BIODIVERSITY is threatened by many human activities, and its loss has significant consequences for our planet. The Convention on Biological Diversity (CBD) has set, in 2002, the ambitious target of reducing the rate of biodiversity loss by 2010. A number of indicators were created to assess progress towards meeting that target. Can the 2010 Biodiversity Target be reached? What actions would be needed?
Biodiversity reflects the number, variety, and variability of living organisms, as well as how these change from one location to another and over time. It includes diversity within species, between species, and among ecosystems, in sum the diversity of all life on Earth.

Ecosystems provide the basic necessities of life such as food, clean air and water. They offer protection from natural disasters and diseases, shape human cultures and spiritual beliefs, and maintain the planet’s essential life processes. Biodiversity loss affects ecosystems, making them more vulnerable to perturbations and less able to supply humans with valuable services.

The impact of humans on the natural environment is significant and growing: changes in biodiversity have been more rapid in the past 50 years than at any time before in human history.

The indicators were established to monitor the status and trends of biological diversity, and to provide information on ways to improve the effectiveness of biodiversity policies and management programmes. These indicators cover seven focal areas which include reducing the rate of biodiversity loss, addressing its major threats, promoting its sustainable use, and maintaining ecosystem health.

While we still lack comprehensive global scale measures to assess progress towards the 2010 target, it is possible to describe trends in the status of biodiversity using these indicators. Taken together, they allow us to establish current trends regarding some important aspects of biodiversity, particularly when they are analysed and interpreted as a set.

The first focal area of the 2010 framework concerns the reduction of the rate of loss of biodiversity at ecosystem, species, and genetic levels.

Over the last 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history. For example, the conversion of forests for agriculture and pasture continues at an alarmingly high rate. Similar negative trends have been observed for other ecosystems such as grasslands, savannas, deserts, and freshwater, coastal and marine ecosystems.

The abundance and distribution of selected species are an indicator of ecosystem quality. Several assessments have revealed that the population size and/or geographic range of the majority of species assessed is declining. Exceptions include domestic species, invasive species, and species that have been protected through specific measures.

Over the past few hundred years, it is estimated that humans are responsible for up to a thousand times more extinctions than the natural rate. According to the IUCN Red List of Threatened Species, up to one out of two species within well-studied groups such as amphibians, birds or mammals is threatened with extinction, and the situation is deteriorating.

The genetic diversity of cultivated and domesticated species is of great importance from a human perspective, since it results in better adaptability of species to changing conditions. It is estimated that one third of all domesticated animal breeds are presently threatened with extinction. For non-cultivated species, genetic diversity is threatened mainly by overexploitation, as well as habitat destruction and fragmentation.

Protected areas are crucial to countering the continuing loss of ecosystems and species. They currently cover about one eighth of the Earth’s land surface, but only a small fraction of marine and coastal areas. However, there are substantial differences in coverage among ecological regions, and many types of ecosystems are almost not protected at all.
The sustainability of human use of biodiversity is the fourth focal area in the 2010 framework. Possible indicators could be the proportion of ecosystems under sustainable management or being certified as meeting certain criteria for sustainability.

The ecological footprint is a concept that calculates the area of land and water needed to sustain a defined human population, based on the population’s use of energy, food, water, building material and other consumables. In 1961 humanity was globally using about half of the Earth’s capacity to renew its natural resources. Now this capacity is exceeded, and overuse is still growing.

The second focal area concerns the maintenance of the integrity of ecosystems and their ability to support human livelihoods. Intense fishing has led to the decline of many species, notably cod and tuna. In the North Atlantic, the populations of large fish have declined by two-thirds in the last 50 years. The preferred fish for human consumption are becoming increasingly rare, forcing a shift to smaller fish and invertebrates and eventually reducing the overall supply for human consumption.

In many terrestrial and inland water ecosystems, human activities lead to the fragmentation of habitats. The resulting smaller patches of habitat support smaller populations, which as a result become more vulnerable to local extinction. Forests and river systems both show high levels of fragmentation.

The third focal area concerns the five major threats to biodiversity: invasive alien species, climate change, nutrient loading and pollution, habitat change, and overexploitation.

The availability and use of fertilizers on a commercial scale contributes to the growing productivity of agriculture. However, nitrogen and phosphorus from those fertilizers can have severe impacts on the environment. The human production of nitrogen has increased sharply since 1960.

Invasive alien species can have devastating impacts on native species, causing extinctions and affecting natural and cultivated ecosystems. Some invasive alien pests or diseases can entail enormous economic costs. In the recent past, the rate and risk associated with alien species introductions have increased significantly, notably because of increased travel, trade and tourism.

To what extent are ecosystems used sustainably?

The quality of inland waters has been affected by pollution, increased sedimentation, climate change, the extraction of fresh water for agricultural and industrial use, human consumption, and physical alterations such as the diversion and canalization of watercourses. Since the 1980s, river water quality has improved in Europe and the Americas but it has deteriorated over the same period in Africa, Asia, and the Pacific region.
Both an analysis of current trends and different plausible scenarios, indicate that biodiversity loss is likely to continue in the foreseeable future, and certainly beyond 2010. Unprecedented additional efforts at all levels will be needed to achieve the 2010 Biodiversity Target.

It is too soon to assess progress towards the goals and targets set by the Convention, but prospects seem better for some targets than others. It is possible to achieve many of the targets if the Convention on Biological Diversity is properly implemented. However, it appears very unlikely that all the targets will be achieved globally by 2010.

Most of the factors causing biodiversity loss—habitat change, climate change, invasive alien species, overexploitation, and pollution—are projected to remain constant or increase in the near future. Additional actions are required to address these factors.

It is imperative to integrate biodiversity concerns into economic and development planning, programmes and policies and to engage the main actors in key economic sectors. More specifically, biodiversity concerns should be integrated into the food and agriculture sector, the energy sector, trade policies, and poverty alleviation strategies.
Much progress has been made in terms of developing policies and tools for implementing the Convention on Biological Diversity, but implementation at national level has so far been limited. Urgent and unprecedented actions are needed to achieve the 2010 Biodiversity Target.

In order to meet the 2010 target, the Parties to the Convention should develop and ensure the implementation of comprehensive national biodiversity strategies and action plans, promote greater awareness of the importance of biodiversity, and integrate biodiversity concerns into national policies, programmes and strategies on trade, agriculture, forestry and fisheries, and development planning.

Meetings of the Conference of the Parties to the Convention offer the opportunity to agree upon necessary actions for addressing threats to biodiversity. Meeting the objectives of the Convention requires concerted action from all nations of the world. Therefore, all countries should adhere to the Convention since it is critical to sustain life on Earth.

As individuals, we all have an essential part to play in promoting biodiversity conservation and sustainable use. We can demand action from all levels of government. Moreover, in our everyday choices, we all can have direct positive impacts on biodiversity and the state of our planet’s ecosystems, for instance by supporting sustainable consumption and waste reduction.

Corporations should also assume responsibility for the environmental impacts of their activities and choose suppliers that adopt sustainable practices.

**Conclusion: What actions are needed?**

**GLOSSARY**

**Alien species** – An alien species is a species introduced outside its normal distribution. Invasive alien species are alien species whose establishment and spread modify ecosystems, habitats, or species.

**Biodiversity** – Biodiversity is a contraction of biological diversity. Biodiversity reflects the number, variety, and variability of living organisms. It includes diversity within species (genetic diversity), between species (species diversity), and between ecosystems (ecosystem diversity).

**Climate change** – Defined by the United Nations Convention on Climate Change as “change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”.

**Ecosystem** – An ecological unit made up of a complex system of interactions between living communities (plants, animals, fungi, and microorganisms) and the environment they live in. Ecosystems have no fixed boundaries; a single lake, a watershed, or an entire region could be considered an ecosystem.

**Habitat change** – Change in the local environmental conditions in which a particular organism lives. Habitat change can occur naturally through droughts, disease, fire, hurricanes, mudslides, volcanoes, earthquakes, slight increases or decreases in seasonal temperature or precipitation, etc. However, it is generally induced by human activities such as land use change and physical modification of rivers or water withdrawal from rivers.

**Species** – A group of organisms that differ from all other groups of organisms and that are capable of breeding and producing fertile offspring. This is the smallest unit of classification for plants and animals.

**Sustainability** – A characteristic or state whereby the needs of the present and local population can be met without compromising the ability of future generations or populations in other locations to meet their needs.
This publication presents a faithful summary by GreenFacts of the “Global Biodiversity Outlook 2”, by the Convention on Biological Diversity (CBD), a leading scientific report on the topic.

The “Global Biodiversity Outlook 2” assesses the current status and trends of biodiversity and the key drivers of biodiversity loss. It provides a powerful case for the importance of biodiversity to human well-being. The report contains a succinct overview of the status of the implementation of the Convention on Biological Diversity, progress towards the 2010 Biodiversity Target and its contribution to the achievement of the UN Millennium Development Goals. As 2010 approaches, the document identifies key actions required at all levels to achieve the 2010 target.

This summary, along with a more detailed one, can be found on www.greenfacts.org/en/global-biodiversity-outlook/