

# Biodiversity and business

A briefing paper from Two Tomorrows and Biocensus on biodiversity – and the challenges and opportunities for companies



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## Introduction

### **What is biodiversity, why is it under threat, and how can companies integrate biodiversity into their strategies and operations? Mark Line of Two Tomorrows and Tim Hounsome of Biocensus explain**

Businesses are increasingly aspiring towards long-term social and environmental sustainability for ethical reasons and in the interests of financial success, legislative compliance and risk management. Biodiversity is central to the social and environmental performance of companies, and there is a compelling business case for its incorporation into business planning and operations. The link between the health of the environment and the health of our economies is becoming clearer. However, although biodiversity issues present many opportunities and risks for the commercial sector, they have not been widely adopted into business thinking.

In this paper, we answer key questions about the links between biodiversity and business. For example, what exactly is biodiversity? And what state is it in today? What is driving biodiversity loss and what is the world doing about it? Why should businesses care about biodiversity, and what are the first steps for companies wanting to integrate biodiversity into their strategies and operations? Finally, we provide two examples of companies currently working to protect or promote biodiversity to enhance their business performance.

## 1. What exactly is biodiversity?

Biodiversity is the term used to describe the variety of life on Earth. It encompasses the genetic diversity within species as well as the vast array of different species and the ecosystems they form. It also includes the evolutionary processes that produce species and the ecological interactions that keep ecosystems functioning.

The biodiversity we see today is the product of around four billion years of evolution and is the world's natural capital. It has sustained human life for thousands of years by providing food, fuel, shelter, fibre and medicine, and is the foundation of the planet's life support systems, such as atmospheric and water regulation.

Biodiversity is often considered at three different levels: ecosystems, species and genes.

## Ecosystems

Ecosystems, such as those found in the tropical forests, savannah grasslands or lakes and rivers, are an ever-changing interaction of plant, animal (including humans) and micro-organism communities and their physical environment, such as the air, soil and water. Ecosystems provide a huge range of services upon which humankind depends. For example, forests sequester carbon helping to regulate the atmosphere and also act as sponges by capturing rainfall and controlling the flow of freshwater; insects pollinate crops; and plant communities prevent soil erosion and increase soil fertility.

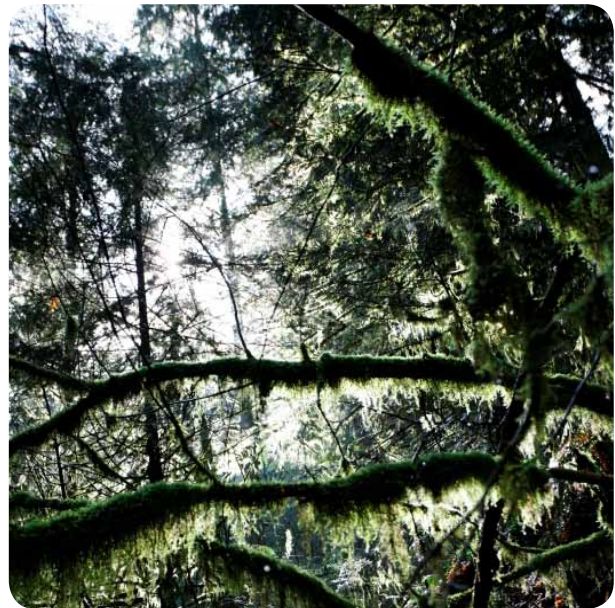
'Ecosystem services' are increasingly being recognised in land-use planning and the management of natural resources, and provide a compelling argument for the need for biodiversity conservation. There is a growing move to consider these services as assets with a market value to encourage their sustainable use. The financial value of global ecosystem services is therefore likely to be overwhelming – one study in 1997 valued 17 different ecosystem services provided by the planet at \$33 trillion, almost double the GNP of the entire world. Attaching a financial value to ecosystem services should place biodiversity at the centre of national economic planning and business thinking.

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## Species

Species are the most recognisable and familiar form of biodiversity. A species is a group of organisms which share a number of biological traits making them distinct from others, and are organised into categories such as plants, fungi, bacteria, and animals. To date, around 1.8 million species have been identified, but millions more are yet to be described. Some estimates suggest there are between three and ten million species in the world today. Species are often used to assess levels of biodiversity and to quantify changes in its status.

Biodiversity varies around the globe, with most species occurring in the tropics. In fact, seventeen 'megabiodiversity countries', including Brazil, Indonesia, Columbia, Papua New Guinea and Madagascar, harbour 70 per cent of the world's species. Numbers of species are also not distributed equally in their different groups. For example, less than half of one percent of all described species are mammals but 20 per cent are beetles, and most species in existence are not even visible to the human eye.



## Genes

Genes are the molecular building blocks of life. Genetic diversity within species gives rise to individual variation both within and between populations. This variation allows species to adapt to environmental changes through natural selection. When populations become small, they become genetically impoverished and face increased risk of extinction. Genetic diversity in many plants and animals has been exploited extensively by humans to produce breeds designed to provide various products such as meat and grain and services including hunting and companionship. The corporate sector dominates the commercial use of genetic resources, in areas such as agriculture and pharmaceuticals.

## 2. What's the status of global biodiversity and what is driving its loss?

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The world's biodiversity has been utilised by humans for thousands of years but, today, due to a burgeoning human population, we are altering natural landscapes and utilising natural resources at an ever increasing and unsustainable rate. Biodiversity is impoverished through habitat loss or damage, overexploitation, pollution, invasive species and climate change. For example, about 45 per cent of the world's forests have now been cut down. Because they store carbon, the destruction of forests accounts for 20 per cent of global carbon emissions. Half of the world's mangroves have gone, making coastal areas highly vulnerable to the impact of storms. Many of the planet's fisheries have collapsed or are being unsustainably exploited.

The current rate of extinction of species is unprecedented, being hundreds of times greater than the natural background rate. Around 850 species are known to have become extinct in recent years, but many, many more will have unknowingly disappeared. Some 34,000 plant and 5,000 animal species face extinction.

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Before species extinctions occur, a series of population extinctions takes place with severe consequences for the functioning of ecosystems.

The current 'biodiversity crisis' is driven by unsustainable demands from the world's growing human population for resources such as food, fibre, timber, water, energy, land on which to build, and the generation of wastes. Since 1950 the global human population has doubled, and is predicted to grow from six billion today to around nine billion by 2050. According to the 'Living Planet Index', which measures our 'Ecological Footprint', we have exceeded the Earth's biocapacity (the amount of biologically productive land and water that is available to meet humanity's needs) by about 25 per cent. Effectively, "people are turning resources into waste faster than nature can turn waste back into resources" and "humanity is no longer living off nature's interest, but drawing down its capital".

### 3. How is the world responding?

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In response to the worsening biodiversity crisis, world leaders met at the 1992 Earth Summit in Rio de Janeiro and agreed a strategy for sustainable development in order to maintain the world's biodiversity as the global economy develops. One of the key agreements was the Convention on Biological Diversity (CBD), which has three main goals:

1. To conserve biological diversity
2. To use biological diversity in a sustainable way
3. To share the benefits of biological diversity fairly and equitably.

The CBD is a framework which obliges all signatory countries to devise policies and actions to arrest biodiversity loss. In 2002, the Parties to the Convention set a target for significant reduction of the current rate of biodiversity loss at the global, regional and national level by 2010 as a contribution to poverty alleviation and to the benefit of all life on Earth. This target was subsequently endorsed by the World Summit on Sustainable Development and was incorporated as a new target under the Millennium Development Goals. However, all the global indicators used to measure biodiversity loss and human impacts on the planet suggest that the world will be nowhere near meeting this.

A solid risk-management response requires effective governance. Without a robust, transparent governance structure in place to drive policy and ensure proper management, the process is unlikely to be a success.



### 4. Why should the commercial sector care about biodiversity?

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As society places ever higher value on biodiversity, and as the legal framework develops to reflect this, the commercial case for incorporating biodiversity into business planning and operations grows ever stronger. Biodiversity presents the commercial sector with a range of risks and opportunities, which operate at several scales, from local to global, and can directly affect profitability.

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According to a publication produced for the 2002 World Summit on Sustainable Development ([Business and Biodiversity: The Handbook for Corporate Action](#) by Earthwatch Institute (Europe), International Union for Conservation of Nature and Natural Resources, World Business Council for Sustainable Development) the current risks to a company's profitability of ignoring biodiversity issues include:

- challenges to legal license to operate
- disruption of supply chain
- damage to 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
- poor staff morale.



In future, a key public policy theme will be the extent to which biological resources are valued and whether charges should be levied for their use. Business and society benefit from services provided by ecosystems, which have historically been treated as 'free' – but public policy is likely to shift to change this. One example of this would be the extent to which we rely upon the ecology of forests and other natural habitats to provide a regulated and predictable flow of clean water. In the climate change arena, great emphasis has been placed upon the significance of forests as stores of carbon and whether societies in developed countries should pay countries in the tropics to sustainably manage rainforests as a contribution to limiting climate change.

Other future risks include changes in the availability of biological resources which would directly impact on business supply chains. Agricultural resources lie at the top of the value chain for many companies, not only those in the food and drink sector. Biological resources are essential to the maintenance of many supplies of raw materials. For example, shifts in patterns of soil quality and clean water resources can have a radical impact on raw material availability and supply. Another high-profile example is the decline in honey bee populations and their pollinating services, with potentially catastrophic impacts on global agriculture.

Conversely, as it comes to the forefront of public opinion, biodiversity presents the commercial sector with a wide range of opportunities to boost profitability and move towards sustainable growth. According to [Business and Biodiversity: The Handbook for Corporate Action](#), these opportunities include:

- securing the license to operate
- strengthening the supply chain
- bolstering stakeholder relationships
- appealing to ethical consumers
- attracting socially responsible investors
- improving employee productivity.

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Incorporating biodiversity into business planning also provides an opportunity to be ahead of the game in a rapidly changing legislative environment, leading to more effective risk management. In addition, it also leads to greater business transparency. For example, the Global Reporting Initiative's G3 sustainability reporting guidelines specify five core biodiversity indicators against which reporting companies should provide performance information. Responsible business practice includes a willingness to disclose information regarding corporate performance on social and environmental impacts.

Capturing these biodiversity opportunities, and identifying and minimising risk, provides a 'win-win' business case for biodiversity, which benefits both the commercial sector and the natural environment on which we are so reliant.

## 5. What should be the first step for my company?

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Acting responsibly with respect to biodiversity is no different to any other sustainability issue facing companies. The most important first step is to conduct an initial biodiversity assessment – an evaluation of the relationship between a company's activities and biodiversity issues. This consists of assessing whether a company's operations, supply chain and use of resources directly or indirectly impact on sites of biodiversity importance or sensitivity. The assessment also describes the company's current contribution to biodiversity, for example through its environmental management systems. It evaluates to what extent existing policies and practices relate to biodiversity issues, and assesses the state of knowledge of biodiversity issues and opportunities within the company.



A biodiversity assessment allows managers to identify and prioritise significant business risks, potential benefits and opportunities associated with biodiversity, and therefore provides the basis for developing strategies to deal with these issues.

## 6. Examples of companies incorporating biodiversity into their strategy

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### **Wessex Water and its Biodiversity Action Plan**

The water and sewage treatment business Wessex Water is committed to sustainable delivery of services to its customers by reducing its environmental impact on rivers, the coastline and the wider environment.

As part of this strategy, Wessex Water developed its own Biodiversity Action Plan; the first corporate initiative of its kind to be based on the UK Biodiversity Action Plan (the UK Government's response to the Convention on Biological Diversity). Incorporating objectives and targets within the UK BAP, Wessex Water has initiated a range of activities to protect and enhance biodiversity at its operational sites and more widely

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across southwest England. This includes funding a number of partners, such as national and regional wildlife conservation charities, to run projects that will benefit a range of threatened species and ecosystems. One example is the restoration of chalk rivers in the Wessex region to provide ecological benefits to humans but also to enhance important aquatic biodiversity, such as threatened fish, plants and mammals. The UK government acknowledged the Wessex Water Biodiversity Action Plan as a best-practice example of corporate involvement in biodiversity work.

## Danone and wetland restoration

In order to offset carbon emissions, the Danone group, a global leader in dairy and bottled water, has partnered with the biodiversity conservation bodies World Conservation Union and Ramsar to establish an initiative to preserve and restore wetlands.

This initiative will take an integrated approach to wetland restoration and conservation, with benefits such as carbon storage and sequestration, biodiversity enhancement and poverty reduction. This partnership is developing the foundation for a new class of environmental investments known as wet carbon.

A pilot project has already been successfully completed; Danone provided \$1 million of funding to restore mangrove forests along the coast of Senegal in West Africa. Mangroves provide coastal areas with vital defence against storms, create nurseries for fish and regulate salt levels in soil used to grow rice, a staple food for the Senegalese. In total, 34 million mangrove seedlings were planted to restore these vital forests, acting as an important offset to the carbon footprint of Danone's Evian business.



### How Two Tomorrows and Biocensus can help you

Two Tomorrows and Biocensus work with clients to develop biodiversity strategies and practices, which in turn help unlock opportunities and manage key risks for your business. In particular, we can design and deliver workshops for key staff, carry out a biodiversity review of your operations and strategic planning. To find out more, see [www.twotomorrows.com/biodiversity](http://www.twotomorrows.com/biodiversity)



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