more companies focus on increasing the sustainability of their supply chain. Paper usage, for instance, is now commonly monitored. Other inputs range from construction material for building to the meals served in the company canteen.

Equitable sharing of biodiversity benefits

The equitable sharing of biodiversity benefits requires companies to integrate sound management of biodiversity with social responsibility. This can be achieved by adopting a stakeholder approach, involving customers, workers, investors, neighbours and others – indeed all those who are affected by a company's relationship with biodiversity.

The Vilanculos Coastal Wildlife Sanctuary, a private tourism company in Mozambique, is committed to creating significant job opportunities for a very poor rural community. It is also partnering with tour operators around Vilanculos to promote best practices for biodiversity conservation.

In 1999, pharmaceutical company GlaxoSmithKline joined forces with Brazilian biotechnology company Extracta to investigate the potential of Amazonian biodiversity for drug development. Both companies are committed to ensuring that they will not collect samples from endangered species. Additionally, if a developed medicine comes from this area, the companies have pledged that one quarter of royalties paid on sales is returned to the source to support conservation, health and education at the community level.

1.3 BIODIVERSITY AND CORPORATE SOCIAL RESPONSIBILITY

"Economic or financial success is inextricably linked to environmental and social performance."

Today, there is widespread recognition within businesses that economic or financial success is inextricably linked to environmental and social performance. Though not yet part of mainstream thinking, all companies, to some extent, are paying attention to what is often referred to as 'corporate social responsibility'. In so doing, companies are striving to address the three dimensions of sustainability – environmental, economic and social – also known as the triple bottom line. Companies, such as Shell and ING Bank have adopted a slogan – planet, profits, and people – for promoting this approach.

The CBD's three objectives are, in fact, fully compatible with perspectives on sustainability including sustainable business, sustainable finance and sustainable development. Moreover, biodiversity is not something in addition to corporate social responsibility, but rather it is an issue that companies need to consider as an integral part of their corporate social responsibility and sustainability programmes.

Compatible perspectives on sustainability

Biodiversity	Sustainable Business	Sustainable Finance	Sustainable Development
conservation	environmental protection	environmental value	environmental protection
sustainable use	economic growth	economic value	economic development
equitable sharing	social equity	social value	social development

1.4 MANAGING BIODIVERSITY RISKS

Biodiversity issues are part of the wider environmental management requirements of companies. Like other environmental issues, the 'drivers' of the business case for biodiversity can be viewed in terms of risks and opportunities. For most companies, the first questions to be asked with respect to an environmental issue often relate to risk. By not addressing biodiversity adequately, a company's position in the marketplace – and indeed its profitability – can be threatened by such risks as:

- Challenges to its legal license to operate,
- Disruption of its supply chain,
- Damage to the brand image,
- Consumer boycotts and campaigns by environmental NGOs,
- Fines, third party claims for environmental damages and future environmental liabilities,
- Lower ratings in the financial markets, and
- Poor staff morale and reduced productivity.

There are numerous examples of biodiversity risk, ranging from Shell's highly publicised row with Greenpeace over the sinking of Brent Spar, an abandoned oil-rig, to the investment of the International Finance Corporation, the private arm of the World Bank Group, in a controversial mining project in Chile.

Managing biodiversity risk is, of course, a key part of the business case for biodiversity. This Handbook, however, takes a more forward-looking approach and views biodiversity not solely from the perspective of environmental compliance and financial risk, but also from the perspective of business opportunity. If properly managed, perceived biodiversity

1.5 CAPTURING BIODIVERSITY OPPORTUNITIES

"Perceived biodiversity risks can be turned into mutually beneficial opportunities for both business and biodiversity."

risks can be turned into mutually beneficial opportunities for both business and biodiversity.

By and large, it may be easier for companies to integrate biodiversity issues into new projects or operations. In the energy sector, for instance, it may be relatively straightforward to link biodiversity with frameworks used in exploration and production, notably social and environmental impact assessments. Conversely, the business case for integrating biodiversity may appear less obvious for existing refinery plants.

The two companies mentioned above are now addressing aspects of biodiversity from the viewpoint of maximising opportunities. Shell has published a Group Biodiversity Standard for all its operations and is implementing it through a clear strategy and action plan. The International Finance Corporation is restructuring its investment practices to the triple bottom line of sustainability, as well as pioneering a new portfolio of biodiversity business investments.

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Clayoquot Sound, Vancouver Island, part of the Great Bear Rainforest

In the Canadian province of British Columbia, the NGO-led campaign "Great Bear Rainforest" resulted in increased international scrutiny of local forest companies by their major customers. To settle the consequent open conflict, a voluntary initiative was undertaken by five forest companies, led by Weyerhaeuser, and four environmental organisations (including Rain Forest Action Network and Greenpeace). Positioned as a change-agent, the project also involved First Nations and other local communities with the purpose of advancing co-designed solutions for meeting the marketplace's demand for ecologically responsible wood products.

Addressing biodiversity issues offers new opportunities for companies to improve their financial performance and promote sustainability. This section highlights a number of key opportunities which are generally applicable to most companies:

- Secure the license to operate,
- Strengthen the supply chain,
- Bolster stakeholder relationships,
- Appeal to ethical consumers,
- Ensure sustainable growth,
- Attract socially responsible investors, and
- Improve employee productivity.

Secure the license to operate

Companies have to invest significant human and financial resources in planning and designing new projects. When these efforts are held up by burdensome planning regulations and government bureaucracy, or when the permission to operate is denied, the costs of doing business increase dramatically. By addressing the CBD's three objectives right from the project design phase, a business is more likely to secure the license to operate. This is because biodiversity's objectives, as previously mentioned, relate directly to the political goal of sustainable development and the demand for corporate social responsibility. Addressing biodiversity also serves to maintain the licence to operate. Indeed, by continuously monitoring change, a company is more likely to identify performance deterioration and address it before losing its license to operate.

Martin Bell, Land Protection Manager of Imperial Chemical Industries (ICI), explains that: "It is in the best interest of any company to support wildlife

"Demonstrating that a particular industry or manufacturing process can co-exist with natural ecosystems is becoming an increasingly important criteria for any company to retain its 'license to operate'."

habitats and conservation programmes within a considerable area of their plant sites. Not only is this conservation of biodiversity an essential part of sustainable development, but demonstrating that a particular industry or manufacturing process can co-exist with natural ecosystems is becoming an increasingly important criteria for any company to retain its 'license to operate', not only nationally but around the world. Also, this demonstration of compatibility with nature conservation is often essential when official approval for new developments on either existing sites or, especially, new sites is being sought".

"Earning community support takes time and genuine, sincere efforts from well-conceived programmes that resonate with community values."

According to Steve Hounsell, Environmental Advisor of Ontario Power Generation, an electric power generation utility, biodiversity programmes are typically very small investments relative to the benefits gained in image: "Groups that would be normally critical of OPG (and our fossil emissions) are very much 'on-side' and supportive of this programme. They have become our allies. This helps to earn a 'community license to operate' and although it is difficult to monetise, the loss of community support can, conversely, spell the demise of operations. Earning this support takes time and genuine, sincere efforts from well-conceived programmes that resonate with community values. In general, issues regarding biodiversity, and many other environmental effects, are simply externalised, as traditional economics and market mechanisms do not adequately account for these effects. Until those fundamental changes occur, we will have to use softer approaches, such as brand image, to make a case for this much-needed work".

BP considers that demonstration of good performance and its environmental reputation has helped the consultation process for new developments and access for exploration surveys. In one case, this allowed a full seismic survey to take place – using special techniques to prevent damage to sensitive habitats – with subsequent benefits of obtaining good data, allowing fewer drilled wells due to accuracy of location, and better production rates.

Strengthen the supply chain

Companies require sustainable supply chains. As biological resources feature in all production processes, the sustainable use of these resources is a key feature of every company's supply chain. By not adequately addressing this issue, a company entails the risk of not being able to sustain demand. In addition, a company's reputation may be damaged by associating with the procurement of biodiversity related products from unsustainable, protected, or sensitive resources.

Sainsbury's, a UK supermarket chain, has an established system for promoting biodiversity amongst its agricultural suppliers. The company promotes farm biodiversity action plans to ensure that its supply chain is having the smallest possible negative impact on biodiversity. To ensure a sustainable supply of some organic products, it is even managing its own organic farms.

Mail order retailer Otto Versand, has begun to use organic cotton in its products. As well as buying from organic growers in Turkey, the company has contracted a local ecological cotton mill that filters pollutants out of dyes and washing water.

Pioneer Hi-Bred International, a seed company belonging to DuPont, has developed an information system

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White-tailed deer reintroduced in Santa Maria Wildlife Conservation area

"A company's commitment to biodiversity can be communicated, understood and even experienced by people whose natural environment is enhanced by the company's biodiversity performance."

whereby diagnostics of plant diseases can be delivered upon demand to Pioneer personnel or customers. By providing answers concerning unknown or unrecognised plant symptoms, accurate and timely treatments can help reduce crop losses and the amount of biodiversity-threatening pesticides that might otherwise be applied.

Bolster stakeholder relationships

The general public may relate and respond more readily and ably to 'on-the-ground' biodiversity issues, such as wildlife conservation, than to other less tangible environmental impacts such as carbon dioxide emissions and ozone depletion. Thus, a company's commitment to biodiversity can be communicated, understood and even experienced by people whose natural environment is enhanced by the company's biodiversity performance.

Northumbrian Water has produced and disseminated its own detailed biodiversity action plan which is reviewed every five years and includes monitoring requirements for species and habitats. The company reaches out to its community by speaking about biodiversity at conferences, seminars and workshops both regionally and nationally, hence building brand reputation.

CEMEX, a building materials company, has been working on the reintroduction of native species – white-tailed deer, wild turkey and mule deer – in Mexico's Santa Maria Wildlife Conservation Area. Recognition by government, NGOs, educational institutions and wildlife managers of this work has improved the company's environmental image and business relationships.

Appeal to ethical consumers

A company can gain a range of market benefits from being 'biodiversity responsible'. Benefits include: maintaining or increasing market share, either through attracting more traditional customers or by gaining access to new customers and markets; differentiating products in a commodity market; and, in some cases, receiving a price premium over competing products. In several sectors, such as forestry, fisheries, agriculture and tourism, certification schemes have been established with, at their core, sustainable use and the protection of biodiversity.

In the forest sector, one such scheme is the Forest Stewardship Council (FSC) which certifies forest product companies according to an internationally agreed set of principles and criteria. Similarly, more than 700 companies – including B&Q, Collins Pine, Home Depot, Ikea and Svea Skog – are members of Forest

Santa Maria Wildlife Conservation Area: reintroduced wild turkeys

© CEMEX

and Trade Networks which have made concrete commitments to sourcing forest products from FSC certified sources.

In addition to FSC, there are a number of other forestry certification schemes, notably the Pan European Forest Certification Scheme (PEFC), the Sustainable Forestry Initiative (SFI), the American Tree Farm Standard (ATFS) and the Canadian Standards Association (CSA). Nonetheless, to date, less than 2.5 percent of world forests are certified, representing less than 100 million hectares. The International Mutual Recognition Framework for Forest Certification, supported by WBCSD, aims at getting all independent third party verified certification processes to agree on high quality standards that encourage sustainable forest management.

A certification scheme has also been developed in the fisheries sector. The Marine Stewardship Council (MSC) was established through a partnership between Unilever and WWF to create incentives for sustainable fisheries practices. The MSC has developed a label which lets consumers know that seafood bearing the 'Fish Forever' logo comes from well-managed, sustainable fisheries. More recently, the Marine Aquarium Council (MAC) was launched to certify the harvesting and trade of ornamental fish.

There are also numerous labelling schemes for organic agricultural products – many of which are linked to the International Federation of Organic Agriculture Movements (IFOAM), as well as an increasing use of certification practices in the tourism sector. All of these are related to biodiversity and to servicing the growing ethical consumer market.

Ensure sustainable growth

By integrating biodiversity into a company's social responsibility programmes, indeed into its overall management policies and practices, new business opportunities can be identified and exploited. Attention to conservation issues at the ecosystem or landscape level can help to position the company and its operations to maximise environmental and social linkages. Attention to sustainable use issues, especially with respect to the supply chain, can identify new resources as well as resource use efficiencies. Attention to the inter-linkages between a company's natural environment and its stakeholders can open up new opportunities for mutually beneficial relations with customers, employees, neighbours and others.

Over the past year, Starbucks, a US coffee house chain, has developed a set of coffee-sourcing guidelines for purchasing beans that have been grown and processed by suppliers who meet strict environmental, economic and social standards. With the input from Conservation International's Center for Environmental Leadership in Business, Starbucks is encouraging and expanding the production of sustainable coffees, such as shade-grown coffee. Since 1998, the project has focused on the Chiapas region of Mexico, where it promotes the cultivation of shade-grown coffee underneath primary forest canopy and offers farmers fair-trade prices.

"New developments are setting up a common framework for reporting on the social and environmental dimensions of corporate behaviour."

Walking the Talk,
Charles O. Holliday Jr.;
Stephan Schmidheiny;
Philip Watts.
2002 Greenleaf Publishing Limited,
Sheffield UK

Attract socially responsible investors

A growing number of institutional and individual investors prefer to invest in socially responsible businesses. Consequently, a wide array of socially responsible investment funds is now offered by companies such as Friends Provident in the UK and Calvert in the US. Behind these funds, there is an emerging analytical capacity to evaluate the social and environmental performance of companies. New developments, such as the Global Reporting Initiative, are also setting up a common framework for reporting on the social and environmental dimensions of corporate behaviour.

By integrating biodiversity into their business models, companies can attract the growing supply of socially responsible capital. For listed companies, there are now several indices drawing attention to a company's environmental performance.

During the past five years the DJSI consistently outperformed the DJGI in bull and bear market situations

For example, the Dow Jones Sustainability Indexes, developed by the Swiss-based Sustainable Asset Management, provide a performance ranking on sustainability for some of the world's largest companies. An analysis of the performance of the Dow Jones Sustainability Index (DJSI) World reveals that it has systematically outperformed the Dow Jones Global Index World.

In the UK, the FTSE4Good index includes companies which have a credible record on the environment, human rights, social issues and stakeholder relations, while the Business in the Environment (BiE) Index of Corporate Environmental Engagement compares the extent of company engagement in environmental management and how they assess and manage their performance in key areas of environmental impact, including biodiversity.

Socially responsible ranking programmes and associated investment funds can now be found in most countries with established capital markets. In the US capital market, Business for Social Responsibility has estimated that one eighth of investments are subject to some form of social or environmental screening.

The Terra Capital Fund is the first private equity fund to focus on biodiversity investments. It is a regional fund for Latin America and, to date, has invested in medium-sized biodiversity businesses in the agriculture and non-timber forest sectors. Banks, such as Triodos and Rabobank in The Netherlands, are also directly investing in biodiversity-related projects, particularly in the sustainable agriculture sector.

1.6 MAKING THE BUSINESS CASE FOR BIODIVERSITY

"By making a strong and transparent commitment to biodiversity conservation, companies will be able to improve the quality and the productivity of their workforce."

Improve employee productivity
Responsible companies are more likely to attract and motivate good workers. Today's entrants into the workforce prefer companies that are committed to environmental and social responsibility. Hence, by making a strong and transparent commitment to biodiversity conservation, companies will be able to improve the quality and the productivity of their workforce.

"The business case for biodiversity is based on an understanding of what we are to do about biodiversity."

Shell has recognised the importance of biodiversity responsibility in human resource management. In a widely screened series of biodiversity-related television commercials, it has profiled young, highly competent technical staff who are passionate about conservation and sustainability. These commercials appeal directly not only to customers but also to prospective job applicants.

In efforts to build the capacity of employees to address biodiversity issues in the workplace, several companies have established partnerships with conservation NGOs focused on staff development. The mining company Rio Tinto, for example, has partnered with the Earthwatch Institute to support employees as conservation volunteers. As well as building employee capacity through working with biodiversity issues in challenging environments, the programme encourages returning volunteers to act as conservation champions within the company.

To summarise, the business case for biodiversity is based on an understanding of what we are to do about biodiversity. The three biodiversity objectives of (1) conservation, (2) sustainable use, and (3) equitable benefit sharing can be fully integrated into a company's social responsibility or sustainability programme. In addition, the concepts behind biodiversity and sustainable development can be more readily integrated into core business strategy and management.

In so doing, a company can manage biodiversity risks and, more importantly, capture biodiversity opportunities. Key biodiversity opportunities include:

- Securing the license to operate,
- Strengthening the supply chain,
- Bolstering stakeholder relationships,
- Appealing to ethical consumers,
- Ensuring sustainable growth,
- Attracting socially responsible investors, and
- Improving employee productivity.

By capturing these biodiversity opportunities, a company will enhance its performance. For each business – depending on what it produces, how it produces, for whom it produces and importantly where it produces, the array of biodiversity issues, risks and opportunities will differ. Nevertheless, for most companies, there is a 'win win' business case for biodiversity – benefiting both the business and the natural environment in which it operates.

2. Corporate biodiversity issues

Biodiversity entails a vast and complex array of issues for businesses, some of which present risks, others opportunities. This chapter introduces a selection of key biodiversity issues grouped according to the components of biodiversity: ecosystems, species, and genes. Case stories from companies are used to illustrate these issues.

2.1 ECOSYSTEM ISSUES

Key issues for business at the ecosystem level include: protected areas, natural World Heritage sites, wetlands, biodiversity 'hotspots', and ecosystem restoration.

Protected areas

The CBD defines a protected area as:

"a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives."

Protected areas are of relevance to companies for at least three reasons:

- Companies need to consider carefully a protected area's objectives before operating in or adjacent to it,
- Protected areas offer insights for companies on the management of their land holdings, and
- Companies can link their biodiversity management systems to networks of protected areas in the wider landscape.

The IUCN protected area classification comprises six categories, ranging from strict nature reserves/wilderness areas (category I) to managed resource protection areas (category VI). The latest (1997) United Nations List of Protected Areas, based on IUCN management categories, represents almost 8 percent of the land surface of the world. For some business sectors, protected areas represent a clear element of uncertainty. For instance, the conservation community has, by and large, been more favourable to tourism developments than to mining operations within protected areas – a recent resolution of the IUCN membership even called for prohibiting exploration and extraction of mineral resources in categories I-IV. Mining, Minerals and Sustainable Development – a project initiated by WBCSD, supported by the Global Mining Initiative, and managed by the International Institute for Environment and Development – addressed this issue and sought to understand the contribution of mining to sustainable development, including biodiversity conservation.

IUCN Protected Area categories

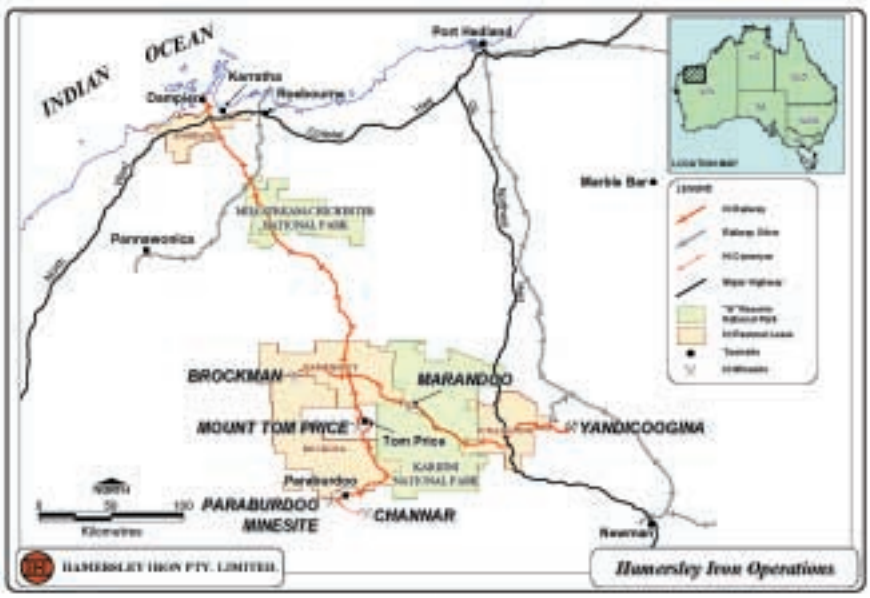
Category	Management objectives
I. Strict nature reserve/wilderness area	Protected area managed mainly for science or wilderness protection
II. National park	Protected area managed mainly for ecosystem protection and recreation
III. Natural monument	Protected area managed mainly for conservation of specific natural features
IV. Habitat/species management area	Protected area managed mainly for conservation through management intervention
V. Protected landscape/seascape	Protected area managed mainly for landscape/seascape conservation and recreation
VI. Managed resource protection area	Protected area managed for the sustainable use of natural ecosystems

A Brazilian industrial conglomerate, Companhia Vale do Rio Doce (CVRD), has been developing usage master plans for protected areas that fall within its land. In the Carajas Mineral Province, CVRD has usage rights to 400,000 hectares of land situated within three separate protected areas, resulting in a large contiguous tract of land containing forests of high conservation value. The usage plan involves defining particular zones for:

- Prospecting, mining, processing, transportation and marketing of mineral resources,
- Encouraging forest resources stewardship, where feasible in ecological and economic terms,
- Protecting water resources, scenic attractions, historical and archaeological sites, and biodiversity,
- Scientific research and other activities related to environmental education, and
- Recreation and tourism, particularly ecotourism.

In Western Australia, Rio Tinto's Hamersley Iron subsidiary manages pastoral cattle stations adjacent to Karijini National Park on the basis of long-term rehabilitation and ecosystem maintenance. The completion of fencing, removal of cattle watering points, control of alien species, and co-operative burning have enabled to limit cattle access and reduce grazing pressure in parts of the pastoral stations adjoining the park. The goal of this effort is to establish a zoned land-use pattern in line with UNESCO's Man and Biosphere reserve concept.

Hamersley Iron Operations map



Natural World Heritage sites

The Convention Concerning the Protection of the World Cultural and Natural Heritage was adopted in 1972. The Convention provides for the designation of natural or cultural sites of "outstanding universal value" as World Heritage sites, with the principal aim of fostering international co-operation in safeguarding these protected areas.

With support from the Global Environment Facility, a private eco-tourism company in Indonesia, P.T. Jaytasha Putrindo Utama, has joined forces with The Nature Conservancy to manage the Komodo National Park – a World Heritage site famous for its dragons. This is an example of a clear 'win-win' for business and biodiversity. For other sectors besides tourism, however, including mining, forestry and fisheries, their potential role within World Heritage sites is less clear and needs to be addressed on a case-by-case basis.

Wetlands

Wetlands, the world over, are highly threatened ecosystems. The Convention on Wetlands of International Importance Especially as Waterfowl Habitat was signed in the Iranian city of Ramsar in 1971. The Ramsar

Convention – to give it its familiar name – provides a framework for international co-operation for the conservation of wetlands, which the Convention defines as:

"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine waters, the depth of which at low tide does not exceed six metres."

Member states designate sites to the 'List of Wetlands of International Importance', of which there are presently more than 1,000 covering an area exceeding 80 million hectares. Increasingly, there are cases where business actions have enhanced the conservation status of wetlands. In an analog way to the CBD, the Ramsar Convention also incorporates the concept of sustainable use – or "wise use" – which it defines as the "sustainable utilization of wetland resources in such a way as to benefit the human community while maintaining their potential to meet the needs and aspirations of future generations".

Launched in 1998, the Evian Project brings together food company Danone Group (and its mineral water company Evian), the French Global Environment Facility, the town of Evian, and the Conservatoire du Littoral in a partnership in support of the Ramsar Convention. Activities include transfer of know-how, training for wetland site managers, support for pilot projects on water and health, awareness-raising for decision makers, and support for Ramsar communication material.

Several of Northumbrian Water's reservoirs – such as Abberton (1000 hectares) and Cow Green (310 hectares) – are Ramsar sites and EU Special Areas of Conservation, as well as Sites of Special Scientific Interest. Recognising their importance for supporting bird populations and plants of national and international importance, the company has put in place biodiversity action plans that are directed at the conservation needs of priority species and habitats. Part of their overall company biodiversity strategy, these action plans have been developed in co-operation with partner organisations and are an integral part of the company's ISO 14000 environmental management system. Specific actions include research and monitoring, ecological management, species protection and habitat creation schemes, as well as training and reporting.

In Canada, consulting company CH2M HILL determined that the construction of a treatment wetland for polishing effluents from the Town of Brighton, Ontario wastewater lagoons, was the most cost-effective option to reduce contaminant loading to the adjacent Presqu'île Bay. The wetland around the perimeter of the Bay, a 'Class 1' (provincially significant) wetland,

Town of Brighton Treatment Wetland operates year-round to reduce contaminants leading to Presqu'île Bay

Geelong Plant wetland with cumbungi

"Viewing biodiversity conservation in terms of sustainability means recognising the actual value of biodiversity to all people, everywhere."

is renowned as a staging area for large numbers of migrating waterfowl. The construction of the six-hectare engineered wetland also proved more cost-efficient in terms of capital, operations and maintenance than other conventional treatment solutions.

At its Geelong plant in Australia, chemicals company Rohm and Haas developed a self-sufficient closed system to provide water to the facility while at the same time creating a habitat for aquatic wildlife. Not only is the wetlands-based system cost-effective, but it reduces pressure on the Melbourne sewage system and provides a natural habitat for native bull rush species cumbungi.

Banrock Station is a 1700-hectare wine estate in South Australia which devotes only 250 hectares to grape cultivation.The rest has been returned to its original natural state, including 900 hectares of wetlands. In addition, the company donates a proportion of revenues to wetland projects in each country where its wine is sold. These conservation efforts have added value to the wine's brand, through increased loyalty and expansion of the market to a broader audience, such as birdwatchers.

Hotspots

Leading conservation organisations have developed a variety of global schemes to prioritise biodiversity conservation areas. These tools include 'hotspots', 'eco regions', 'endemic bird areas', and 'centres of plant diversity'.

Hotspots

Generically, the term 'hotspot' denotes an area of high concentrations of naturally occurring species, high levels of threat to species diversity, or both. The term is used in a formal sense by Conservation International to promote 25 very large particular hotspots (such as Madagascar or the Cape region of South Africa) which they recognise as the "richest and most threatened reservoirs of plant and animal life on Earth".

Shell is supporting capacity building in the Flower Valley Project, a priority project for the local Cape Action Plan for the Environment. The goals of the project are to conserve the biodiversity of the lowland fynbos, to generate livelihoods in an area of high unemployment through sustainable harvesting of the fynbos flowers and associated micro-enterprises, such as paper-making, and to improve the quality of life of farm workers and their families through the provision of education and health services.

The hotspots approach is somewhat controversial in conservation circles because a focus on hotspots may seem to suggest that biodiversity is only important where it occurs at high levels. On the contrary, viewing biodiversity conservation in terms

Panoramic view of Banrock Station

of sustainability means recognising the actual value of biodiversity to all people, everywhere. One's own backyard will always be one's own hotspot. Nevertheless, hotspots schemes do identify areas in need of particularly significant biodiversity management.

"One's own backyard will always be one's own hotspot."

The Global 200 Ecoregions

Another hotspots scheme is the WWF Global 200 Ecoregions list. It attempts to identify the Earth's most biologically outstanding terrestrial, freshwater and marine habitats. These are large areas of relatively uniform climate that harbour a characteristic set of species and ecological communities. They range from arctic tundra and temperate forests, to tropical forests and coral reefs, and include species from every major habitat type. The purpose of the list is to ensure that the full range of ecosystems is represented within regional conservation and development strategies, so that conservation efforts around the world contribute to global biodiversity priorities.

"Hotspot schemes provide a means for companies to prioritise their approach to biodiversity conservation within business systems."

Endemic Bird Areas

An endemic species is one that is confined to a particular area, often a country. For example, the Kagu bird is only found naturally in New Caledonia. More than 2,500 restricted-range bird species (almost a third of all birds) have ranges of less than 50,000 square kilometres. BirdLife International has identified 218 such areas around the world where the distribution of at least two of these restricted-range species overlap. These Endemic Bird Areas are particularly important for conserving birds. Most of these regions are found on islands or in mountainous regions and more than 80 percent are forested. Analysis reveals that more than 20 percent of the world's bird species, including 75 percent of all threatened species, are confined to just 1 percent of the world's land surface.

Centres of Plant Diversity

The three volumes that make up *Centres of Plant Diversity,* published by IUCN and WWF, are the product of information gathered from hundreds of botanists from around the world. They identify some of the most important sites for plants worldwide and thus offer help to national conservation authorities and global conservation organisations in implementing biodiversity objectives.

Each of these hotspot approaches identifies areas of highest biodiversity value. Collectively or individually, they provide a means for companies to prioritise their approach to biodiversity conservation within business systems. Several conservation organisations, such as UNEP's World Conservation Monitoring Centre, offer mapping services for businesses based on these schemes.

Ecosystem restoration

There is increasing recognition that negative biodiversity impacts of a company's activities need not be permanent. Companies can undertake to rehabilitate sites when they are no longer used, either by regenerating habitats or by preparing the site appropriately for its next intended use.

In March 2000, Lafarge, a manufacturer and supplier of building materials, entered into a 'partnership for conservation' with WWF. The aim of this partnership is to develop biodiversity aspects of the company's strategy for restoration of quarries, by reinforcing its environmental policies,

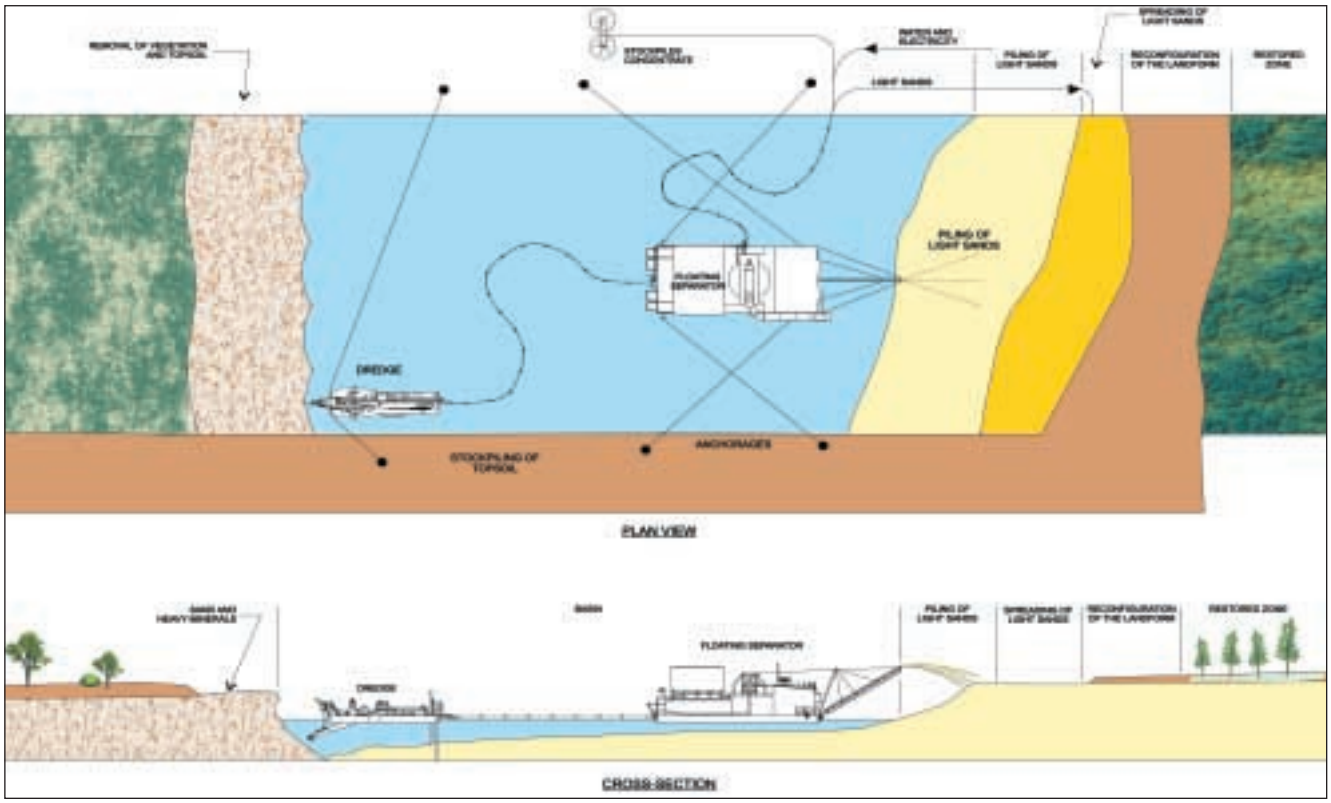
developing specific strategic environmental guidelines, and communicating its activities to its global operations staff, competitors and media.

Skanska, a Swedish engineering and construction company, has been contracted in a number of projects notably to enhance biodiversity. At the former Silver Bell mine, located in the Rocky Mountains region, Skanska was asked to plan the remedial work and undertake the clean-up of sixteen hectares consisting of waste material from silver, lead, copper and zinc. One year after completion, a significant increase in vegetation and wildlife activity has occurred. In the Poplar Island Chesapeake Bay project, off the east coast of the US, Skanska designed and built supporting dikes surrounding the island in order to prevent future erosion.

Many companies in the resource extraction industry, for example, have experience of rehabilitation and restoration, though requirements and opportunities to undertake rehabilitation vary widely between countries. Where the intention is to regenerate habitat, this may be an important consideration in deciding what mitigation measures a company should take.

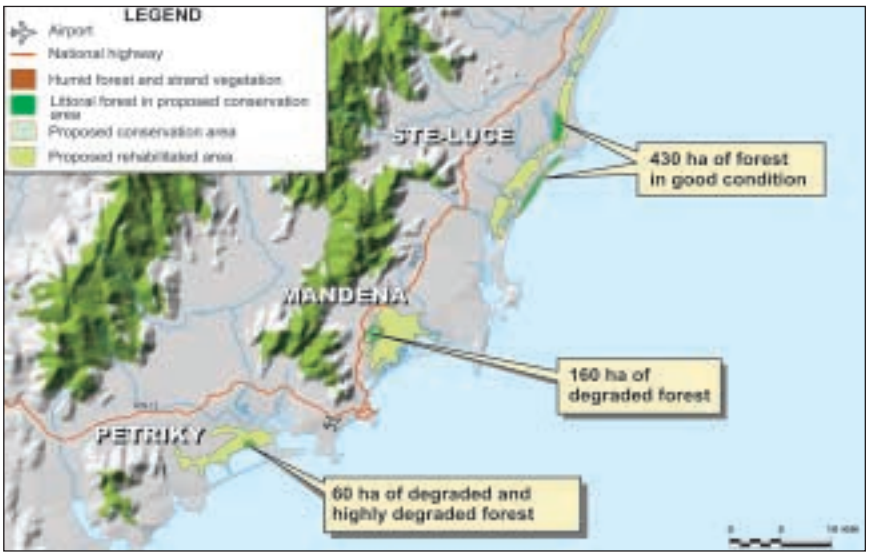
As a mining company, Rio Tinto's operations can attract public scrutiny. At an advanced project which is evaluating a dune sand deposit of ilmenite in south-eastern Madagascar, the sensitivity of biodiversity and social issues have required an integrated approach to assessment and project planning. Areas on or close to the proposed mine are rich in biodiversity, though this is being degraded by unsustainable resource use by communities and is not legally protected. This work, undertaken by subsidiary QIT Madagascar Minerals, has been informed by Rio Tinto's

Steps in the ilmenite mining process planned on south-east coast of Madagascar



previous experience in ecosystem assessment, rehabilitation and community development at its Richards Bay Minerals mine in South Africa.

Planning of landscape restoration at ilmenite mining project, on Madagascar's south-east coast



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As part of a land reclamation process at its Florida titanium mines, DuPont engaged with a local high school to develop an innovative and cost-effective method to enhance the original wetland. As the project was implemented, there was a realisation that the reclamation efforts could be done in a way that would benefit both the business value and the public perception of DuPont in the local community. This process has enabled US$ 1.5 million savings compared to other reclamation processes.

© DUPONT

Enhanced wetland at Florida mine site

Asturcon Ponies grazing at Asturias Plant

© DUPONT

2.2 SPECIES ISSUES

There are also key biodiversity issues for businesses at the species level including threatened species, species threatened by trade, migratory species, invasive alien species and species reintroduction.

Threatened species

Species are perhaps the easiest level at which to monitor biodiversity. Hence, much conservation activity is focused on threatened species. The IUCN Species Survival Commission produces 'The Red List of Threatened Species', the most comprehensive and authoritative global survey of plants and animals at risk, containing assessments of more than 18,000 species from around the world. Red List species are categorised according to levels of threat, assessed on a set of five quantitative criteria based on biological factors related to extinction risk, which includes rate of decline, population size, and area of distribution.

The five highest IUCN categories of threat are: Extinct, Extinct in the Wild, Critically Endangered, Endangered, and Vulnerable. Of the species surveyed in 2000, more than 11,000 are recognised as threatened with extinction. These include the golden-headed lion tamarin in South America, the green pitcher plant in the USA, and the snow leopard in Central Asia.

In Spain, science company DuPont has developed a land maintenance scheme on its Asturias fiber manufacturing site that helps conserve native endangered varieties of domestic species – namely the Asturcon ponies, Xalda sheep and highland cattle. Financial sustainability of the programme is achieved by selling surplus stock. Each breed released on the site is championed by an association of breeders – primarily farmers – and a strong partnership

Immediate surroundings of small water ecosystems are significant habitats for many threatened plant species

Red-cockaded woodpecker Southlands habitat

between the site and the local community has emerged. This initiative demonstrates that working on biodiversity *in situ* can generate both company and community value.

ChevronTexaco, an oil company, is participating in the Western States Petroleum Association's major endangered species Habitat Conservation Plan in California. Some 800,000 hectares of land will provide for sustained conservation of 30 threatened plant and animal species. At the company level, ChevronTexaco is completing its own habitat conservation plan – 6,000 hectares of high-quality habitat for several protected species, with 10 percent of the land left for development of operations.

Recognition of biodiversity's influence on the functionality of forests has led forest and paper products company International Paper to develop its red-cockaded woodpecker mitigation bank project. The project, which aims at encouraging more effective conservation of such endangered species on private lands, allows for greater flexibility of land-management. While establishing red-cockaded woodpecker conservation areas at its forests in US state of Georgia, the company is able to harvest timber in less desirable woodpecker habitat on its other lands. The potential banking of these conservation credits to other private landowners – seeking to mitigate for destruction of wood-pecker habitat – gives the company the opportunity to turn the presence of the woodpeckers into a business asset.

Following the Finnish 1997 Forestry Act – which promotes maintaining biodiversity in commercial forests by identifying and protecting specific small forest habitats – UPM-Kymmene, a forest and paper products company, developed its biodiversity strategy. It included a survey to identify the key biotopes in the company-owned forests. As some of the key biotopes for threatened species were not protected by law, the company then mapped and protected 12,000 small habitats. The inventory identified small water ecosystems – such as brooks, springs and small lakes – as providing habitats for an important part of threatened species.

Species threatened by trade

International wildlife trade is estimated to be worth billions of dollars annually and to include hundreds of millions of plant and animal specimens. The products are diverse, ranging from live animals and plants to a vast array of wildlife products derived from them, including food products, exotic leather goods, wooden musical instruments, timber, tourist curios and medicines.

The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), in force since 1975, establishes lists of threatened species for which international commercial trade is either prohibited or regulated via permit systems to combat illegal trade and overexploitation. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

For example, American ginseng (*Panax quinquefolius*), native to North America, has been collected in the wild and exported for decades, mostly to East Asia where it is processed for international and domestic use in traditional Chinese medicines. Consumers believe that American ginseng root aids and restores bodily

functions and acts as a tonic for the lungs, stomach, spleen and heart. The plant is listed in CITES Appendix II, and export of both wild-collected – which typically consist of whole roots – and cultivated specimens – generally sliced or ground up – requires the approval of the US or Canadian governments. In this context, a Canadian company, Pajor's, supplies sustainably-grown ginseng products.

Migratory species

The Convention on the Conservation of Migratory Species of Wild Animals provides a framework within which member countries can act to conserve migratory species and their habitat. Over 80 species, including birds, primates, whales and bats, are listed as 'threatened' by the Convention, which also precludes commercial development and restores habitat areas for migratory species.

South end of the Wildlife Management Area: sycamore and cottonwood plantations adjacent to migrating waterfowl habitat

In the state of Kentucky, the requirement, under the North American Waterfowl Management Plan, to protect and manage 20,000 hectares of new waterfowl habitat was seized by forest and paper products company MeadWestvaco as an opportunity to participate in the creation of the first public-private waterfowl area in the US. The creation of the MeadWestvaco Wildlife Management Area enabled the company to pursue its operations at its Kentucky paper mill, located along the Mississippi waterfowl flyway. The large increase in waterfowl numbers on the 1,600-hectare reserve shows that intensively managed forests can co-exist with biodiversity-sustaining habitats.

Invasive alien species

Biological invasions by alien species pose a threat to biodiversity integrity throughout the world. Global patterns of travel and transportation have enabled many species to travel vast distances to areas where they had never previously occurred and where, once established, they threaten native species that are unable to compete with or resist their impacts.

Invasive alien species are found all over the world but are particularly a problem for island ecosystems, which have evolved under the most isolated conditions. In addition to their impact on native biodiversity, direct economic costs run into billions of dollars annually.

Invasive alien species, for example, constitute a critical issue for the shipping industry. Although carrying and discharging ballast water is an unavoidable component of international shipping, it is also a potent means of introducing alien coastal species to a new environment where they may become invasive. It is estimated that the Eurasian zebra mussel, for example, introduced to the North American Great Lakes, causes losses of US$ 4 billion each year because dense colonies physically impede equipment such as cooling water intake pipes.

A Norwegian company, Det Norske Veritas (DNV), is developing a new information-based system to tackle this problem. It identifies the potential for introduced species to be established in a new environment by assessing biogeographical compatibility and using principles of risk management. The system considers a vessel's 'discharge destination' and gives clearance for

© OPTIMARIN

OptiMarin's OPTIMAR Ballast treatment System – based on solid separation and ultra violet irradiation – installed aboard the Regal Princess

© WMC

The Greater Bilby, a threatened species reintroduced to the Arid Recovery Reserve

a voyage where ballast exchange does not represent a threat. Voyages that are not given clearance are provided with risk-reducing recommendations. This system is being used by Statoil, a Norwegian oil company, which has contracted DNV to monitor shipments of liquid petroleum gas.

US-based Princess Cruises has installed experimental ballast water treatment systems on its Cruise Liners, in conjunction with Norwegian company OptiMarin and US company Hyde Marine. In Sweden, BenRad Marine Technology, a subsidiary of Wallenius Line, is also developing ballast water treatment systems. In addition to these and other private sector initiatives, the International Maritime Organization has published guidelines, is drafting regulations for ballast water transfers and, through its Global Ballast Water Management Programme, is assisting developing countries to tackle the issue.

Species reintroduction

In some cases, companies may have an opportunity to support reintroduction programmes, returning species to natural habitats from which they have disappeared.

The Arid Recovery Project is a joint initiative of WMC, a mining company, the University of Adelaide, the South Australian Department of Environment and Heritage, and a community-based group. A decade of intensive biological monitoring at the company's Olympic Dam mine established that feral and domestic animals had more serious and widespread effects upon the local environment than did mining-related disturbance. The rabbit, cat and fox-proof fencing of a 60 square kilometre area enabled the restoration of local ecosystems and the reintroduction of stick-nest rats, burrowing bettongs, bilbies and western-barred bandicoots. The initiative has contributed to a better public perception of WMC's environmental credibility, with long-term gains for the company in terms of market access, license to operate, and staff and shareholder pride.

Building materials company CEMEX acquired 33,000 hectares of the Mexican Maderas del Carmen Protected Natural Reserve with guarantees as to its conservation, scientific research, habitat remediation and wildlife reintroduction. Through the efforts of the El Carmen Pilares Nursery, for example, the desert bighorn sheep is being reintroduced.

El Carmen Project: official BigHorn release on November 24, 2001

© CEMEX

2.3 GENETIC RESOURCE ISSUES

At the genetic level, key issues for business are related to intellectual property rights and bioprospecting, and genetically modified organisms and biosafety. These topics are highly complex and controversial.

Intellectual property rights and bioprospecting

Intellectual property rights (IPRs) are private legal rights which apply to the intangible human contribution that goes into producing a particular technology.

Opinions vary widely over whether IPRs promote or undermine biodiversity conservation. On one hand, IPRs can assign value to what was previously common property, stimulating interest in the sustainable use of biological products. On the other hand, serious concerns have been raised in relation to the use of biological resources in the pharmaceuticals and agricultural industries. Bioprospecting for genetic resources, for instance, has captured considerable public and corporate attention in recent years.

Novartis, a healthcare company, has over the years undertaken substantial research and development in natural products in view of discovering potential new drugs. In line with the Convention on Biological Diversity, Novartis adapted its bioprospecting policy to recognise the principle that countries have sovereignty over their genetic resources and that benefits derived from future products based on natural compounds should be shared. In 1994, Novartis started its first large bioprospecting project based on these principles, with partners in Mexico, Panama, and India. Novartis also collaborated with Chinese researchers to develop an anti-Malaria treatment based on *Artemisia annua*, a common medicinal plant in China. Currently, the drug is manufactured by a local company and marketed by Novartis.

In the US, the National Parks Service is developing benefit sharing agreements which allow the return of benefits to parks when the results of research lead to a commercially valuable discovery. Biotechnology company Diversa, for example, has signed such an agreement with Yellowstone National Park. Yellowstone is of interest to the company since it contains 60 percent of the world's terrestrial geothermal features and therefore many thermophilic organisms.

Genetically modified organisms and biosafety

The transfer and manipulation of genetic materials from plants and animals, through biochemical means, has brought many advances to medicine, agriculture and industry. At the same time, there is concern about the potential risks to biodiversity and human health posed by genetically or living modified organisms (GMOs or LMOs). Since the stability of genes inserted into plants is not always known, they pose a threat to non-target species, as well as potentially creating imbalances in long-established food webs, resulting in 'genetic pollution' of naturally occurring species and eventual loss of biodiversity.

GMOs are used by Novo Nordisk in the microbial fermentation required to produce therapeutic proteins, an active ingredient of the company's pharmaceutical products. Although Novo Nordisk believes it has a sound management system, it has recognised the need for public debate on genetic engineering. As a result, the company has collaborated with the Danish Society for the Conservation of Nature to produce a set of teaching materials explaining both the advantages and risks of this technology.

The Cartagena Protocol on Biosafety

Adopted in January 2000 as a supplementary agreement to the CBD, the Cartagena Protocol on Biosafety aims at "ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements". Its advance informed agreement procedure, for instance, enables countries to make informed decisions when considering imports of such organisms.

Fermentation factory in Kalundborg, Denmark

2.4 IDENTIFYING AND PRIORITISING BIODIVERSITY ISSUES

"Companies operating in different sectors, in different regions and at different levels along the supply chain will have unique sets of priority biodiversity issues and associated risks and opportunities."

Biodiversity can be a dauntingly complex topic. There is a vast array of issues at the ecosystem, species and genetic levels as this chapter has indicated. There are also many issues with respect to the biodiversity objectives of conservation, sustainable use and equitable benefit sharing. Companies operating in different sectors, in different regions and at different levels along the supply chain will have unique sets of priority biodiversity issues and associated risks and opportunities.

A biodiversity management matrix can be used to identify these priority issues. It is unlikely that a company will have significant biodiversity issues in all nine cells of this table. Nevertheless, a critical step in developing a corporate biodiversity action plan will be to decide on the key biodiversity issues which should be addressed. By completing such a table, a company may identify a cluster of issues relating to a biodiversity component, such as ecosystems, or to a biodiversity objective, such as benefit sharing. The challenge will be to develop a biodiversity action plan to address these issues.

The biodiversity management matrix: a tool for corporate action

Objectives \ *Components*	Ecosystems	Species	Genes
Conservation			
Sustainable use			
Benefit sharing			

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3. Corporate biodiversity action

There are many ways in which a company can address biodiversity issues. These range from raising employee awareness of conservation issues and managing environmental impacts, to enhancing the biodiversity value on their land-holdings and using biological resources sustainably. This chapter provides a general framework for action through which companies can assess the business case for biodiversity, identify and build on existing practices which address biodiversity, and integrate biodiversity action throughout their business model.

3.1 KEY STEPS FOR CORPORATE ACTION

To address biodiversity, there are a number of key steps for corporate action that companies can consider, seven of which are identified in this Handbook. These seven steps are based on the experiences of a number of companies already active in this area, their approach to the issues and their understanding of some of the critical elements. This framework, however, will need to be adapted by companies to their own particular circumstances.

Key steps for corporate action

1. Make the business case for biodiversity,
2. Identify a senior-level biodiversity champion,
3. Carry out a biodiversity assessment,
4. Secure board-level endorsement,
5. Develop a corporate biodiversity strategy,
6. Develop a corporate biodiversity action plan, and
7. Implement the corporate biodiversity action plan.

Each step is explored in more detail below, indicating why it has been identified as a key stage in the process and what it might involve. Examples are given of companies' experiences to date.

Step 1
Make the business case for biodiversity

Generating support and enthusiasm within the company is likely to depend on adequately illustrating that biodiversity is of relevance to the company's core business, which means constructing a business case; and convincing key individuals that biodiversity is an important and exciting area in which to become involved.

Such a proposal might include the objectives of the proposed activities, the associated benefits to the company, the process by which the proposal would move forward internally, and the resources required to carry out the next phases of the process.

The objectives contained in the proposal should conform to biodiversity objectives of conservation, sustainable use and equitable benefit sharing, whilst emphasising the opportunities to meet the strategic and operational objectives of the company.

Some of the business benefits associated with greater biodiversity engagement are 'soft', relating for instance to reputation, public trust and delivery on environmental commitments. Other benefits may be more tangible, such as reduced remediation costs or increased land value because of proper environmental stewardship.

In early 2002, a survey conducted within BP suggested some of these benefits for the company. Following an analysis of benefits, opportunities, costs and risks, a case for biodiversity as a strategic business issue has also been formalised by Rio Tinto. Key issues include the license to operate, loyalty of investors, employee morale and reputation.

The business case could also identify an internal process and assign responsibilities. To increase the chances of implementation and biodiversity effectiveness, focus could be given

"Senior-level support can be critical to developing sufficient momentum to take biodiversity initiatives forward."

to the integration into existing environmental and social management systems. In assessing the resources required, potential synergies with other departments and company activities could be considered. Aspects of the biodiversity process may contribute directly, for example, to risk management activities.

Brooke Bond Kenya, a tea-growing company owned by Unilever, recognises the importance of promoting biodiversity as part of its commitment to sustainable agriculture. Among other benefits, indigenous trees, which have been lost mainly through firewood collection, improve the efficiency of water catchments – a direct business benefit to rain-dependent agriculture such as tea. The company has, to date, planted over 30,000 indigenous trees on its grounds.

Restoring riparian strips in Brooke Bond Kenya estates

Step 2
Identify a senior-level biodiversity champion

Assessing biodiversity and its relationship to the company requires sufficient human and financial resources. As with many ideas within a company, senior-level support can be critical to developing sufficient momentum to take biodiversity initiatives forward. Identifying a senior-level 'biodiversity champion' at an early stage may be an effective means of kick-starting the process. Presentations and information material can subsequently assist in bringing others on board.

Step 3
Carry out a biodiversity assessment

Having committed to the process, the company should assess its understanding of biodiversity and how it might develop activities to address biodiversity issues. This is an iterative process which can be revisited at later stages of the company's engagement with biodiversity, helping to shape the basis of specific action plans. The objective of the assessment should be to decide which biodiversity issues warrant further attention, and to provide the information and evidence to encourage others within the company to buy into both the business case for biodiversity and the process. Four questions can help structure a biodiversity assessment:

What is the external biodiversity policy framework?

The external policy framework shapes the environment within which companies operate. It determines, to a large extent, the issues that are particularly important and relevant to the company. In relation to biodiversity,

a useful starting point is provided by the Convention on Biological Diversity. The understanding of this framework can be strengthened by reviewing background material on biodiversity; engaging with government bodies, environmental organisations, business and biodiversity fora, and other stakeholders; actively participating in biodiversity events and industry associations; opening dialogue with industry peers and sharing relevant experiences. The companion CD-ROM provides resources for initiating this step.

What issues are particularly relevant to the company?
Determining which issues are particularly relevant to the company will also require an assessment of company activities and operations, and their relationship to biodiversity. This will include considering the company's direct and indirect impacts on biodiversity, through its operations, its supply chain, and the use of its products and services; the company's use of biodiversity; and the company's contribution to biodiversity, through its environmental management systems and other activities.

Conservation initiatives at Ontario Power Generation's Darlington Nuclear site.

The biodiversity management matrix, as outlined at the end of the last chapter, provides companies with a framework to determine, for each biodiversity objective, the impacts of their decisions on each of the three components of biodiversity. With regards to the conservation objective, this will include an assessment of the company's contribution to the integrity and diversity of the broader landscapes in which it operates. With respect to the sustainable use objective, such an analysis should determine the sustainability of the company's supply chain and the impacts of its production of goods and services on biodiversity. Finally, the benefit sharing objective requires examining the extent and quality of partnerships and external relationships in view of creating opportunities and value for key stakeholders and the company.

Ontario Power Generation (OPG), an electric power generation utility, acknowledged that a prerequisite for the design of its biodiversity strategy-related activities was to identify priority biodiversity issues, e.g. species at risk and sensitive habitats that may be affected by the company's operations. This was completed for all the company's sites, either by querying existing digital database files residing with the Province's central repository for biodiversity data, or by conducting site biological inventories at the company's larger generating stations.

What policies, practices and procedures does the company already have in place which address or relate to any of these issues?
It is likely that the company already has some policies, activities or procedures that relate to biodiversity in

"The biodiversity assessment would ideally cover all departments, from corporate head office to local operating sites and other centres of activity."

some way, perhaps as yet unrecognised. For a few companies, managing biodiversity may, in fact, be explicitly integrated within their existing commitment on environmental management and separate biodiversity policies may not be necessary. The objective of the assessment is to highlight what is known and understood within the company about biodiversity, and about the relationship between biodiversity and the company's activities. It may include the collection or updating of basic information about the company, such as the area, location and type of current land-holdings. If there is scope to do so, the assessment would ideally cover all departments, from corporate head office (including, for example, procurement, marketing, engineering, maintenance and contractors) to local operating sites and other centres of activity, drawing out information and company-biodiversity relationships from staff in all areas.

The aim of the survey is to identify potential risks, for instance, areas in which the company has negative biodiversity impacts and, thus, determine priorities for action. The survey could also ascertain biodiversity-related activities already underway in the company and the potential strategic value of these to the company; areas in which the company has, and could increase, a positive impact on biodiversity, and ways in which such activities could deliver benefits for the company; interest and expertise in biodiversity within the company, as well as areas where this is lacking.

In 2001, Rio Tinto carried out a survey which enabled it to assess biodiversity and ongoing biodiversity activities, in and around its 27 businesses and associated operating sites. This took the form of a questionnaire, which was designed with input from three of Rio Tinto's biodiversity partner organisations and was developed to cover biodiversity work conducted at different levels of the company: head office, operational and exploration groups. The results of the questionnaire – which highlighted, in general, a high awareness of the issues – will help design appropriate policies to bridge identified gaps in the management of biodiversity issues.

What could the company do to strengthen and build on existing activities to the benefit of biodiversity and the business?

Based on the issues, existing activities and level of knowledge uncovered by the biodiversity assessment, the next step is to identify priority areas for action. Conservation and sustainable use actions relate to the management of direct or indirect impacts on biodiversity arising from the company's operations, corporate strategy and planning, sourcing and procurement policies. Benefit sharing actions call for developing activities which deliver on stakeholder responsibility, and at the same time are likely to be of strategic value to the company's business.

Step 4

Secure board-level endorsement

Before further activities can take place, it may be necessary to secure substantial support at senior level. Assuming the assessment has generated sufficient evidence, this may be an appropriate point at which to seek support from the board. Endorsement at this level will encourage strong internal support across the company.

"The biodiversity strategy is a subset of the company's wider social responsibilities or sustainability agenda."

Such backing can be further consolidated by drafting – and having the board endorse – an appropriate biodiversity policy which broadly commits the company to act on the issues identified in the proposal.

An explicit policy which sets out a company's commitment to biodiversity should help ensure a clear understanding of the company's objectives and secure support throughout the company. Board level support will be key since it will also enhance recognition of biodiversity as an important business issue, and will help to focus attention on integrating biodiversity into management systems across the company.

Shell has published a Group-wide Biodiversity Standard that must be met in all operations. The Standard was developed following a biodiversity workshop with major conservation organisations. The Standard states that: "In the Group, we recognise the importance of biodiversity. We are committed to work with others to maintain ecosystems, to respect the basic concept of protected areas and to seek partnerships to enable the Group to make a positive contribution towards the conservation of global biodiversity. Shell companies will conduct environmental assessments, which include the potential impacts on biodiversity, prior to all new activities and significant modifications of existing ones; and bring focused attention to the management of activities in internationally recognised 'hotspots', including the identification of, and early consultation with, key stakeholders".

Step 5
Develop a corporate biodiversity strategy

With the necessary support secured, the next step is to develop a corporate biodiversity strategy which will define how the process moves forward. It may be useful to revisit the assessment process in drawing up this strategy.

The strategy could set out the company's goals, acceptable targets and mechanisms for action, and identify the potential roles of stakeholder groups. This strategy would aim at mainstreaming biodiversity into company activities, recognising that the biodiversity strategy is a subset of the company's wider social responsibilities or sustainability agenda. It could provide a framework for strengthening existing activities and procedures, rather than initiating the development of new stand-alone programmes. Finally, the strategy should engage key stakeholders, those who can both impact upon the company and who are affected by company activities, thus providing an opportunity for building strategic partnerships with appropriate organisations and initiatives.

Ontario Power Generation (OPG) first formally addressed biodiversity conservation through policy development and implementation in 1995. Its current biodiversity policy commits OPG to plan and manage its activities in a manner that encourages the continued existence of native species, and the ecosystems upon which they depend. The company's biodiversity strategy was designed as a process with multiple wins for biodiversity, climate change and people. It is based on the 3 R's of conservation biology: Retain

Aerial view of land to be donated to the Florida International University

(i.e. protect) what is significant on the landscape; Restore what has been adversely affected and Replace, where feasible, what has been lost. The biodiversity strategy combines on-site biodiversity management plans with an off-site component – OPG's carbon sequestration and biodiversity management programme.

A great range of biodiversity activities are already underway and these can provide companies with priorities, processes and initiatives to which they can link their own biodiversity activities. Some of these elements are dealt with in more detail here.

Stakeholder engagement

Involving relevant stakeholders in the development and implementation of the company's biodiversity strategy can bring many benefits, including building trust in the company, lending credibility to the outcomes and incorporating a wide range of perspectives which may contribute to the effectiveness and success of the strategy.

Relevant stakeholders might include employees, suppliers, regulators, customers and shareholders, as well as local communities and NGOs. Key groups should be identified from among these.

The human component of ecosystems is recognised in the "ecosystem approach", which has been formally adopted by the CBD as a means of assessment and planning. Local communities often possess different perspectives on biodiversity issues to those of scientists. Their traditional knowledge of biological resources gives them unique insights into sustainable uses and management practices. Their involvement in and commitment to the planning of land uses in areas where businesses operate may be key to the sustainability of such arrangements. For all these reasons, the inclusion of community knowledge and preferences is an essential element of biodiversity assessment and plans at the operations level.

In recognition of the important issues currently threatening sustainable small-holder livelihoods derived from cocoa production, chocolate industries in both Europe and North America are supporting research and development activities in West and Central Africa through a joint public-private partnership under the Sustainable Tree Crops Programme (STCP). Through STCP, companies like M&M/Mars are seeking to develop partnership projects involving cocoa growers, processors, chocolate manufacturers, development agencies, governments, NGOs, conservation groups and research institutes to address sustainable cocoa production.

Rather than following the usual procedure for returning quarried land to the government, RMC South Florida has developed a novel partnership with Florida International University (FIU), backed by the Florida State government. An initial donation of 370 hectares of land is planned, thus enabling FIU to offer one of the world's first applied study programmes focusing specifically on wetland restoration. The initiative's positive outcome has enhanced RMC's credibility in the Everglades biodiversity community and should increase the company's chances of obtaining licences to operate in similar sites.

Engaging stakeholders can be a time-intensive and complex process. Effectiveness and success can be strongly influenced by the way in which it is set up and conducted. Managing

expectations through clear communication of the scope, constraints and realistic outcomes of the process will be important in maintaining the confidence of all involved.

Partnerships with conservation organisations

A growing number of companies are entering genuine partnerships with conservation organisations. Developing formalised strategic partnerships with appropriate organisations carries a range of advantages over ad hoc or informal dialogues because they will facilitate investment and understanding from both the company and its partners, encouraging trust and flexibility, good working relationships, easier communication, clear goals and objectives, stability and security. According to Chris Spray, Environment Director of Northumbrian Water: "Partnerships are vital".

These partnerships can assist companies by providing them with access to biodiversity expertise, and information; strengthening and legitimising biodiversity activities; allowing companies to efficiently outsource unfamiliar biodiversity activities; building company capacities which may be valuable in other areas of the business; and enabling cultural change.

Choosing the right organisations to work with and establishing the partnerships in an appropriate way can be critical to their success. Common features of successful partnerships include agreement around common objectives. This requires adequate internal communication about the rationale, expected outcomes and division of responsibilities of the partnership. It also includes the validation of the programme – both at senior level and at local manager level – to ensure that experience of employees returning from NGO projects are sufficiently valued and integrated into company decisions.

Rio Tinto has formed relationships with several global biodiversity conservation organisations to inform the development of its corporate biodiversity strategy. These began as informal contacts and bilateral discussions and have matured into formal agreements in several cases based on the spirit of partnership. This requires each party to respect the other's objectives and priorities. Actions are focused on where these coincide, but activities also support objectives which, if not wholly shared, do not conflict. Some of the relationships – that with the UNEP World Conservation Monitoring Centre for example – date back more than 10 years and arose out of operational requirements for information. Other agreements, such as those with Royal Botanic Gardens Kew, BirdLife International, Fauna & Flora International and Earthwatch, are in their second or third year and have matured through a process of mutual understanding and respect, so that the flow of advice and expertise is two-way.

Shell's biodiversity strategy includes site selection work to raise appropriate early warning if needed (for example, if potentially entering a World Heritage site or an IUCN category I-IV protected area) as well as asking some key biodiversity questions related to endemism, habitats, and ecosystem functions. In the framework of a five-year partnership, Shell and the Smithsonian Institution are working on a biodiversity assessment and monitoring programme in the Gabon Gamba Complex. The main objectives of this partnership are to accurately

During biodiversity field work at Gabon Gamba Complex

and independently assess the impacts of Shell's operations while increasing biodiversity knowledge, building capacity with the Gabonese government and contributing to Shell Gabon's long-term sustainable development planning. The resulting increase of in-country capacity could be transferred to other Shell operations.

Sectoral and joint activities
Working with other companies in the same sector and beyond enables companies to pool expertise and resources, by developing joint solutions to common biodiversity issues.

For example, The Energy and Biodiversity Initiative (EBI) brings together four energy companies (BP, ChevronTexaco, Shell, Statoil), and five conservation organisations (Conservation International, Fauna & Flora International, IUCN, Smithsonian Institution, The Nature Conservancy). Convened by Conservation International's Center for Environmental Leadership in Business, it aims at developing tools and guidelines for integrating biodiversity into oil and gas development. It is structured into four working groups: the business case group promotes the rationale for integrating biodiversity conservation; the biodiversity conservation practices group works on identifying and implementing best practices and conservation techniques; the metrics group is developing performance indicators for measuring impacts on biodiversity caused by oil and gas operations; and the site selection group is developing criteria for deciding whether to operate in biologically sensitive environments.

Step 6
Develop a corporate biodiversity action plan
Based on the specific findings of the biodiversity assessment and the direction set out in the biodiversity strategy, the biodiversity action plan (BAP) should clearly indicate how the strategy will be implemented. It could assign responsibilities for each activity, determine where these will take place, who will be involved, how they will be financed, how progress will be measured and set a clear timetable.

The plan is likely to cover a wide range of actions across various functions and locations of the company. Ideally, the emphasis would be on developing and implementing programmes which integrate biodiversity into existing management systems. Biodiversity-related priorities and objectives should be set within the local and national context.

Northumbrian Water has developed a Biodiversity Action Plan (BAP) that has been designed in accordance with national and local policies. Its BAP considers its impacts in four different areas: as an operator, as a landowner, as a funder, and as an advocate. As a landowner, it has developed site-specific BAPs, building on land surveys and identification of priorities. As an advocate, the company has formed several partnerships and has organised national seminars with environmental organisations and the local authority to encourage businesses to become involved in biodiversity action.

The BAP of Wessex Water, a UK-based water company, focuses on managing company land, minimising the effect of new development, and partnering with conservation organisations.

ChevronTexaco's Pembroke refinery in the UK is the only refinery that took part in the European Union 'Biodiversity in Action on Industrial Sites' pilot

scheme. The scheme, which ended in 2001, examined how the natural environment can be enhanced from interaction with industry, and resulted in the development of a site Biodiversity Action Plan, tailored to complement the Local Biodiversity Action Plan, which is currently being implemented. Both plans were drafted with direct involvement from the Countryside Council for Wales.

Many actions may be carried out at specific locations, within operating companies or departments, with responsibilities devolved to this level. A framework for identifying key components of a corporate Biodiversity Action Plan is outlined in the next section.

Step 7
Implement the corporate biodiversity action plan
Now the real work begins! The plan needs milestones, indicators, reporting procedures and, most importantly, clear linkages to improving the company's performance.

Main habitat features at Pembroke refinery

3.2 KEY ELEMENTS OF A CORPORATE BIODIVERSITY ACTION PLAN

So as to ensure its full integration into management decision process, and achieve the best biodiversity performance, the corporate biodiversity action plan requires a co-ordinated approach. A number of broad elements have been identified here to ensure successful implementation.
These elements are starting points and will need to be tailored to individual circumstances.

Key elements of a corporate biodiversity action plan

1. Conserve biodiversity,
2. Use biological resources sustainably,
3. Share benefits equitably,
4. Strengthen management systems,
5. Monitor and evaluate,
6. Report, and
7. Identify new opportunities.

Element 1
Conserve biodiversity
Companies with significant land holdings or whose activities impact on habitats and ecosystems should develop site-specific biodiversity action plans in line with local and national biodiversity priorities. National Biodiversity Strategies and Action Plans (NBSAPs) provide a framework which companies may want to use to set priorities and design company BAPs.

A site-level BAP can assist companies to manage land and habitats within the context of local, regional and national objectives and priorities for biodiversity, ensure that local employees understand the issue and provide training opportunities, measure

Amazon forest in Peru

Native forest regenerated through the Emissions/Biodiversity Exchange scheme, on a previously sheep-grazed site

the impacts of local decisions, and establish a framework for reporting progress and performance back to head office.

So as to ensure implementation, and in line with management practices, the BAP should clearly assign responsibilities. Finally, using a set of globally compatible guidelines for designing biodiversity action plans, can facilitate monitoring and reporting across the company.

At its Camisea gas fields, located in the Peruvian Amazon, Pluspetrol Peru Corporation, an oil and gas company, has established a "no net loss of biodiversity benefit" aspiration within its environmental policy. The company is implementing processes of biodiversity assessment, monitoring, mitigation, restoration and emergency response aimed at minimising negative impacts during its estimated 40 years of operations.

BP developed a template, summarising key features of site-level BAPs. This template has been reproduced (on the facing page), using fictitious data.

Offset mitigation

In situations where a company's operations have unavoidable negative impacts on biodiversity, such as open pit mining or other developments where habitat loss or damage is inevitable, offset mitigation might be integrated in the site BAP. Measures may include supporting protected area management in the region and building capacity, such as assisting research in the host country to strengthen the effective management of biodiversity at a national level. It may also consider measures such as setting aside for conservation funds or land in an adjacent or similar area to compensate for the loss of biodiversity in areas of operation. In some countries, offset measures constitute a legal requirement.

Offset mitigation, however, is a controversial approach and raises complex questions about the value, role and replaceability of biodiversity. For example, should a company look to conserve an area of land adjacent to its new site or to conserving a similar or biodiversity-rich area elsewhere in the same country? Some argue that offsets are never acceptable because nothing can adequately compensate for the immediate loss of unique habitats and species. Consultation with key stakeholders about these issues may be important in gaining acceptance of an offset mitigation plan.

At its Kennecott Utah mine, when faced with a permit requirement for additional storage area for its tailings (the waste streams produced by copper ore milling), Rio Tinto went further than its legal obligations. The latter were to offset the loss of designated wetland habitat (e.g. the area chosen for tailings storage). The 1,000 hectares purchased less than a mile from the storage site not only replaced the lost wetlands, but also provided significant additional shorebird habitat. Following enhancement efforts, in 1997, surveys indicated a 1,000-fold increase in bird use over the numbers observed in the previous two baseline years, and the Inland Sea Shorebird Reserve was expanded up by an additional 450 hectares.

In New Zealand, outdoor equipment manufacturer Macpac, clothing manufacturer Snowy Peak, and tourism operator Adventure South, have led the way by investing in the restoration

of native forest to offset their corporate greenhouse gas emissions. They have used the Emissions/Biodiversity Exchange scheme of Landcare Research, a founding member of the New Zealand Business Council for Sustainable Development. The scheme calculates their emissions and the sink area required. Land is set aside in perpetuity, in formal agreements with landowners, and audit methods have been developed to assess progress with both carbon and biodiversity gains.

With one third of its electricity coming from fossil fuels, Ontario Power Generation (OPG) recognises that the generation of electricity can have adverse effects on species and their

SITE BASED BIODIVERSITY ACTION PLAN STATUS SUMMARY (example with fictitious data)

Site / Business Unit Name, Location, Primary Activities

No-Org Blue Acres oilfield is located along the southern coastline lying on the Indian Ocean. The facility currently has five sites (two on-shore and three off-shore) linked by underground pipelines, communication channels and cables. It is envisaged that the number of sites will increase to 10 by 2010 at which time operations will continue for a further 15 years. The current production rate averages 5000 barrels a day per site. At the end of the licensed period of operations in 2025 all facilities will be reinstated to their original state or as otherwise agreed with the National Government Ministry of Environment, Energy and Mining.

Key Contacts	Name	Telephone	E-Mail
Environment Manager	Ibu Charlotte Tobba	23 11 129 7234	Ctobba@noorg.glob
Site Manager	Barry Morgan	52 21 345 923	rmorgan@lc.noorg.glob
Chair of Environment Forum	Bapak Nuri Waryanto	52 21 346 271	None

Brief Description of Surrounding Environment

Many of the oilfield sites are surrounded by areas of ecological importance including coral reef, mangrove forest, sea grass, rivers, floodplains and sandy beaches. The coral reef supports over 300 species of fish and 250 species of invertebrates. Some of the species are of international significance including wrasse, groupers, elasmobranch and turtles. The mangroves are dominated by Rhizophora and Avicennia species with important ecological, biodiversity and livelihoods uses including acting as nurseries for marine life and for coastal protection.

Description of Land Take

The ratio of developed land to land managed for conservation is about 1:3.

Location (Lat-Long)	Facilities Area	Designated for Conservation	Managed for Conservation	No Active Management	Total Area
10 S 150 E	84	10	52	200	346

Key Biodiversity Issues

- Land Use Change: Removal of habitat for construction of facilities causing habitat loss and fragmentation.
- Pollution: Release to water of pollutants affecting water, marine life and coral reef quality. Releases to air affecting air quality. Disturbance of local wild life from the physical presence of the site. Light and noise disturbance associated with people and machinery working at exposed sites in coastal habitats. Potential for accidental release of oil or other oilfield
- Unsustainable use of biodiversity: Procurement of natural materials for use in construction.
- Introduction of species: Use of imported soils and plants in landscaping of facilities.

Key Action Plan Items for 2002 and longer term and how these make a positive contribution

Proposed Action	Timescale	Contribution to Biodiversity
Reduce land take in sensitive habitat; manage land for conservation extending existing work to new sites.	2002 - 2025	Reduce threats to priority habitats and species
Alignment of conservation and monitoring work with local and national priorities	2002 - 2025	Identify and reduce threats to priority habitats and species
Assessment of supply chains for raw materials and gain an understanding of biodiversity impact	2002 - 2005	Reduce impacts on biodiversity from supply and extraction of natural resources. Raise awareness of indirect impacts with stakeholders
Raise awareness of biodiversity issues through a programme of open days, consultations, talks etc.	2002 - 2010	Improve knowledge about biodiversity issues and raise environmental standards

Current Organisations We Work With

National FFI, Regional IUCN Office, Department of Biology at University of Ampernan, Local NGO Environmental and Development Forum (FSPLH)

Context for Priority Setting

No NBAP exists therefore working with in-country FFI and local University

Has information been verified?	Verifier	Verification Date	Next Review
YES NO			

habitats through loss and fragmentation of habitat as well as through the modification of water flow regimes. Also aware that the accumulation of GHG emissions has the potential to cause dramatic shifts in ecosystem structure and composition, OPG designed its biodiversity strategy as a restoration process that also takes climate change into account. Its off-site component, a carbon sequestration and biodiversity management programme, will add 900 hectares of new forest by planting 2 million native trees by 2005. The programme focuses on restoring forest habitat in Southern Ontario, which has lost more than 80 percent of its original forest cover.

Element 2
Use biological resources sustainably

For many companies, the most significant impacts on biodiversity will be through its use, directly or indirectly, as a product or resource. Action plans need to ensure that both upstream and downstream activities use biological resources in a sustainable manner. This may involve working with suppliers to improve their own environmental performance, and seeking supplies from sustainably-certified sources.

There are a range of certification schemes which can apply to aspects of a company supply chain – including those run by the FSC, MSC and IFOAM – and can help companies take a competitive advantage. Certification schemes are also increasingly focusing on biodiversity issues.

Where no existing certification schemes are appropriate, working with relevant environmental organisations and other stakeholders with biodiversity expertise could play a role in ensuring that biodiversity activities are carried out in an appropriate and credible way.

Element 3
Share benefits equitably

Biodiversity presents great opportunities for developing links between a business and its stakeholders. Well-designed company BAPs can add value through integrating biodiversity and other environmental activities into corporate social responsibility programmes. Activities which do this may include:

Community involvement

BAPs should integrate stakeholder concerns, especially in areas with sensitive community issues.

BT, a communication company, set aside five hectares of wetland, woodland and meadows for study and recreational purposes in one of its satellite stations. The company is responsible for managing wildlife on the land and, in partnership with the UK Environment Agency and the local council, is planning to construct classrooms and other educational facilities on the site.

Supporting conservation initiatives in the region

At a local and regional level, companies can also provide expertise or assist conservation initiatives led by other organisations.

3M, a diversified technology company, has selected The Nature Conservancy as its national partner in the USA for 2001-2003, with support totalling US$ 5.1 million. This will enable The Nature Conservancy to expand and develop two protected areas in Minnesota and two in Texas by acquiring more land.

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Volunteers from the Hotham-William's Greening Challenge

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Protected limestone pavement in Cumbria, United Kingdom

Investment bank UBS Warburg and trading company Mitsubishi Corporation are among five companies supporting Earthwatch Europe's African Fellowship Programme. This provides training opportunities for African conservationists drawn from the communities within which the companies are operating. In addition to financial support, the companies provide logistical support for the programme. By working in a coordinated partnership with five companies, the programme gains the critical mass to be pan-African in scope, providing training in fifteen countries.

Initiation and support of industry initiatives

The rationale for engaging in industry-wide efforts includes establishing a level playing field across the sector.

Limestone pavement, a rare geological formation under threat owing to the popularity of the rock for gardens, is subject to a UK Habitat Action Plan. RMC, a heavy building materials company, has taken a leading role in supporting government action to protect the non-renewable resource, by signing a pledge of non-use and working with the UK Countryside Agency to support further protection, thus earning respect from NGOs and offering an informed consumer choice. This is providing the company with a competitive advantage with regards to other aggregate companies that still extract limestone pavement.

Staff involvement programmes

Biodiversity conservation is everyone's concern, including employees. Biodiversity actions by employees may be a significant motivational opportunity.

In 1996, Western Power Corporation, a gas and electric company, backed the biggest volunteer-based revegetation project in Australia. Since then, the Hotham-Willams Greening Challenge has attracted more than 5,000 volunteers to plant 4 million native trees and shrub seedlings on degraded lands.

Similarly, consulting company KPMG's Environmental Team Challenges enable its UK-based staff to participate in one-day conservation tasks. Organised in the framework of the company's key environmental partner organisations, these experiences provide staff with a hands-on appreciation of local biodiversity.

HSBC Holdings plc is undertaking a five-year programme with Earthwatch Institute, which will allow 2,000 employees, at all levels, from throughout the world, to work for a fortnight as field assistants on Earthwatch's projects. On return, each employee receives a grant of US$ 500 to undertake a local community conservation project. This will contribute over 120 years of labour to Earthwatch's field projects, create 2,000 biodiversity champions within the bank, and generate thousands of conservation projects in local communities. In addition, HSBC is able to use the employee involvement programme to publicise internally its wider involvement in biodiversity initiatives.

Sharing biological data and information

By collecting and sharing data and information with the conservation and academic community, a company can build its image, strengthen its links with conservation networks, open access to relevant expertise, build

Native fantail, New Zealand

corporate capacity, strengthen its ties with stakeholders, offset negative biodiversity impacts of the company's operations, improve employee morale and commitment, recruitment and retention, facilitate the company's contribution to policy formation, and boost relations with communities around company sites.

For the last ten years, Imperial Chemical Industries (ICI), a specialty chemicals and coatings company, has operated Nature Link, a programme which encourages and involves employees in nature conservation and biodiversity at sites around the world. Nature Link wildlife surveys form the basis of practical and locally significant conservation projects which are supported with expert advice and encouragement from ecology advisers. The surveys have enabled the company to establish baseline biodiversity data at all its major and many of its smaller sites. Information on more than 2,500 species found around ICI's facilities are available through the Internet.

As oil exploration moves into ever deeper oceanic waters, BP's Deep Sea Biodiversity Programme has enabled the company to establish baseline information, assess impacts and modify operations accordingly. By sharing information – such as shallow seismic data, of little use to the company – BP is not only contributing to bridge the knowledge gap in this area, but also developing good relationships with the international scientific community.

Element 4
Strengthen management systems

The company will almost certainly have existing environmental and social management systems and processes into which biodiversity considerations can be built. As with any other company issues or initiatives, integration with company culture and existing systems is most likely to ensure more effective and sustained delivery across the business.

Palliser Estate Wines, a New Zealand vineyard and winery part of the New Zealand Business Council for Sustainable Development, has taken part in an industry effort to develop a group environmental system to monitor environmental impacts. As part of the biodiversity component, native fantails are used to control fruit flies around the vines, and native Manuka shrubs have been planted to attract wasps that help control caterpillars.

Many companies in the corporate sector have developed formal environmental management systems (EMS) which help to identify, prioritise and manage risks, improve performance and reduce impacts. By capturing experiences and good practices they can serve as active learning tools between a company's operations, as well as helping to improve performance year on year.

By integrating company BAPs thoroughly into environmental management systems, a company can ensure that biodiversity issues are considered systematically along with other environmental impacts.

The most widely used model for EMS is the International Organization for Standardization (ISO) 14000 Environmental Management Systems Specification series. Companies which meet this standard are awarded ISO 14001 certification. A number of other certification schemes dealt with under supply chain management might be relevant to biodiversity management activities.

As part of its Biodiversity Strategy, Ontario Power Generation (OPG) developed an on-site component that focuses on species at risk as well as habitats for species that may be declining regionally, thereby preventing other species from becoming formally 'at risk'. The management plan is embedded in each station's Environmental Management System which is registered through ISO 14001 specification. Furthermore, four sites have management plans that are certified and audited by the US-based Wildlife Habitat Council.

In the banking sector, financial intermediaries might consider adopting a 'due diligence' approach to biodiversity. As part of its Environmental Risk Engineering branch, Zurich Financial Services Group has developed due diligence services that include ecological risk assessments. To quantify contamination of surface waters, for instance, the company samples bee honey, since bees drink water in a one-mile radius of their hives.

Element 5
Monitor and evaluate

A company needs to be able to measure its performance against targets, relevant standards and stakeholder expectations, so that it can evaluate if corrective action needs to be taken and where future targets should be set or revised. A process for regular monitoring and evaluation should be built into all sections of the action plan.

There are two aspects to performance: first, the extent to which the planned actions have been carried out according to schedule and the standard to which these have been carried out; second, the effect of these actions against their objectives.

This second aspect is especially challenging in relation to biodiversity because there are no commonly agreed indicators, or yardsticks, against which to measure a company's real impact. Recent attempts to assess corporate biodiversity performance has therefore focused on the first aspect of performance, looking at the ways in which a company is going about biodiversity management, and the extent to which it has implemented these plans, as an indirect indicator of actual impact.

Indicators of performance may include the development of a corporate biodiversity strategy in line with company policy, an increase in the number of sites or land-holdings covered by site-specific BAPs, as well as the establishment of a procedure for periodical review of site BAPs.

Companies could work with local operations and site managers to develop indicators and performance measures for their biodiversity action plans which would allow measurement and reporting of actual biodiversity impact (both positive and negative) across the company. In the absence of appropriate quantifiable indicators, working with relevant NGOs and other stakeholders with biodiversity expertise could play a role in ensuring that biodiversity activities are carried in a credible way.

Northumbrian Water has been working with the British Trust for Ornithology, the Royal Society for the Protection of Birds and the Department of the Environment,

The Multi-species bird index comprises counts of suites of wetland birds, such as Redshank

Food & Rural Affairs (DEFRA) to investigate the possibility of using bird census data to develop indicators of sustainability both on a national and regional basis. The work has focused on wetlands that are either owned by, or could be impacted by the operations of water companies. Indicators have been produced for three broad types of wetlands and for suites of waterbirds typical of each habitat and indicators produced for 25 years where data is available.

Biodiversity is one of ten indicators Unilever is developing as a first step towards establishing criteria for its sustainable agriculture initiative (along with soil fertility, soil loss, nutrients, pest management, product value, energy, water, social/human capital and local economy). Among various pilot studies conducted around the world, its Brooke Bond Kenya operations are working to identify how to measure the maintenance of genetic diversity within the crop, the amount of biodiversity within the plantation and the effects of the plantation on biodiversity in the surrounding area.

Element 6
Report

In order to produce reports on performance against biodiversity objectives, data should be collected from across the company using compatible methods so that it can be aggregated and summarised.

A growing number of companies are reporting publicly on their social and environmental performance. These reports can be an important tool for communicating with stakeholders, particularly NGOs and potential investors. However, the information and presentation needed by these groups can differ widely, so companies need to think carefully about the purpose of their reports.

As a result of the wide disparity in the quality of the reports beings produced, a number of initiatives are currently attempting to provide a framework and standards for biodiversity reporting. The Global Reporting Initiative, for example, has developed organisation-specific guidelines including sections on biodiversity and land use.

Element 7
Identify new opportunities

Implementing a company biodiversity action plan is a dynamic process, and new opportunities should feed into it as they arise. Such opportunities exist, for instance, with respect to investor relations, and access to capital. There is growing evidence to suggest that investors are, increasingly, taking a triple bottom line approach.

Companies that perform well on sustainability criteria also show strong stock market performance and reduced share value volatility. The ability to deal well with these issues may indicate competent company management. In addition, a number of recent reports on corporate governance and accountability have drawn attention to the importance of non-financial issues, and particularly the need to consider them as part of reputational risk management processes.

3.3 BUSINESS AND BIODIVERSITY

"Biodiversity is too important to be left solely in the hands of governments."

"The Handbook's companion CD-ROM provides resources to build corporate biodiversity capacity."

Biodiversity is, progressively, being included as one of the assessment criteria for company sustainability. The UK's Business in the Environment Index, for instance, includes a question on biodiversity. But the specific criteria by which corporate biodiversity performance is to be assessed are still in the early stages of development. The current focus is on management process as a proxy for actual biodiversity impacts and performance.

In 1992, the world's governments reached a new agreement on biodiversity. The Convention on Biological Diversity proposed a bold set of objectives integrating the environmental, economic and social dimensions of sustainable development with respect to managing our living planet.

It is now clear that biodiversity is too important to be left solely in the hands of governments. As this Handbook has shown, biodiversity is not only important to businesses, but indeed companies in many different sectors are integrating biodiversity priorities into their management systems.

This Handbook has also indicated how a business could identify priority biodiversity issues and develop a biodiversity management plan. But such issues and management plan details will differ by sector, location and company structure. Hence, each business will need to tackle biodiversity in its own way.

The Handbook's companion CD-ROM provides resources to build corporate biodiversity capacity. It considers the global biodiversity-related conventions, the world's conservation union, and the major biodiversity-related business initiatives. Future updates of this material will be available on the Handbook's website (http://biodiversityeconomics.org/business/handbook).

The various biodiversity organisations and business sponsors of this Handbook hope that these few pages will have motivated you and your business to take action on biodiversity.

KEY ACRONYMS

BAP	Biodiversity Action Plan
CBD	Convention on Biological Diversity
CELB	Center for Environmental Leadership in Business
EBI	Energy and Biodiversity Initiative
EMS	Environmental Management System
FFI	Fauna & Flora International
FSC	Forest Stewardship Council
GIS	Geographic Information Systems
GMO	Genetically Modified Organism
IFOAM	International Federation of Organic Agriculture Movements
IPR	Intellectual Property Rights
ISO	International Organization for Standardization
IUCN	The World Conservation Union
LMO	Living Modified Organism
MAC	Marine Aquarium Council
MSC	Marine Stewardship Council
NGO	Non-Governmental Organisation
SME	Small and Medium-Sized Enterprise
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNEP	United Nations Environment Programme
WBCSD	World Business Council for Sustainable Development
WCMC	World Conservation Monitoring Centre
WWF	World Wide Fund For Nature

EARTHWATCH INSTITUTE

Earthwatch Institute is an environmental NGO, which supports scientific field research and environmental education throughout the world.

We currently provide funds and volunteer field assistants for over one hundred biodiversity field projects in 40 countries, and raise awareness among both members of the public and company employees about biodiversity through field placements on these projects.

Earthwatch Institute (Europe), which has contributed to this publication, is the European Office of Earthwatch Institute, which is based in the USA and was founded in 1971. Earthwatch Institute has other Affiliate Offices in Australia and Japan. Earhwatch Institute (Europe) was registered as a charity in England in 1985, and opened its Oxford office in 1990.

IUCN – THE WORLD CONSERVATION UNION

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: nearly 980 members in all, spread across some 140 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

THE WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT

The World Business Council for Sustainable Development (WBCSD) is a coalition of 160 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress. Our members are drawn from more than 30 countries and 20 major industrial sectors. We also benefit from a Global Network of 40 national and regional business councils and partner organizations involving some 1000 business leaders globally.

Our mission

To provide business leadership as a catalyst for change toward sustainable development, and to promote the role of eco-efficiency, innovation and corporate social responsibility.

Our aims

Our objectives and strategic directions, based on this dedication, include:

- **Business leadership** – to be the leading business advocate on issues connected with sustainable development.
- **Policy development** – to participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development.
- **Best practice** – to demonstrate business progress in environmental and resource management and corporate social responsibility and to share leading-edge practices among our members.
- **Global outreach** – to contribute to a sustainable future for developing nations and nations in transition.


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