

# **Fourth National Report under the Convention on Biological Diversity**

**GERMANY**

**30.03.2010**

## **Foreword**

The event with the greatest influence on biodiversity policy since the presentation of the Third National Report was the 9th Conference of the Parties to the CBD, held in Bonn in May 2008. The conference and the associated national campaign “Life Needs Diversity” stimulated a pioneering spirit in Germany which spurred on the implementation of the CBD and prompted or reinforced numerous national and international activities – in particular the adoption of a comprehensive National Strategy on Biological Diversity. It also aroused expectations which in many cases will not be easy to fulfil in view of competing goals with regard to natural resources.

Against this background, the Fourth National CBD Report describes how biological diversity has developed in Germany, what efforts Germany has made, what successes it has achieved and where there is a need for further action. The biological diversity situation continues to be alarming. Germany believes it has a responsibility to help change this situation.

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## Chapter I – Overview of biodiversity status, trends and threats

### 1. Overall picture

#### 1.1 Overview of biological diversity in Germany

Germany has a land area of 357,114 km<sup>2</sup>. Its Exclusive Economic Zone (EEZ) in the North Sea and Baltic totals 32,980 km<sup>2</sup>. With a population density of 231 inhabitants per km<sup>2</sup> it is among the densely populated countries on a global comparison.

Five major topographic regions can be distinguished in Germany: 1. North German plain, coasts and sea, 2. Central European hill country, 3. South-west German hill country/scarplands, 4. Alpine foothills and 5. Alps.

On present knowledge, some 48,000 animal species, 9,500 plant species and 14,400 species of fungi occur in Germany. Thus on a worldwide comparison, Germany is among the regions less richly endowed with animal species as a result of its geological development and its geographical location. The total number of vascular plants (tracheophytes) occurring in Germany is around average on a global scale.

In view of Germany's geographical position in Central Europe and the relatively short time that new species have had to evolve since the last ice age, only a small number of endemic animal species have been able to develop here compared with South European or tropical countries. At present, 21 endemic animal species are known, plus a number of endemic subspecies. To date, some 85 endemic families of ferns and flowering plants are known.

In addition to these endemic species, Germany also has a special worldwide responsibility for species of which a large proportion of the world population live in Germany or which are endangered worldwide. For example, a special responsibility of this kind exists for 259 of the fern and flowering plant species (6.3%) and for 18 of the naturally occurring mammal species (21%). One example of an animal species for which Germany has an outstanding responsibility is the red kite, of which more than 50% of the world population live in Germany.

Some 788 plant communities can be distinguished in Germany. As expected, a study of the distribution of plant communities among the major topographic regions revealed that more plant communities occur in the more varied hill and mountain country (653) than in the lowland areas (577). In the relatively small area of the German Alps there are only 231 communities.

As far as habitat diversity is concerned, it is possible to distinguish about 690 biotope types in Germany, excluding purely technical or technologically formed biotopes such as roads or buildings. Of these, 165 are marine or coastal biotope types, 123 relate to rivers and lakes, 352 are terrestrial and semi-terrestrial inland biotope types, and 50 occur primarily in the Alps. At landscape level, 858 individual landscapes can be distinguished in Germany

(including 59 in conurbations), and these can be classified in 24 different landscape types. 402 of these individual landscapes, accounting for some 49% of the area of Germany, are judged worthy of protection. A considerable share is due to forest landscapes and well-wooded landscapes. On the habitats front, Germany has a special responsibility for the habitats of the Wadden Sea and the Central European beech woods in particular, which have their main areas of occurrence here.

More than half the area of Germany (53%) is currently used for agricultural purposes. The area under forest is 31%. Since 1993 there has been continuous growth in the areas of the use categories: buildings and waste land, traffic infrastructure, and water and recreational areas. Land take for settlement and traffic purposes is currently running at 113 hectares per day (average 2004–2007). This growth is largely at the expense of farmland. Whereas agricultural land continues to show a decline, the area under forest has increased since 1993. The North Sea and Baltic Sea are also subject to a wide variety of uses. The Exclusive Economic Zone (EEZ) shows an increase in the areas used for extraction of mineral resources and generation of wind energy in particular. In addition to shipping routes and energy transmission lines there are also localised uses, such as mariculture facilities in the Wadden Sea area. These will become increasingly important in the future.

## **1.2 Biodiversity status, development and threat factors in Germany**

In 1998, according to the endangerment classification under the Red Lists, the existence of 36% of the approximately 16,000 species studied in Germany was threatened, and 3% were extinct or lost. Three percent were on the early warning list. Of the roughly 3,000 species of ferns and flowering plants investigated in Germany, 26.8% were classified as threatened and 1.6% as extinct or lost in 1996. In the case of mosses, 34.5% of the 1,100 species occurring here were threatened and 4.8% were extinct or lost. Up-to-date figures are currently being compiled for the new 2009 and 2010 Red Lists of endangered animals, plants and fungi.

A detailed analysis of the risk factors responsible for this situation was made in an R+D project commissioned by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The analysis, published in 2005, is based on extensive secondary research and a survey of 333 experts on 601 animal species in 11 species groups (mammals, breeding birds, reptiles, amphibians, ground and sand beetles, water beetles, butterflies, moths, grasshoppers, dragonflies and notostracans).

It indicates that the commonest risk factors across all animal groups are diffuse nutrient inputs and the succession in unused habitats (growth of shrubs and bushes and silting-up/shading of waters). These are followed by building, drainage of wet grassland and streams/ponds, fragmentation of open landscapes, and regulation of rivers/lakes.

Details of the threats to the bird world are provided by the Red List of breeding birds in Germany, which was published in September 2008. This shows that 260 domestic bird species are currently classified as regularly breeding in Germany. Of these, 110 species (42%) are listed in an endangerment category. There are a further 21 species on the early warning list. Bird species at special risk are those specialising in certain habitats such as bogs and heaths, coastal or high alpine areas, and also open-country species. At present, 30 bird species in Germany are directly threatened with extinction. Of these, there is a particularly alarming

decline in the population of the ruff, which is highly dependent on wetlands. The population of a small number of other species has improved.

Of the 100 commonest species of breeding birds, 20 appear in the current Red List. 14 of these are on the early warning list, 4 species are listed as endangered, and 2 species as highly endangered. The highly endangered species include the peewit (or lapwing), which – like the skylark, which is classified as endangered – used to have substantial populations in large areas of Germany until a few decades ago.

➤ *Invasive species*

Alien species may also be a factor endangering biological diversity. At present some 264 alien animal species and 609 alien plant species are considered to be established in Germany. About 5% of these species are of an invasive character. This means they endanger biological diversity, e.g. by competing for habitats or resources, by transmitting diseases, or by changing the gene pool through cross-breeding. Individual examples of this are known. One example is perennial knotweeds, which frequently displace domestic species, forming monocultures in stream and river valleys. Alien species may also influence human health, e.g. the giant cow parsnip, which may produce painful skin irritation as a result of contact combined with sunlight, or the allergenic mugwort ambrosia (*Ambrosia artemisiifolia*).

In Central Europe, in view of the glacial background to its long land-use history and its position as a geographical transit region, invasive species play a far less significant role in endangering species diversity than on the Galapagos Islands, for example, which have been isolated for a long time. However, in future the predicted global warming is likely to bring an increase in the spreading of alien species and the introduction of new species, and hence an increase in the risk due to invasive species.

➤ *Climate change*

Climate change is already having marked effects on nature. For example, apple trees have been starting to blossom nearly five days earlier per decade since 1960. Migratory birds like the blackcap are returning from their winter quarters considerably earlier. On the basis of model calculations, the decades to come are expected to bring changes in the range of distribution of species and in the quality of habitats within the present distribution areas. Adverse impacts are predicted in particular for species in mountain and coastal regions, for species with specialised requirements such as aquatic and wetland habitats or localised niches, and for species with poor propagation characteristics or limited opportunities for propagation.

➤ *Species population development*

The population situation in Germany has improved for individual species. For example, targeted protective measures at the nesting places of specific endangered bird species such as the sea eagle, Montagu's harrier or the little owl have resulted in a marked increase in populations. Other "flagship species" in the field of bird protection, such as black stork, peregrine falcon and eagle owl, have actually been removed from the latest Red List of breeding birds in Germany as a result of targeted governmental and volunteer protective

measures. For a number of forest-dwelling birds living in hollow trees, such as stock dove, black woodpecker or nuthatch, a slight positive trend was recorded for the overall period from 1990 to 2005. This is due to the more natural forestry management practices that have been adopted in many places. This also demonstrates in particular the beneficial effect of the nature-friendly forestry management guidelines in the public sector (e.g. protection concepts for habitats and hollow trees).

The resting populations of many water birds (e.g. goose and cormorant) on inland waters have increased, partly as a result of the successful efforts since the 1970s to protect undisturbed resting areas, but populations of Charadriiformes (waders and gulls) have shown a decline. Longer-term increases in both breeding and resting populations over the past 25 years are shown in particular by water bird species that look for food on agricultural land outside the breeding season (e.g. mute swan and a number of geese). They are profiting above all from for a rich supply of food and the numerous mild winters.

In the field of mammals, positive population trends are reported for the grey seal and many species of bats. Following its former persecution, the grey seal is currently managing to recover slightly at a very low level, and about 20 young are counted every year in the German parts of the North Sea. In the plant sector too, targeted maintenance measures (e.g. bush removal, extensive mowing and grazing) have resulted in stabilisation of the populations of rough grazing plants such as gentian and orchid species or wild daffodil, for example. In spite of these exemplary positive trends and successes for individual species, the population situation for fauna and flora species as a whole gives cause for concern.

#### ➤ *Biotopetypen*

It is possible to distinguish approximately 690 biotope types in Germany (excluding purely technical or technologically formed biotopes such as roads or buildings). Of these, 72.5% are classified as endangered according to the Red List of endangered biotope types published in 2006, and 2 biotope types have been completely eliminated. The great majority of biotope types not classified as endangered on present knowledge belong to the group of “types not worthy of special protection” (18.8%). Some 6.2% of biotope worthy of protection were classified as not endangered.

Marine and coastal biotopes and certain habitats typical of the Alps have a particularly large share of endangered biotope types. Many biotope types in aquatic habitats are also endangered. In the terrestrial sector, endangered biotope types are particularly common in dry grassland, lowland bogs and wet grassland, sedge reed beds, dwarf shrub heath and deciduous forests. A large proportion of endangered biotope types are found in river meadows.

The analysis of current development trends shows that the population development of 44.9% of all endangered biotope types can be regarded as stable. 43.9% display a negative trend, while 5.4% are increasing. For the remaining 5.8% it is not possible to provide any information on current trends. The situation in the Alps and the marine habitats – presumably thanks to less intensive use – is considerably more favourable than in inland waters and other terrestrial habitats. Moreover, in marine and coastal habitats the proportion of biotope types that are increasing again is relatively large. For example, a marked increase in near-natural salty grassland can be observed at the North and Baltic Sea coasts. In the terrestrial sector the



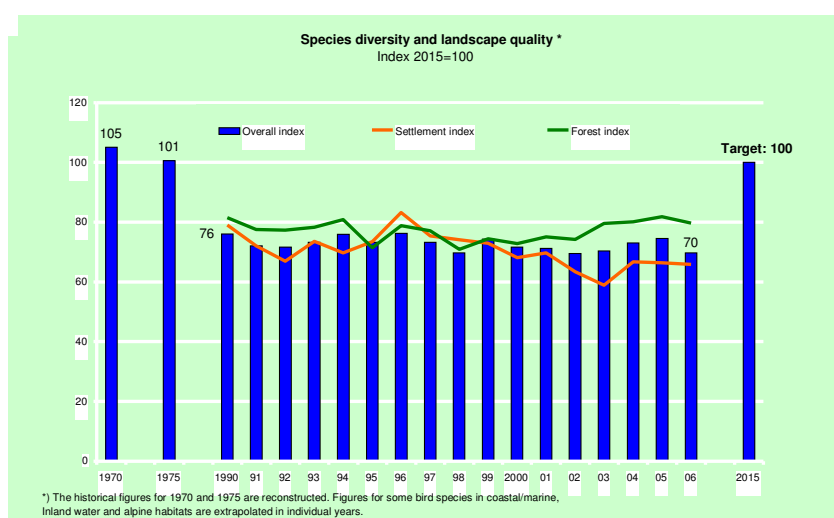
growth applies largely to wasteland and intensively used grassland and habitat types characterised by trees and shrubs, whereas biotope types that are valuable from a nature conservation point of view are on the decline.

➤ *Genetic variety*

One major aspect of biological diversity is genetic diversity within the individual species. The factors that endanger the diversity of species and habitats could also have impacts at the level of genetic diversity. For a large number of plant and animal species, the introduction of individuals from other regions of origin may be a factor endangering the genetic authenticity and diversity of local and regional populations. Examples includes the threat to the black poplar from hybrid poplars planted for forestry purposes, or to aquilegia from garden varieties.

The diversity of the species grown as crops and their wild forms is also an aspect of biological diversity. The conservation and sustainable use of genetic resources in agriculture and forestry, fisheries and the food industry is very important, especially in view of climate change and the necessary adaptive capacity of crops and animals. The diversity of crop species and livestock breeds has shown a marked decline due to economic factors in production. Today, traditional crop varieties and livestock breeds are being used less and less in agriculture, with the result that some are endangered, at risk of extinction, or already lost. Thus, out of 431 breeds of the nine important domestic animal species originally found in Germany, only two to five breeds per species continue to be of economic importance. Of the Germany livestock breeds still in existence, 15 cattle, 19 sheep, 3 goat, 12 horse and 3 pig breeds are currently regarded as endangered.

➤ *The sustainability indicator for species diversity*



Source: Federal Agency for Nature Conservation (2008)

*Explanation: The indicator is calculated on the basis of the development of the populations of 59 bird species representing the main landscape and habitat types in Germany (farmland, forests, settlements, rivers and lakes, coasts/seas and the Alps). For each individual bird species, a committee of experts has defined population targets for the year 2015 which could be achieved given speedy implementation of European and national legal provisions relating to nature conservation and the principles of sustainable development. Every year, an overall indicator value is calculated from the degree of target achievement for all 59 bird species. The indicator value has hardly changed in the last 10 years of observation (1997-2006), showing no detectable development trend. In 2006 it stood at around 70% of the target for 2015. If the trend remains unchanged, it will not be possible to achieve the target for 2015 without substantial additional efforts by national, regional and local authorities in as many policy areas as possible relating to nature conservation and landscape protection.*

*The figures for the six sub-indicators, which were even further apart in the early 1990s, sowed signs of convergence up to 2006. Between 1997 and 2006 the indicators for settlements and for coasts and seas showed a significant downward trend, whereas the indicators for farmland, lakes and rivers and the Alps stagnated. Only the indicator for forests has shown a significant positive development since 1997. In 2006 it reached 80% of the target figure, whereas at this time the level of the other indicators was only around two thirds of the target.*

## **2. Individual ecosystems**

### **2.1 Agricultural ecosystems**

Agriculture, with 53% of the total area, is the most important form of land use in Germany. The biggest shares of agricultural are due to arable land with around 70% and permanent pasture, with about 28.7%. However, land take for settlement and traffic purposes is currently running at 113 hectares per day, largely at the expense of agriculture and forestry. As a result, the area in agricultural use fell by a total of 226,000 ha (-1.3%) between 1999 and 2008. Whereas the share due to arable land showed a slight rise (+0.9%), permanent pasture fell by 6.4%. This applied particularly to meadows (-16.8% compared with 1999) and grazing land including alpine pastures (-31.6%). By contrast, the area used as temporary hay pasture increased by about 290,000 ha during the same period. Since 2006 a further share of permanent pasture has been removed from agricultural production (total of around 14,500 ha in 2008).

Agriculture, with its natural resources, makes a major contribution to maintaining and conserving the cultural landscape and to safeguarding employment in rural areas. As the

biggest land user, it has a key function in the conservation of biological diversity in Germany. Factors of crucial importance for loss of biological diversity include destruction of habitats (e.g. settlement and traffic areas) and quality impairment (e.g. fragmentation or pollution), and also the intensification of agriculture.

Germany is therefore advocating improved measures to protect biological diversity and the diversity of landscape structures in the agricultural sector. These include promoting varied crop rotation, and maintaining and making sustainable use of genetic resources for the agricultural and food industries.

An analysis for various groups of animals showed that agricultural activities have a significant influence on the occurrence of species. This also manifests itself, for example, in the development of certain bird populations in the agricultural landscape. Marked decreases are found to occur here. This is particularly true of ground-nesting species such as lapwings and skylarks, and wet-meadow species such as the dunlin and the ruff.

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Organic farming is specially geared to sustainability. It makes a special contribution to conserving and saving natural resources, has many positive impacts on nature and the environment, and serves to produce high-quality food and safeguard jobs in rural areas. Its cultivation rules include doing without readily soluble mineral fertilisers and synthetic chemical pesticides, and refraining from using genetically modified organisms. From an economic point of view, the smaller production quantities per unit area are sometimes offset by higher prices for organic products.

Soil-friendly cultivation methods that avoid using turnover ploughs help to maintain the habitat function of the soil and to protect the diversity of soil organisms.

From 1994 to 2008 the share of farmland accounted for by organic farming increased from 1.6% to 5.4% (911,385 hectares). In 2008 the additional area of 46,049 hectares (ha) was once again larger than the year before.

Apart from organic farming, there are a number of other agro-environmental measures which, in combination with site-appropriate agricultural use, make an important contribution to maintaining and improving biological diversity.

## **2.2 Forests**

Forests, especially deciduous forests, used to be the predominant natural ecosystem in Germany. As a result of the country's settlement history, the high population density and the resulting centuries of forest use, there are practically no original forests left in Germany; natural forest stands hardly affected by human influence only exist in fragments. They are found in particular in natural forest reserves and core areas of national parks and biosphere reserves.

At present, about 31% of the land area (11.1 million ha) is covered by forest. This makes Germany one of the most forested countries in the European Union. Over the past four decades, the area under forest has grown by around 1 million hectares.

Forest ownership in Germany is broadly distributed. The main form of ownership is private forests with about 44% of the forest area, while 33% are state-owned and 20% are owned by corporate bodies. The great majority of forests perform important protection and recreation functions and supply the domestic population with wood as a renewable natural resource. Utilisation of wood as a raw material takes place in accordance with the legal provisions in force in Germany.

Forestry in Germany is sustainable. This is ensured by the legal requirements, especially the forestry acts at federal and Land level, and a forestry tradition going back more than 200 years. Furthermore, a large proportion of forests enjoy additional protection status because of their special importance for the natural regime.

Timber and forestry – within the limits of their potential – will be urgently needed in the future to make it possible to achieve the ambitious targets of the German government and the European Union for increasing the share of energy consumption provided by renewable energies and reducing carbon dioxide emissions.

In view of its position at the distribution and diversity centre of Europe's beech woods (with a 25% share of their total area), Germany has a global responsibility for the conservation of beech woods. If nature were left to itself, about two thirds of Germany would be covered by beech woods and beech-based mixed forest. Today the naturally prevailing beech and oak trees only account for some 14.8% and 9.6% respectively of the breakdown of tree species. From a nature conservation point of view, a larger proportion of beech woods in particular would be desirable.

### **2.3 Inland waters**

The total distance covered by all streams and rivers in Germany adds up to 400,000 km (LAWA 1995); about two thirds of this is due to minor streams and rivers. For centuries, rivers and their meadows have been used by people in many ways, for example as shipping routes or receiving waters for discharge of treated wastewater, and for energy generation, agricultural production, and – not least – drinking water supplies. Such uses and the regulation of the receiving waters, combined with substance inputs, technical hydraulic engineering and maintenance have in some cases resulted in substantial impairments to the natural regime and to the function of the rivers as a habitat for plants and animals.

Over the past thirty years the quality of the water in many rivers and streams has improved considerably; for example the Rhine, which 25 years ago was highly polluted, is now back to quality class II (moderately polluted) along almost its entire length. In the interests of sustainable development of water bodies, there is now a need for increased efforts to improve aquatic ecology and to include the river meadows. In the 2001 water structure mapping project, more than three quarters of the waters studied were classified as having undergone marked or complete change; a recent survey of transverse structures indicates that, on average, the continuity of rivers in Germany is interrupted by a transverse structure every two kilometres.

Most natural lakes in Germany are situated in those regions that were covered during the last glacial period, i.e. mainly in the north-east of Germany and the Alpine foothills. Human activities have given rise to numerous mining lakes, gravel pits and reservoirs. Few lakes in Germany have been able to maintain their naturally nutrient-poor state. As well as excessive nutrient inputs resulting mainly from agriculture, adverse effects on the riparian zones are an additional problem. In nearly all major still waters, large sections of the banks and shores have been destroyed by building structures and recreational uses. Many lakes have also lost 80–90% of their former reed beds.

The EU Water Framework Directive requires good status for all waters by 2015. This is to reflect not only good water quality, but also the most natural possible structure and continuity of the water body, and an intact water balance regime. In 2004, the first inventory required under the Directive 2004 found that this target could probably be achieved without further measures for 12% of rivers and 38% of lakes in Germany. By contrast, the target is unlikely to be achieved for 62% of rivers and 38% of lakes, and for roughly a quarter of all rivers and lakes it is uncertain unless additional measures are taken to improve the state of the water bodies and meadows.

#### **2.4 Marine and coastal regions**

With 71% of the Earth's surface, the oceans and seas are the largest ecosystems and the most important worldwide. Apart from climate change, the main reasons for global endangerment of marine species include overfishing and other forms of exploitation. These are increasingly affecting the long-lived species in particular, such as sharks, rays and marine mammals. Because of the sheer vastness of the oceans, man's use of the seas relied for a long time on a belief in the inexhaustibility of marine resources and their unlimited capacity for regeneration. However, the intensive use of the seas, increasing marine activities, climate change and land-based pollution of the sea not only result in a need for a change of attitudes in marine policy, but also create great pressure to take action. Conserving the natural resources of the oceans is not only an issue of concern from an environmental protection point of view, but is also a matter of economic and social interests.

Germany's coasts are among its regions of particularly intensive use (e.g. wind energy, tourism, settlement, dyke construction, industrial uses and ports), which are protected by coastal defence structures. Many of the typical species and 90% of the biotope types in these regions are considered to be endangered or at risk of extinction. The increasing use of the seas is threatening the diversity of species and habitats, but it can also have adverse effects on people's livelihoods. Some commercially used fish stocks have already been so drastically reduced by overfishing that full reproductive capacity can only be restored with the aid of strictly implemented long-term management plans (e.g. cod (*Kabeljau*) / North Sea, cod (*Dorsch*) / Central Baltic, whiting, plaice and sole / North Sea).

#### **2.5 Mountain ecosystems: Alps**

The Alps are one of the largest contiguous natural regions in Europe. Their typical features include their diverse topography, the naturally great dynamic development of the mountains, and the way large near-natural areas (e.g. mountain rivers, lakes, rocky regions, unused

forests) co-exist with land used for agricultural and forestry purposes (e.g. alpine pastures and mountain meadows). Many species do not occur anywhere else but here. Sustainable management, in many cases based on tried-and-tested methods that have evolved down the centuries, preserves the special regional and cultural features and also contributes to the great diversity of habitats und species.

The Alpine region with its sensitive mountain areas and the highest parts of the central uplands are particularly sensitive to encroachments on the natural regime or to excessive populations of hoofed game. Some 54% of typical Alpine biotope types in Germany are already endangered or at risk of complete destruction. In particular, the intensive use of treeless mountain slopes as ski runs creates a considerable risk of large-scale soil erosion. Tourist, agricultural and forestry uses and infrastructure development have to take special account of this situation.

The national report on the implementation of the Habitats Directive, compiled in 2007, documents for Germany that the conservation status of 60% of habitats and 53% of species of European importance in the Alpine regions is favourable. Only 26% of habitats and 15% of species are in an unsatisfactory condition, and 7% of both habitats and species are in a poor state. The conservation status of about a quarter of the species and 7% of the habitats is not known.

## **2.6 Settlement**

Land take and fragmentation due to settlement and traffic cause considerable problems in Germany. Both lead to increasing isolation and shortage of habitats for plants and animals and of recreation areas for people, giving rise to changes in scenery and cultural landscape and reducing the functional capacity of the balance of nature and landscape. At the end of 2007 the proportion of the total area of Germany accounted for by settlement and traffic areas amounted to 13.1% – or more than 46,000 km<sup>2</sup>. Although average daily land take for settlement and traffic has fallen slightly in recent years, the average figure for 2004 to 2007 was still around 113 hectares per day.

Demands on nature in towns and cities are varied. Children need places where they can experience nature to ensure healthy mental and physical development. People living alone are the most frequent users of public parks. There is an urgent need to expand natural spaces in inner city areas, having regard to the different demands of the various population groups. In many urban areas there is a shortage of green spaces that can be used by people and serve as habitats for species.

Numerous studies show that cities today are often considerably richer in species than the surrounding country. Domestic species find alternative habitats here, and warmth-loving immigrant species tend to settle here.

Lack of vegetation and a surfeit of sealed surfaces make for deterioration of urban climate and air quality, and have adverse impacts on the water balance and species diversity. Open spaces in urban areas, green road verges and greening of structures can help to improve the urban climate situation in various ways. The greater the size of a green space, the greater is its climatological range. For example, the “Große Tiergarten” park in Berlin brings about

temperature reductions that make themselves felt up to 1.5 km into the surrounding built-up area.

Good accessibility and interconnection of green spaces are not only crucial for their usability, but also make city centres more attractive. This helps to curb land-consuming migration into the hinterland and reduce the volume of traffic.

### ***Green spaces close to settlement areas***

Intact ecosystems and restful landscapes are important not only in rural areas, but also in towns and cities. In Germany, cities in particular display great biological diversity. With their green spaces, waste land and parks, they help improve the quality of the air and the urban climate. They also provide opportunities for recreation, social contact, games and a variety of leisure activities. Studies and activities show that awareness of urban and peripheral green spaces is increasing. For example, 56% of the respondents in a Forsa survey on biodiversity in 2007 said that they regarded proximity to nature, i.e. parks, woods and fields, as the most important factor when choosing where to live (BMU 2007). There are plans to step up the number of regional parks and open-space networks within reach of large cities in Germany by 2020.

## **3. How changes in biodiversity affect human well-being**

Intact ecosystems play an important role in how people feel. Essentially this is a matter of economic, health-related and social aspects. Not only direct ecosystem-related functions (freshwater supply, air purification, etc.), but also recreation, leisure, tourism, sport and health, as well as regional and cultural identity, depend on intact attractive landscapes. As a result, changes in ecosystems have a direct influence on social needs. A large proportion of the population are also aware of these important functions of biodiversity. In the Environmental Awareness Study 2008, more than 90% of the respondents believed that conserving natural habitats was important not only for nature, but also for people. Intergeneration equity is seen as the best argument for conserving biological diversity. But the importance of natural habitats for recreation, and hence for health care, is also an important argument. If as many people as possible are to be persuaded to act, it is therefore important to keep on informing them about the significance and value of biological diversity.

### **3.1 Employment potential of biological diversity**

Biological diversity is also an important factor for economic development. Many jobs and livelihoods are directly or indirectly dependent on nature and landscape. Especially in a society that is developing into a knowledge and services society, there is great potential here for new employment opportunities. Another important consideration is that these employment opportunities should depend as little as possible on transfer payments.

Conservation and sustainable use of biological diversity generate economic effects which have positive impacts on the labour market. Thus conservation and sustainable use of biodiversity, combined with intact nature and landscape, are an important locational factor for Germany. As a result, not only residential areas with plenty of greenery, but also nearby

places for experiencing nature and attractive local recreational areas are held in high regard and may play a decisive role in family or company decisions to move to a particular region.

Sustainable use of biological diversity offers employment opportunities in a large number of industries and fields of activity: especially nature conservation, landscape maintenance and planning, farming, forestry and the timber industry, tourism, sport, recreation, fishing, pharmaceuticals, biotechnology, the energy industry, construction, trade, research and education:

- At least 20,000 people are employed in landscape maintenance in Germany. There are around 12,000 paid jobs in the nature conservation sector.
- Agri-environment schemes are being implemented on about 28% of agricultural land. These are becoming increasingly important for safeguarding livelihoods in the farming sector, particularly in structurally weak regions. Without agri-environment schemes, farms on sites with marginal yields and high nature conservation value are at risk.
- Organic farming provides some 30,000 jobs in Germany. All in all, the number of jobs in organic farming, processing and trade in such products has risen to around 150,000, which means it has doubled since 1995. Assuming that the organically farmed land area increases to 20 percent by the year 2010, the relevant union (*IG BAU*) and the German nature conservation federation NDR (*Naturschutzing Deutschland*) expect 160,000 new jobs in the entire organic food industry.
- The marketing of naturally produced regional products and services is currently a small but fast-growing sector which focuses on premium products with high regional added value. High product quality, special production rules and the association with the nature and landscape of the region ensure a unique selling proposition in global competition. According to figures published by the German Landscape Maintenance Association, the number of regional marketing projects and initiatives rose from 102 in 1996 to around 450 in 2004.
- Another important approach is to tap the employment and added value potential of breeding research for crop plants. Special innovation potential exists in the fields of evaluating and using genetic resources, expanding the spectrum of cultivated species and improving the properties of cultivated plants (e.g. breeding for resistance), particularly in view of the expected changes in climate. In Germany, some 12,000 jobs in plant breeding and seed production depend on innovative and competitive products, as do the more than half a million jobs in agriculture and the 4 - 5 million in the upstream and downstream sectors. The aim is to secure and expand these jobs, which relate to the entire value-added chain of agricultural production from breeding and propagation to the processing of high-quality farm produce.
- Nature-focused sports such as rock-climbing, hiking, canoeing, diving or angling depend on intact nature as the basis for their experience value and generate economic added value. Forty million hikers spend €7.5 billion solely in their chosen regions. Thus some 144,000 jobs are generated by hiking tourists. In 2002, sales by the water sports market in Germany came to €1.67 billion. The 3.5 million active anglers in Germany spend more than €3 billion a year, thereby securing 52,000 jobs.
- Some 45,000 jobs in industry, trade and the hotel and restaurant sector and 4,300 jobs in the marine fishing sector in the Baltic and North Sea depend on the fishing industry.



- The forestry and timber industries, which in addition to forestry with its 2 million forest owners also includes the wood processing industry, wood craft trades, paper industry, printing and publishing industry, and timber trading and transport, has some 152,000 works in Germany with more than 1.3 million employees and annual sales of around €168 billion.
- Many jobs in the pharmaceuticals industry and the trade in medicinal plants also depend on the conservation of biological diversity at national and global level. Medicines obtained exclusively from medicinal plants have an annual sales volume of around €5 billion on the European market, of which 40% is due to Germany alone. Over 70 percent of Germans take plant-based medicines, and in 2003 they spent about €2 billion on phytopharmaceutical products.
- In the growing market for renewable energy, the biomass sector in particular plays a role in the sustainable use of biological diversity. Renewable raw materials for bioenergy production are currently grown on about 14% of arable land. To this must be added about 3% of arable land for use as materials. At present, some 96,000 people work in the bioenergy industry, and the number is increasing. Energy generation from organic material produced on naturally farmed or maintained land inside and outside protected areas makes economic sense and safeguards the ecological potential of such land. There is a wide range of renewable raw materials for use as material. For this reason, promoting the use of renewable resources as material can make a valuable contribution to biological diversity.

### **3.2 Nature as a productive force**

In the course of evolution over many millions of years, nature has found optimised solutions to a vast range of problems. These can be used as models for innovation and technical and organisation developments. Knowledge about and sustainable use of biological diversity has been and remains a key to developing a modern society with a viable future.

The cultivated plants and livestock breeds developed from wild species by farmers and breeders down the centuries, and also the microorganisms used in food technology and as biological crop protection agents, are an important natural asset. Conservation and sustainable use of these genetic resources is a basic precondition for further advances in breeding and innovations in response to changing product requirements, new product uses, e.g. as renewable raw materials, and in the interests of more sustainable use systems. The tasks of conserving and improving the organisms and ecosystem functions associated with agricultural production, e.g. the soil organisms that are important for fertility and the fertilisation function of insects, are also of great importance for the functional capacity of agricultural production. To tap the potential benefits of genetic resources for food and agriculture, it is first necessary to determine their properties, functions and use requirements and make them available for breeding.

### **3.3 Importance for tourism**

The importance people attach to healthy living is also reflected by the growing popularity of health and wellness tourism. This trend is supported by a desire to experience nature at first

hand. In Germany, tourists display special interest in the coasts, the central uplands with their attractive river landscapes, and the Alpine region. National parks, nature parks and biosphere reserves are becoming increasingly important tourist destinations (*Daten zur Natur 2008*).

Effects of major protected areas on the regional economy:

Müritz National Park: Gross annual sales of around €13.4 million mean about 630 jobs.

Altmühltal Nature Park: Gross annual sales of around €20.7 million mean about 483 jobs.

Hoher Fläming Nature Park: Gross annual sales of around €6.2 million mean about 211 jobs.

Schleswig-Holstein Wadden Sea National Park: Gross annual sales of between €101 and €117 million are the equivalent of about 4,000 to 5,200 full-time jobs.

Sustainable tourism makes an ideal contribution to conserving biological diversity and may have positive economic impacts on the region. A study of the 14 national parks in Germany, conducted by the University of Würzburg for the Federal Agency for Nature Conservation (*BfN*), revealed that about 51 million people visit the national parks every year. Sales totalled around €2.1 billion. If one considers only the 10.5 million visitors who come to the region specifically because of the national park, gross sales amount to €431 million, which is equivalent to about 14,000 jobs. The current discussion about the establishment of further national parks also reflects the hopes of local/regional politicians for further positive economic effects. Tourism depends on intact nature and landscape. Loss of biodiversity can therefore have adverse impacts on tourism. The German government's current Tourism Policy Guidelines also stress the importance of sustainable tourism and the positioning of Germany as a holiday country with high environmental standards and great recreational value. In its National Biodiversity Strategy, Germany is therefore placing emphasis on developing sustainable tourism and implementing the CBD guidelines on "Biodiversity and Tourism".

### 3.4 Health aspects

Relaxation in intact and restful natural surroundings is an important prerequisite for people's physical and mental health (Claßen et al. 2005). Empirical studies confirm the positive health-friendly effects of natural and harmonious unfragmented landscapes with little traffic (such as the central upland and coastal regions), especially when it comes to reducing stress and improving concentration. Loss or impairment of such landscapes restricts not only sporting activities, but also the potential for promoting health and preventive health care.

On an international comparison, Germany is the fourth-largest country for imports and exports of medicinal plants. Some 50% of the medicines in common use today are based on medicinal plants or their constituents (Proksch 2004). Animal organisms are also used for obtaining medicines. Loss of or changes in biodiversity could result in the necessary resources no longer being available in adequate quantities, giving rise to economic and health losses.

Adverse health and economic impacts may also result from the spread of invasive species. The North American mugwort ambrosia (*Ambrosia artemisiifolia*), which appeared in Germany a few years ago and is continuing to spread, can cause serious pollen allergies. The giant cow parsnip (*Heracleum mantegazzianum*) also produces severe skin irritation in humans. In future these species could give rise to substantial expense in the healthcare sector (BfN 2008).

## **Chapter II – Present state of national biodiversity strategies and action plans**

### **1. The National Strategy on Biological Diversity**

#### **1.1 Introduction**

On 7 November 2007, the German government adopted the National Strategy on Biological Diversity. Thus Germany now has, for the first time, an ambitious and comprehensive strategy for implementing the UN Convention on Biological Diversity (Art. 6 of the CDB).

The National Strategy on Biological Diversity contains some 330 concrete targets and about 430 measures which call upon the various governmental and non-governmental actors to take action. Many targets are quantified, and roughly one third of all targets are associated with a specific year (starting immediately and to be achieved by 2020, or in one case by 2050). The strategy as a whole pays equal attention to environmental, economic and social aspects in the spirit of the guiding principle of sustainability. The strategy is embedded in the National Sustainability Strategy and also linked to a number of relevant German sector strategies.

The national strategy is geared to implementing the Convention on Biological Diversity at national level. It also includes Germany's contribution to the worldwide conservation and sustainable use of biological diversity. In order to link the national strategy with the objectives and indicators agreed in the Convention on Biological Diversity, an Appendix indicates how the individual sections of the present National Strategy on Biological Diversity relate to the decisions of the various Conferences of the Parties to the Convention on Biological Diversity and the contents of the EU Biodiversity Strategy and the EU Action Plans.

The strategy addresses not only government institutions at federal, Land and local level as actors, but also all social players. The strategy is designed to mobilise and pool all social forces with the aim of significantly minimising, and eventually halting altogether, the threat to biological diversity in Germany, the ultimate aim being to reverse the trend in favour of an increase in biological diversity, including its typical regional peculiarities. A further aim is that Germany should take greater responsibility for global sustainable development.

Sector-specific contents and targets are set out in the Agrobiodiversity Strategy drawn up for the agricultural, forestry, fisheries and food sector in 2007 by the Federal Ministry of Food, Agriculture and Consumer Protection (*BMELV*) (conserve agrobiodiversity, tap and make sustainable use of the potential of the agricultural, forestry and food sector).

#### **1.2 Structure of the strategy**

The contents of the National Strategy on Biodiversity are organised as follows:

- The chapter on “The current situation” outlines the reasons for conserving biological diversity from an ecological, economic, social, cultural and ethical viewpoint, highlights the global and national dimensions of the threat to biological diversity, and describes the efforts undertaken to date and the areas where further action is needed.

- The chapter on “Concrete vision” formulates and elucidates the Government’s visions, quality targets and action targets for the future on the major national biodiversity-relevant topics. Some of these objectives still need to be reviewed.
- The chapter on “Action areas” translates the action targets into concrete measures and allocates these to the various government and social players.
- The chapter on “Innovation and employment” outlines the potential afforded by biological diversity in terms of economic development, innovation and jobs.
- The chapter on “Eradicating poverty and promoting justice” explains the correlations between biological diversity and implementation of the Millennium Development Goals.
- The chapter on “Implementation of the Millennium Ecosystem Assessment in Germany” outlines implementation of the Millennium Ecosystem Assessment for Germany as commissioned by the United Nations.
- The chapter on “Flagship projects” provides details of concrete projects which exemplify the conservation of biological diversity while giving equal consideration to ecological, economic and social aspects.
- The chapter on “Reporting, indicators and monitoring” outlines future regular reporting on target achievement, including the strategy’s set of indicators.

### **1.3 Concrete vision**

Each individual section with targets starts with a concrete vision. The following are examples of visions with an overarching character:

- In Germany has a typical diversity of landscapes, habitats and biocenoses, both natural and influenced by human activities, which are highly valued by the population. The species associated with these habitats exist in populations that are capable of survival and long-term adaptation.
- Economic activities in Germany are commensurate with the conservation of biological diversity. The costs and benefits of their use are allocated appropriately.
- Air, water and soil are of high quality. They guarantee a functioning natural regime and a typical regional expression of biological diversity, and an important precondition for human health.

### **1.4 Measures**

The specific measures are defined in the following fields of action:

- Interlinked biotopes and networks of protected areas
- Species conservation and genetic diversity
- Biosafety and preventing the adulteration of fauna and flora
- Water protection and flood prevention
- Access to genetic resources and equitable sharing of benefits
- Agriculture and silviculture

- Hunting and fishing
- Mining of raw materials and energy generation
- Human settlements and transport
- Acidification and eutrophication
- Biodiversity and climate change
- Rural regions and regional development
- Tourism and nature-based recreation
- Education and information
- Research and technology transfer
- Development cooperation and combating poverty

### **1.5 Indicators**

The strategy's set of indicators adopts the "DPSIR" approach (Driving forces, Pressure, State, Impact, Response). Indicators which show the status of biological diversity and its components ("state indicators") are pivotal to an assessment of the National Biodiversity Strategy. Indicators which represent the factors influencing biological diversity are already available in considerable numbers, and are likewise used for assessment purposes ("pressure indicators"). "Impact indicators" represent changes in biological diversity which have already occurred and which are ascribed to specific factors. "Response indicators" measure the means by and extent to which politics and society respond to changes in biological diversity.

When compiling the set of indicators, consideration was given to synergy effects and compatibility with existing indicator systems and indicator developments. The indicators in the national strategy on biological diversity were selected against the background of existing indicator development (at international, national and Land level) The indicators are linked to the visions and action areas of the strategy, with due regard for international specifications.

On the lines of the method used to develop indicators for the CBD, indicators have been selected which are at different stages in their development – indicators which already exist or will be available shortly, and also indicators still to be developed which are intended to bring about substantial improvements in overall information about the success of the strategy on biological diversity.

The set of indicators for the strategy comprises the following indicators:

Indicator	DPSIR statement	Availability at national level in Germany
Sustainability indicator for species diversity	state	available
Endangered species	impact	2010
Conservation status of Habitats Directive habitat types and species	state	2010
Number of non-native fauna and flora species in Germany	pressure	from 2010
Size of strictly protected areas	response	available
Natura 2000 area designations	response	available
Land take: Increase in the amount of land used for human settlements and transport infrastructure	pressure	available
Landscape fragmentation	pressure	available
Urban sprawl	pressure	from 2010
Agro-environmental subsidy (subsidised area)	response	available
Organic farmland as a proportion of total agricultural land	response	available
Proportion of certified forest land in Germany	response	available
Nitrogen surplus (overall balance sheet)	pressure	available
Genetic engineering in agriculture	pressure/ response	from 2010
Water quality – Proportion of water bodies with at least water quality grade II	impact	available
Marine Trophic Index	pressure	from 2010
Populations of selected commercial marine species	impact	from 2010
Flowering time of a cultivated apple variety	impact	available
Significance of environmental policy goals and tasks	response	from 2010

In view of climate change and the natural propagation dynamics of every species, the indicator “Number of non-native fauna and flora species in Germany” must not be interpreted solely as a burden (pressure) on biodiversity.

## **2. Implementation of strategy**

### **2.1 Instruments**

The German biodiversity strategy seeks to make the “soft” instrument of a strategy as binding as possible. This is done, for example, by quantifying the targets and specifying target years, thereby permitting ongoing monitoring of target achievement, and by imposing regular reporting obligations. The German government has undertaken to present a comprehensive report once during every term of parliament which will make it clear what progress has been made towards achieving the targets and where there is a need for greater efforts. The German government will publish an agreed NBS Indicator Trend Report in time for the Tenth Conference of the Parties to the CBD.

In December 2007, the BMU launched a multi-year, dialogue-oriented process for implementing the National Strategy on Biological Diversity. The kick-off event for the implementation process was the First National Forum on Biological Diversity in Berlin in December 2007. Also held at the same time was an expert congress which collected suggestions and wishes for the implementation process. The Second National Forum on Biological Diversity in Frankfurt in January 2009 had the motto “From Knowledge to Action”.

Following seven regional forums on various key topics of the strategy which were held in various parts of Germany in the first half of 2008, the implementation process was continued on an actor-oriented basis. Since the second half of 2008, dialogue forums have been held for specific groups of actors. This series is continuing. Actor groups currently selected are: nature conservation, rural regions, science and research, social consciousness. The aim of the dialogue forums is to hold discussions with specific actor groups about ways and means of implementing targets and measures of the national biodiversity strategy, to facilitate the establishment of alliances, and to agree concrete steps for implementing targets and measures.

To coordinate implementation within the German government and involve in the implementation of the strategy the various fields of government activity that have an impact on the development of biological diversity, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety set up an interministerial working group on “Implementing the National Strategy on Biological Diversity”. Cooperation with the Länder, which in Germany are largely responsible for policy implementation and law enforcement in the field, has been institutionalised; this has still to be done for cooperation with local authorities.

Within the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, which is responsible for managing implementation at federal government level, a cross-departmental steering group with thematic working groups has been set up.

### **2.2 Selected activities of importance for the implementation of the strategy**

Since the strategy was not adopted until the end of 2007, it is not yet possible to evaluate its implementation. As already mentioned, the German government will submit to the Tenth Conference of the Parties to the CBD an indicator trend report on the implementation of the strategy. In the reporting period following the presentation of the Third National Report, Germany has – independently of the objectives stated in the strategy – undertaken ambitious national and international activities to implement the Convention on Biological Diversity and

has made progress. The main activities are described below, insofar as they are relevant to biodiversity policy. Chapter 3 contains an overview of the main activities aimed at including biodiversity aspects in other sectors.

### **2.2.1 National**

#### ➤ *National Natural Heritage*

In the coalition agreement for the 16th term of the German Bundestag, the government parties agreed that federally owned nature conservation areas of a representative character for the state as a whole would be transferred free of charge to a federal foundation or assigned to the Länder, associations and other foundations. A total of 125,000 hectares is earmarked for this purpose. The federal land intended for such transfers is situated in particular in national parks, biosphere reserves, federal large-scale nature conservation projects, Natura 2000 areas, or in the “Green Strip”, the strip along the former border between the two Germanies, which is of importance from a nature conservation point of view. The nature conservation requirements for land belonging to the National Natural Heritage are particularly high.

The future recipients of the land have been identified or decided for the first 100,000 hectares. A further 25,000 ha is reserved for land that ceases to be used in future. For about 57,000 ha, the conditions for long-term safeguarding of the National Natural Heritage have already been contractually agreed; the first parcels of land have been handed over to their new owners.

#### ➤ *Natura 2000*

The “Natura 2000” network of protected areas is currently being built up throughout the EU to implement the Habitats Directive and the Birds Directive. It is designed to conserve and develop the habitats and species which are particularly worth protecting from a Community point of view. Following a lengthy registration procedure, the necessary Habitats Directive registrations in Germany are now complete. They comprise 9.3% of the area of Germany. Considerable progress has also been made with the European Birds Directive areas; registrations of such areas are up from 7.2% to 11.2% of the country’s area. With the completion of the prolonged Habitats Directive registration process, the network of German Habitats Directive areas has now been established, creating the conditions necessary for breathing local life into Natura 2000 by means of good area management.

In Germany’s exclusive economic zone (EEZ: 12-200 nautical miles), the German government notified the EU Commission of ten marine protection areas in the North and Baltic Sea as long ago as May 2004. Together these amount to 31% of the EEZ. Germany was thus the first country to designate a complete network of offshore protected areas. Protected area ordinances are currently in preparation for the eight Habitats Directive areas. In 2005, the two Birds Directive areas were declared by ordinance to be nature conservation areas.

#### ➤ *Major protected areas in Germany*

In Germany there are currently 14 national parks, 16 biosphere reserves (15 are recognised by UNESCO, and an application has been made for the remaining one) and about 100 nature parks, which together account for 25% of the area of Germany. They are grouped under the collective term “major protected areas”. In 2006 the joint umbrella brand “National Natural



Heritage” was created with assistance from the BMU, the German Environment Foundation (*Deutschen Bundesstiftung Umwelt – DBU*) and a number of Länder. This was intended to raise public awareness of these protected areas. It is also intended to draw attention to the potential for regional added value and to make for greater identification of the local population with their parks.

The “Protected Areas” work programme of the Convention on Biological Diversity, adopted at the Seventh Conference of the Parties in Kuala Lumpur in 2004, calls upon the parties to create and maintain at national level a system of protected areas that is not only ecologically representative, but also effectively managed. In the form of the criteria for national parks drawn up with assistance from the Federal Environment Ministry (*BMU*), criteria and evaluation procedures have existed in Germany since 2008 for all major protected areas, in other words for national parks, biosphere reserves and nature parks.

To date, trial evaluations have been made of the national parks “Hamburg Wadden Sea”, “Müritz”, “Bavarian Forest” and “Hainich”. It is planned to evaluate all national parks by 2010. Of the 15 UNESCO biosphere reserves, all areas except three have undergone initial evaluation. The cross-border review of the biosphere reserve “Pfälzerwald/North Vosges”, a world first, was continued in 2009.

➤ *Specific species protection measures*

One of the main ways of conserving species diversity and genetic diversity of wild fauna and flora varieties is by protecting their habitats. However, specific measures to conserve and reintroduce species also play an important role. Species protection in conjunction with protection of habitats has resulted in some spectacular successes in recent years. Wolves from Poland have become established in the east of Germany since 1998: there are currently five packs in Saxony and a pair of wolves in Brandenburg. More than 80 wolf cubs have been born since 2000. Individual sightings in Bavaria, Hesse, Mecklenburg-Western Pomerania, Lower Saxony and Schleswig-Holstein point to a further spread. To support the natural reintroduction of wolves, the Federal Environment Ministry has been assisting a number of projects for several years, to some extent jointly with the Free State of Saxony. They are intended to provide further information about the living habits of this returning species and to foster public acceptance. Another research project is drawing up basic principles for management plans for wolves and other large mammals in Germany.

Initial successes have also been recorded with efforts to reintroduce the sturgeon, which has been considered extinct in Germany since 1969. A major precondition for successful reintroduction is the restoration and improvement of the natural habitats, e.g. by means of integrated water catchment area management with the aim of restoring and improving structural diversity. Re-breeding and appropriate cooperation with French researchers are also helping to conserve what is one of the most important migratory fish species in Germany from a historical point of view. Following initial difficulties, artificial reproduction of the Atlantic Sturgeon for the Baltic Sea region is now running successfully. After a preparatory period of more than ten years, over 5000 re-bred young sturgeon, marked and in some cases fitted with transmitters, have been released into the Oder since June 2007. First trial stocking measures with the European Sturgeon were carried out in the Elbe in September 2008 and in the Oste and Stör in April and May 2009. They are to be intensified in the years ahead.

➤ *Federal assistance for nature conservation*

With “chance.natur”, the federal assistance programme for establishing and safeguarding natural and landscape areas that are in need of protection and are of representative importance for the nation as a whole, the German government is making an important contribution to safeguarding our natural heritage in Germany. Since 2005 it has made €53.87 million available for new and existing major nature conservation projects.

In September 2007, as part of this federal assistance programme, the Federal Environment Ministry and the Federal Ministry of Food and Agriculture jointly started the competition “idee.natur” on the key topics “Forests”, “Peatlands” and “Urban/industrial landscapes”. The idea was to find forward-looking concepts for exemplary interlinking of ambitious nature conservation objectives and rural development, and new approaches for major nature conservation projects in urban/industrial areas. The ten prize-winners of the first stage of the competition were called upon to develop their outline ideas into viable concepts. In May 2009 the jury selected five projects for which implementation can start in mid 2009 with financial assistance from the federal government.

➤ *Agro-environmental measures*

In agro-environmental measures, farmers give a voluntary undertaking to comply with specified particularly green management methods on their farms for a period which is usually five years. Agro-environmental measures are not only an obligatory component of rural development programmes throughout Europe, but also an important instrument for achieving environmental objectives in the Common Agricultural Policy. As well as helping to maintain and improve biological diversity, these measures also have the purpose of mitigating climate change, improving soil structure, reducing fertiliser and pesticide inputs – especially near sensitive waters.

In 2007 some €603,022 was spent on assistance for around 200,000 agreements with a total area of 4,763 million hectares of farmland.

➤ *Revision of nature conservation and landscape maintenance legislation*

As a result of a constitutional reform in Germany in 2006, legislative competence for nature conservation was reorganised. This makes it possible to establish a single nationwide law of nature conservation with appropriate comprehensive provisions. The guiding principle of the revised act, which enters into force on 1.3.2010, is the existing level of protection; in addition, certain aspects are modernised. The general provisions of the new Federal Nature Protection Act make the objectives of nature conservation and landscape maintenance clearer than in the past, and subdivide them as follows: (1) conserving biological diversity, (2) safeguarding the performance and functional capacity of the natural regime, including the regenerative capacity and sustainable usability of natural assets, and (3) safeguarding the diversity, characteristic features, beauty and recreational value of nature and landscape.

➤ *Implementation of the Water Framework Directive (WFD)*

The European Community’s Water Framework Directive entered into force at the end of 2000. This directive laid the foundations for integrated water resources management at the level of river basin districts, which thus applies to water bodies extending beyond national and Land boundaries. The aim of the Water Framework Directive is to achieve good status for all surface waters and groundwater in the EU by 2015; justified extensions and exceptions are possible. Surface water quality assessment by the directive is based not only on the chemical

status, but also on the ecological function of the water bodies as a habitat for different plants and animals. This means it also includes nature conservation objectives.

The implementation of the Water Framework Directive is now entering an important phase: national programmes of measures and national/international management plans for ten river basin districts are to be drawn up and agreed by the end of 2009. These instruments lay down the main management objectives and the measures planned for their implementation. Work on compiling the programme of measures is currently in progress in the German Länder.

➤ *National marine strategy*

On 1 October 2008 the German government adopted a National Strategy for Sustainable Use and Protection of the Seas – “National Marine Strategy” for short. The National Marine Strategy is an action concept developed jointly by all federal ministries with the aim of achieving a better balance of use and protection interests, and better dovetailing of existing responsibilities and competences. The National Marine Strategy is primarily concerned with the German waters of the North Sea and Baltic Sea. However, marine policy is always national, regional and international policy at the same time. The current concepts of the ecosystem approach and the integration of marine conservation interests in other policy areas are important elements of the National Marine Strategy. The strategy focuses on special competencies, defines national policy objectives, indicates ways of achieving them, and sets out concrete action proposals with associated timelines.

It clearly demonstrates the importance of conserving biological diversity and the impacts of climate change on the seas. The more use-oriented and economic sectors such as tourism, shipping, agriculture and fisheries are dealt with appropriately and also from an integration point of view. A separate chapter is devoted to the important subject of marine research.

➤ *Regional policy plans for the EEZ in the North Sea and Baltic Sea*

On 26 September 2009 the regional policy plan, in the form of a statutory ordinance issued by the Federal Ministry of Transport, Building and Urban Affairs, for the German exclusive economic zone in the North Sea (EEZ: sea outside the coastal zone (12 nautical miles) up to a maximum of 200 nautical miles) entered into force. This finds coordinated solutions to the increasing conflicts of use on the seas, especially the space-intensive growth of offshore wind energy generation and the protection of the marine environment, and also the traditional uses such as shipping, and lays down appropriate rules for the uses and functions of the sea, including marine environmental protection. In this context, efforts must be made to maintain, protect and promote natural functions, systems and processes, in the interests of safeguarding the natural basis for life in view of our responsibility for future generations. Disturbances and pollution of the ocean ecosystem and the related natural functions, systems and processes are to be avoided; biological diversity must be promoted and maintained.

The preparation of the regional policy plan was accompanied by a strategic environmental assessment (SEA). An environmental report was prepared which also sets out the results of the impact assessments with regard to the areas protected under the Habitats Directive and the Birds Directive. The report also lists the measures planned for monitoring the considerable impacts of the regional policy plan on the environment. These measures consist in collating and evaluating the project-specific effect monitoring carried out at project level and any accompanying research, and evaluating national and international monitoring programmes.

The regional policy plan also makes a contribution to implementing the National Strategy for Sustainable Use and Protection of the Seas (National Marine Strategy) of 1 October 2008. The German government's strategy seeks to achieve sustainable development and a better balance of use and protection interests, and identifies regional policy in the coastal and marine sector as an important instrument for finding coordinated solutions to increasing conflicts.

A similar regional policy plan for the EEZ in the Baltic Sea is to enter into force in December 2009.

➤ *Integrated coastal zone management*

On 22 March 2006 the Cabinet adopted a National Strategy for Integrated Coastal Zone Management (ICZM). ICZM is intended to help develop and maintain the coastal zone as an ecologically intact and economically prosperous living space for man. Implementation of the ICZM strategy has begun, and the process of dialogue and cooperation is continuing. A model best-practice project for spatial development is to put forward practicable strategies, instruments and measures for economical and efficient use of space in the German coastal zone. The project comprises case studies on coastal defence and use of space, tourism concepts and projects, port space management, and wind energy use through modernisation of existing plants ("repowering").

➤ *Climate change and nature conservation*

Climate change influences the distribution of species, their genetic resources and the structure of ecosystems. On the other hand, ecosystems also influence the climate by acting as greenhouse gas sources or sinks. In order to limit climate change, and hence its impacts, Germany and the EU are pursuing the long-term objective of restricting global warming to a maximum of 2°C above pre-industrial levels. Even with a limited temperature rise of this magnitude, the environmental, social and economic consequences of the climate change that is already taking place will make their effects felt. It is however assumed that some of these impacts can be mitigated by appropriate and timely adaptation measures. There is thus a need to devise adaptation strategies for the non-avoidable impacts of climate change.

On 17 December 2008 the German government adopted a strategy for adaptation to climate change (*Deutsche Anpassungsstrategie – DAS*). The strategy creates a nationwide action framework for measures to adapt to climate change in Germany. It summarises the present state of knowledge with regard to expected climate change and the associated potential impacts. It outlines possible climate impacts and action options for 15 fields of action and selected natural spaces and regions. One of the action fields is "biological diversity". On the whole, the strategy calls for an integrated approach which prevents conflicts of goals and space use and makes use of synergies with other policy objectives. An "adaptation action plan" is to be drawn up by early 2011 in cooperation with the Länder and other actors.

Many nature conservation measures help to maintain and improve the capacity of ecosystems to adapt to climate change. In particular, these include the establishment of effective biotope networks to help species and populations to adapt to shifts of area, the adaptation of protected area management to the impacts of climate change, and targeted measures for particularly affected species and biotopes, e.g. for wetland regeneration. The scientific basis for measures

of this kind is currently being compiled in a research initiative comprising more than 20 individual projects on “Biodiversity and Climate Change”.

➤ *Nature conservation associations*

Modern nature conservation also needs a readiness on the part of the individual to behave in an environmentally aware manner and make an active contribution to nature conservation. This is an area where nature conservation associations perform important multiplier functions. They enjoy widespread public trust and do much to ensure that more and more people are made aware of nature conservation issues. With their valuable knowledge they make an indispensable contribution to shaping nature conservation policy in Germany. According to a survey by the Federal Agency for Nature Conservation, the nature conservation associations at federal level recognised under the Federal Nature Conservation Act had a total of around 4.6 million members at the end of 2006. The German government considers it an important task to support the honorary activities of the nature conservation associations. For this reason the Federal Environment Ministry provides assistance totalling some €4.5 million a year for projects run by the environmental and nature conservation associations.

### **2.2.2 International**

➤ *Study of the economic importance of global loss of biodiversity*

Nature provides mankind with numerous goods and services that form the foundations for human well-being and economic activity, e.g. climate regulation, soil formation, fertilisation, food and water supplies. These “services” of biological diversity have a high economic value. To determine the importance of biodiversity and its services for the global economy, and thereby create the basis for more effective protection of biodiversity, the German government and the European Commission have together initiated the study “The Economics of Ecosystems and Biodiversity – TEEB”. The G8 states and the five biggest emerging economies decided on this study at the meeting of environment ministers in Potsdam in March 2007. Its objectives are to:

- Analyse the economic value of ecosystems and biodiversity.
- Create a range of instruments that put actors (political decision makers, local authorities, private sector, general public) in a position to recognise the value of nature and its services and to take account of their true value in their individual decisions.
- Bring about a change of awareness among decision makers in politics, industry and society as a basis for more responsible action at all levels of society.

The first results of the study indicate that the economic value of ecosystem services for human society is far greater than economists and scientists had assumed. A first interim report was presented at the Ninth Conference of the Parties to the Convention on Biological Diversity (CBD) in Bonn. Many parties to the CBD stressed the great need for concrete information about the economic cost of biodiversity loss. The second phase of the study will take a closer look at how economic models and economic policy can be optimised to ensure the conservation of biological diversity and of natural services. The final report will probably be presented in Japan in 2010, at the end of the German presidency of the CBD at the Tenth Conference of the Parties to the CBD.

➤ *“Business and Biodiversity” initiative*

It is the German government’s aim to get business more closely involved in the conservation and sustainable use of biological diversity. In 2007 the German government launched the initiative “Business and Biodiversity”, and in 2008 it officially presented it at the Ninth Conference of the Parties to the CBD. Businesses which join the initiative sign a “Leadership Declaration”. In doing so, they undertake to embed biodiversity conservation in their business policy in the future and, among other things, to lay down measurable targets for improved protection and sustainable use of biological diversity, which are reviewed and updated every two to three years. Differences between businesses are catered for by the fact that each business can decide its own goals and steps and can thus individualise the leadership declaration. All activities pursued and successes achieved in the field of biological diversity are to be published in an annual, environmental or sustainability report.

To date, 42 businesses have joined this international initiative, including companies from Germany, the EU, South Africa, Brazil (organiser of the Eighth Conference of the Parties to the CBD) and Japan (organiser of the Tenth Conference of the Parties to the CBD). The range of businesses extends from tourism, the timber and construction industries to financial services, the food industry and natural cosmetics. The Federal Environment Ministry will continue to develop this initiative during its CBD presidency and will make every effort to place it on a permanent footing by the next Conference of the Parties in Japan in 2010.

➤ *Nomination of world natural heritage sites*

In recent years the UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage has become increasingly important for nature conservation in Germany. On 30 January 2008, Germany and the Netherlands submitted their joint nomination to UNESCO for a world natural heritage site “Wadden Sea”. The nomination documents the unique character of the geomorphological, ecological and biological processes and the biodiversity of the Wadden Sea. On 26 June 2009 the General Assembly of UNESCO approved the application in its entirety. This gave a boost to the regional and supra-regional regard for the special character of the Wadden Sea. In Germany, the world natural heritage area comprises the national parks “Lower Saxony Wadden Sea” and “Schleswig-Holstein Wadden Sea”. A supplementary application in respect of the areas in Hamburg and Denmark, which account for only a small part of the Wadden Sea region, can be submitted to UNESCO in due course.

The best beech forests in Germany are also to become UNESCO world natural heritage sites. This was officially announced to the World Heritage Centre on 1 February 2007. Four Länder – Brandenburg, Hesse, Mecklenburg-Western Pomerania and Thuringia – are working hard to submit a nomination to UNESCO for five sites forming a German beech forest cluster as an extension to the “Carpathian Primeval Beech Forest” site already registered in Slovakia and the Ukraine. This concerns selected parts of the protected areas: “Jasmund National Park” and “Müritz National Park”, “Grumsin” in the UNESCO biosphere reserve “Schorfheide-Chorin”, “Kellerwald-Ederssee National Park” and “Hainich National Park”. The proposed beech forests represent the most valuable remains of Germany’s extensive near-natural beech forests. The nomination is to be officially submitted to UNESCO at the beginning of 2010.

➤ *Other international activities*

Other international activities are mentioned in Chapter III 3 in connection with the inclusion of biodiversity in other convention processes.

### **2.2.3 Improving the data situation**

Data on the condition of and changes in nature and landscape is an indispensable basis for a sound nature conservation policy. Moreover, it is also needed to comply with European and international reporting requirements.

The Länder responsible for monitoring have yet to develop a single nationwide system for regular recording of biological diversity. The special importance of the 800 or so permanent soil observation areas in Germany that are run by the Länder has to be stressed here. Data have however been compiled for certain European and international reporting requirements on the basis of a joint monitoring concept. One item of special importance is the monitoring report under the Habitats Directive. In 2007 a first official report on the state of conservation of the 91 German Habitats Directive habitat types and 230 Habitats Directive species was submitted to the European Commission. The results show that the status of roughly one quarter of the species and habitat types covered by the Habitats Directive is already favourable. Thus the report provides impressive confirmation of first successes in the implementation of European nature conservation policy. However, many habitats and species are still in a poor state.

Since 2008 the federal and Land authorities have been providing financial assistance for coordination of the honorary nationwide registration of breeding birds in normal countryside and protected areas, and of water birds. A nature conservation oriented monitoring system for the coastal region and the EEZ is currently under construction.

For geoinformation (data with a geographical frame of reference), work on establishing the Geo Data Infrastructure Germany (GDI-DE) is going ahead as a matter of urgency. Here portals such as GeoPortal.Bund provide facilities for searching for geoinformation and combining such information in cartographic representations from various sources and on various subjects. The draft Geodata Access Act (*Geodatenzugangsgesetz – GeoZG*) approved by the German government on 30 July 2008 promotes the further expansion of the GDI-DE. As part of the national implementation of the INSPIRE Directive (2007/2/EC), the act obliges the federal authorities to make geodata on environmental protection and nature conservation publicly available via GDI-DE in accordance with uniform European rules.

### **2.2.4 Research**

A long-term research strategy supports the German government's national and international environmental protection and nature conservation policy. Here the original fields of activity for the protection of nature and landscape are of special importance. In particular, examples include research-based further development of the Convention on Biological Diversity, implementation of the National Strategy on Biological Diversity, implementation of the Ministry of Agriculture's sectoral strategy on agro-biodiversity, protection of the National Natural Heritage, ongoing development of the nationwide system of protected areas, and expansion of renewable energy in keeping with nature conservation principles, with a special focus on use of biomass. Research funds for nature conservation in the Federal Environment

Ministry's environmental research plan rose from €6.3 million in 2005 to €8.3 million in 2008.

In addition to the environmental research plan as a central research instrument of the Federal Environment Ministry, importance is also attached to obtaining practical findings from assistance programmes, such as findings on the development and testing of model methods and processes (trial and development concepts – T+D projects).

Every year, the Federal Ministry of Education and Research (BMBF) invests some €30 million in biosphere and biodiversity research. Conservation and above all the sustainable use of biodiversity are focal points of existing and future BMBF programmes. They are concerned, from both a national and – explicitly – an international point of view, with research into strategies and concepts that can serve as a basis for (economic) use of biodiversity in a way that is sustainable and compatible with ecosystems. As well as programmes in which the focus is on biodiversity research (e.g. BIOLOG, BIOTA, Bioteam), this aspects also plays a role in the field of water (GLOWA), climate (Klimzug) and land-use research (Landmanagement (from November 2008)).

Another contribution is the federal organic farming programme (BÖL), which seeks to promote organic farming in Germany. The programme was launched in 2002 to improve the framework conditions for organic farming. It is intended to supplement existing assistance measures by contributing to sustainable growth based on the medium term on balanced expansion of supply and demand.

Based on identifying problems and development potential, the assistance measures in the programme are applied wherever it is possible to promote growth efficiently by filling gaps in funding. They include various measures with this objective for all parts of the production chain: from agricultural production, through collection and processing, trade and marketing, right through to the consumer. Since the start of the BÖL programme, more than 30 measures have been designed and implemented and more than 550 research projects have received support.

The following in particular are of special importance:

- Measures for supporting
  - = practice-oriented research and development projects and projects for improving knowledge transfer,
  - = projects for expanding research coordination and cooperation with regard to organic farming in Europe;
- Activities for expanding consultation services for agricultural operations and for improving and strengthening market transparency and communication and inter-farm cooperation.

Development of technology based on natural examples (bionics) is a growth market of the future. Taking advantage of such opportunities is primarily a task for German businesses. The German government provides support by improving the framework conditions and funding research and development.



For this reason the Federal Ministry of Education and Research has put forward a funding concept for bionics which is designed to mobilise the growth forces in science and industry to develop new bionic approaches in a competitive environment. For example, the bionic network BIONICS has been established, and research approaches have been promoted under the ideas competition “BIONICS – Innovations from Nature”. The bionic network BIONICS is intended to foster interdisciplinary networking between business and public-sector research establishments. The ideas competition “BIONICS – Innovations from Nature” is intended to provide a framework for private-sector businesses, universities and research establishments to formulate new approaches and test them in feasibility studies.

The topics of biological diversity and nature conservation are also anchored in the research plan of the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV). In the research into sustainable agriculture, forestry, fisheries and food production that has been initiated under the ministry’s research plan, environmental protection and nature conservation objectives and the maintenance and sustainable use of biological diversity currently play an important role in more than 100 projects.

The projects are being pursued as part of the institutionally funded departmental research carried on by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), in particular at the Johann Heinrich von Thünen Institute (Federal Research Institute for Rural Districts, Forests and Fisheries) (vTI), and the Julius Kühn Institute (Federal Research Institute for Cultivated Plants) (JKI). In this context, research is conducted into biological diversity, especially in the fields of fisheries, forestry, agriculture and breeding/resistance. In 2008 an Institute for Biodiversity was established at the vTI. This also performs coordination functions for this cross-sectional theme.

Applied research into the impacts of road construction on biological diversity and into the reduction of encroachments is being carried out as part of the Transport Ministry’s overall research programme. Current research fields include studies of the effectiveness of road-crossing facilities for animals and of the networking of roadside habitats, or studies of the impacts of nitrogen inputs into sensitive biotopes.

### **2.2.5 Education and communication**

Education and communication are an important field of activity of the National Strategy on Biodiversity, and also of the sectoral strategy on agro-biodiversity. The main objective is continuing to develop target group specific educational offerings relating to sustainable development and fostering awareness of the need for conservation and sustainable use of biological diversity, both in our own country and as a global task. The goals and measures formulated are to be implemented at all levels in a joint effort by governmental and non-governmental actors in schools and non-formal places of education.

Education about nature and the environment is an integral part of education for sustainable development. In the UN Decade “Education for Sustainable Development” from 2005 to 2014, the global community has created an international instrument for gearing educational activities to the needs of sustainable development. For this purpose the German government has set up a German National Committee on “Education for Sustainable Development”.

The Federal Environment Ministry and the Federal Agency for Nature Conservation (BfN) are also engaged in attention-getting international projects concerned with implementing the “CBD Global Education Initiative – CEPA” (CBD – Convention on Biological Diversity; CEPA – Communication, Education, Public Awareness) in Germany and elsewhere. Examples include the Internet-based projects “Biodiversity around my School” (2007), “20+10 Schools & Trees for Biodiversity” (2007) and “Surf the Global Grid” (2008) as part of the “Nature Detective”, the BfN’s multimedia project for children and juveniles. Also in the context of the CEPA initiative, the Federal Ministry for Economic Cooperation and Development (BMZ) is supporting a number of communication activities in Germany and in partner countries where special attention is focused on the links between biodiversity, development and poverty alleviation, among other things with theme exhibitions, brochures for schoolchildren, poster series on biodiversity and millennium development goals (MDGs) and international (media) action days. Furthermore, the ministry is also supporting the development of communication strategies for the third goal of the CBD, which is important for development policy: access to genetic resources and benefit sharing, ABS).

In the adult education field, international experts are being trained in the goals of the CBD and sustainable development as part of a capacity development programme, especially at the International Nature Conservation Academy (INA Vilm) of the BfN.

### **3 Importance of the activities for the trends described in Chapter I**

Nature conservation and the maintenance and sustainable use of biological diversity have been important objectives of German policy for many years now. The measures taken in this connection have resulted in the positive developments described in Chapter 1. It is not yet possible to assess the impacts of some of the measures taken since the submission of the Third National Report, as the time is too short for their effects to make themselves felt. In spite of the successes and in spite of substantial efforts by all levels of government, associations and other private-sector actors, the trends described in Chapter 1 show that although progress has been made, there is still a considerable need for action.

The National Strategy on Biological Diversity puts together the necessary goals and measures for combating the threats to biological diversity. This applies not only to goals and measures in the field of biodiversity policy, but also to goals and measures in other policy sectors of relevance to biological diversity. Obstacles to implementing the strategy arise especially from the fact that Germany is an industrial country with particularly high population density, where there is great competition between claims on space, and the interests of the public good “biological diversity” usually have to be reconciled with a wide range of economic interests. It is therefore a matter of central importance to convince all actors in society of the need to implement the National Strategy on Biological Diversity, and at the same time to demonstrate the economic value of biological diversity and the relevant ecosystem services. The aim of rigorous and systematic implementation of the strategy is to ensure that the loss of biological diversity is first slowed down, then brought to a halt, and that biological diversity can actually gain ground again in the medium term.

#### **4 Specific information requested in resolutions of COP 8**

The following items of information are provided in implementation of the resolutions listed in Appendix 1 to the guidelines for the preparation of the Fourth National Report:

##### **4.1 Decision VIII/5 (Article 8 j)**

Since there are no indigenous populations groups in Germany, this question is not relevant to Germany.

##### **4.2 Decision VIII/21 (Genetic resources of the deep sea)**

Owing to its geographical location, Germany is not directly affected by this question.

##### **4.3 Decision VIII/22 (Marine and coastal areas – IMCAM)**

In March 2006 Germany adopted, with public involvement, a national strategy of integrated coastal management (see above, Chapter II 2.2.1)

The Wadden Sea of the North Sea coast is a marine area of outstanding ecological importance which takes in sections of the coastlines of the Netherlands, Denmark and Germany. This trilateral Wadden Sea is under the joint integrated management of the three states, which are supported by the joint Wadden Sea Secretariat in Wilhelmshaven (D) and a Wadden Sea forum. The application for inclusion of the Wadden Sea in the UNESCO world heritage list, submitted jointly by Germany and the Netherlands, was approved by the General Assembly of UNESCO in June 2009.

In the context of German development cooperation, Germany also supports projects with coastal management components, for example in Mauretania, Vietnam and the Philippines.

##### **4.4 Decision VIII/24 (Protected areas)**

Germany is the third-largest donor of the Global Environment Facility (GEF). It supports the idea that funding of protected areas should be one of the focal points in the protection of biological diversity.

However, since the goals of the CBD can only be achieved if the developing countries provide new and additional financial and technical resources, the Federal Chancellor promised at the Ninth Conference of the Parties to the Convention (Bonn, 2008) that from 2009 to 2012 Germany would make available an additional €500 million for the protection of forests and other ecosystems. From 2013 onwards, Germany will then commit €500 million a year.

At the 9th Conference of the Parties, Germany also proposed the LifeWeb initiative – an initiative for speeding up the implementation and funding of the global network of protected areas on land and sea. LifeWeb is a platform for multilateral cooperation. The aim of the platform is to establish contact between states which are willing to expand and reinforce their system of protected areas and which need international assistance to do so, and donors who are willing to provide additional resources for such efforts. The additional resources provided

by Germany are to be channelled through the LifeWeb initiative in particular. Measures outside of protected areas are also possible, provided they serve the interests of protecting forests or other ecosystems.

Furthermore, Germany also supports the protected area process by means including bilateral cooperation and financial assistance for regional processes (cf. Chapter III.4).

#### **4.5 Decision VIII/28 (Impact assessment)**

See Chapter III 2.

## **Chapter III – Sectoral and cross-sectoral integration and/or general inclusion of biodiversity aspects**

The inclusion of biodiversity aspects in other areas of environmental policy and many more policy areas is a prerequisite for their integration in society and for sustainable development. The model of sustainable development links the idea of quality of life with the call for equity and a global, cross-generation perspective. Thus the principle of sustainable development links different policy areas and makes it a guiding principle of political activity to take account of their many and various interactions.

This means that today, paying attention to ecological requirements is a necessity of economic sense, forward-looking settlement and traffic policy, or future-oriented strategies in the energy and agricultural sectors. Conversely, nature conservation and the maintenance of biological diversity have to face the challenges of economic dynamics, social demands and both national and international interests. Maintenance and sustainable use of biological diversity, economic efficiency and social responsibility need to be brought together in a manner which ensures that decisions are viable in the long term from all three points of view.

For this reason the protection of biological diversity and the national biodiversity strategy are essential building blocks of the German government's National Sustainability Strategy. The sustainability strategy also addresses important interactions between fields such as climate change, raw materials industry, land take and biodiversity and relevant interfaces of policy areas such as environmental, food, health and development policy.

### **1 Individual policy areas**

#### **1.1 Agricultural policy**

Intact nature can only be maintained and protected successfully by taking account of biodiversity aspects over the total area. More than half the area of Germany is used for agricultural purposes. Accordingly, agriculture bears a special responsibility for biological diversity.

The EU agricultural reform of 2003 took important steps to key the agricultural sector more closely to the market under the Common Agricultural Policy (first pillar of the CAP) and to tie the provision of agricultural subsidies to compliance with various standards.

These include the “basic operational management requirements”, which comprise the most important rules from a total of 18 legal acts relevant to farmers, of which five relate to compliance with environmental guidelines. Under the rules on the maintaining agricultural land in a good agricultural and ecological state and making sustainable use of it, other binding and optional standards have to be observed, e.g. in the fields of erosion control, conservation of organic material in the soil, minimum maintenance of land, and conservation of water bodies.

Germany has opted for an implementation model which places grassland and landscape elements on an equal footing with arable land as far as direct payments are concerned and thereby takes greater account of biodiversity interests. Assistance measures under the second pillar of the CAP (assistance for regional rural development) and from the joint federal/Länder task “Improving agricultural structures and coastal protection” are also important for biological diversity. These also include funding facilities for environmentally sound agriculture and the maintenance of genetic resources in the agricultural sector.

The so-called “health check”, a review of the Common Agricultural Policy of the EU in 2008, set out to review the agricultural reform of 2003 and, by strengthening regional rural policy, to put farmers in Europe in a position to get to grips with the new challenges. In addition to measures for restructuring the milk sector, these include measures in the fields of climate protection, soil, biodiversity improvement, water resources management and renewable energy sources. It was decided to step up the reallocation of agricultural funds from the first to the second pillar of the CAP. The decisions on “Cross Compliance”, which include tying direct payments to environmental requirements, make it necessary to observe other standards in the field of water conservation and also contain simplifications without any cuts in services for the environment. Moreover, the Member States will continue to have the necessary flexibility to retain meaningful arrangements.

## **1.2 Rural development policy**

Rural areas in Germany face major challenges in future, such as demographic change, globalisation of markets, climate change, threats to biological diversity. But they display marked variations in their natural and economic structure and resources. For example, there are a number of rural regions, especially in the vicinity of urban agglomerations, but also in scenically attractive surroundings far from urban centres, which are well developed economically and which with their relatively high standard of living and their considerable economic prosperity represent attractive regions for residents and industry with favourable prospects for the future. But there are also many regions which have structural problems to contend with. These include the coastal regions in particular.

Nature and landscape offer great potential for rural regions. If used appropriately, this can help to offset existing structural deficits and improve the quality of life. Examples of economic interest include the use of renewable energy from biomass, direct marketing of sustainably produced food, or nature-friendly tourism (e.g. farm holidays). Here nature can do much to foster innovations and create jobs.

Many rural regions in Germany urgently need a boost to their economic strength and the creation of new jobs. Nature and environment – given sustainable use – represent an important economic potential in rural regions. A study commissioned by the Federal Environment Ministry is currently investigating important ecological markets of the future in rural regions and their potential.

Since rural development has many facets, close cooperation between various policy areas is important. For this reason, an inter-ministerial working group on “Development of Rural Regions” submitted an action concept for the ongoing development of rural regions, which was adopted by the Cabinet on 6 May 2009. Measures were also agreed for the maintenance

and sustainable use of natural capital. For example, there are plans to develop a model project for exemplary implementation of the national biodiversity strategy. At the same time, greater attention is to be paid to social inputs in the fields of environment, nature conservation and climate in the context of the joint task of “Improving agricultural structures and coastal protection”.

### **1.3 Forestry policy**

Forests are an important retreat and refuge for many endangered and protected species, and are indispensable for maintaining biological diversity. The habitat requirements of the species must be taken into account in forestry management. The German government is therefore aiming for near-natural forest management on – as far as possible – the entire area covered by forest. It is possible to integrate numerous nature conservation goals here. At the same time, near-natural forests offer the best resistance to changes in environmental conditions, thanks to their variety and adaptability. Air pollution and climate change, and their resulting impacts, are a special challenge not only to nature conservation and species protection, but also to forestry.

To ensure long-term protection of forests against the effects of acidifying and eutrophying substance inputs, there is a need for further reductions in nitrogen emissions. There is also a need for further efforts to reduce the harmful effects of tropospheric ozone and the accumulation of heavy metal inputs. International and European instruments of air quality policy serve to protect ecosystems and hence biological diversity. The Multi-Component Protocol to the Geneva Convention on Long-Range Transboundary Air Pollution, which runs out in 2010, is currently being revised. In 2008 the European Commission was to present a proposal for extending the EU National Emission Ceilings Directive. In addition, the share of total forest accounted for by near-natural forest is to reach 5% by 2020. This is a goal of the National Strategy on Biological Diversity. The term “forests with natural forest development” still needs to be defined in more concrete terms.

Certification of sustainable forest management is playing an increasingly important role in curbing illegal tree felling and non-sustainable, destructive use practices in the Earth’s forests. Three certification systems are currently recognised in Germany. Approximately 66% of the land under forest (7.3 million ha) is certified according to PEFC criteria, 4.3% according to FSC criteria (0.48 million ha) and 0.5% according to Naturland criteria (0.05 million ha), though it should be noted that some areas are certified under more than one system. Since 2007 the German administration, in order to give a clear signal against destructive exploitation and illegal felling, has only been procuring timber products from proven legal and sustainable forest management in accordance with the rules of the Federal Government’s Joint Decree of 17 January 2007 on the Procurement of Timber Products. Proof of the required environmentally sound, socially acceptable and economically viable management of the forests is to take the form of a certificate from the PEFC (Programme for the Endorsement of Forest Certification Schemes), FSC (Forest Stewardship Council), or a comparable certificate or individual evidence in accordance with the requirements of the decree.

The rule is initially limited to four years and will then be reviewed.

For information on the provision of additional funds by Germany for protecting the forests and other ecosystems, see Chapter IV No. 4.4.

#### **1.4 Fisheries policy**

The greatest burden on marine ecosystems – apart from climate change – continues to be due to fishing. The great pressure created by fishing has worldwide impacts even on those habitats and species which are not among the target species of the relevant fishing operations. Some of the fishing methods practised in drag-net fishing can present a threat to sensitive ecosystems in the German North Sea and Baltic Sea.

Fishing with unselective and destructive catching methods is also partly responsible worldwide for the decline in certain species and populations of bony fish, sharks and rays, seabirds, marine mammals, and bottom-dwelling animal and plant species and their habitats.

In the interests of a sustainable fishing industry that is environmentally sound and nature-friendly, the German government advocates that worldwide fish stocks be used on a sustainable basis and be preserved for future generations. An important aspect here is the protection of sensitive species and habitats from destructive fishing practices.

The introduction of multi-year management and restocking plans, the control of illegal fishing, and more effective controls and measures to reduce by-catches and discards are all central control instruments for sustainable management of fish stocks under the Common Fisheries Policy (CFP) of the European Community. Eco-certification of fishing and fishery products also helps to achieve these goals. For example, the Marine Stewardship Council (MSC), an independent non-profit organisation, awards eco-labels to fishing operations which are shown to have only slight impacts on the marine environment, are responsibly run and do not contribute to the problem of overfishing.

The designation of marine protected areas on nature conservation grounds is another suitable instrument for protecting sensitive ecosystems (e.g. reefs and sandbanks) and species from the destructive effects of fishing. Given appropriate management, such protected areas may also have favourable effects on the population situation of commercial fish species.

#### **1.5 Settlement and traffic policy**

In the interests of sustainable development, consideration of the many different claims to use of the land must be as balanced as possible. Economical, nature-friendly land use should be a main guiding principle here. In its national sustainability strategy, the German government set itself the target of reducing land take for new settlement and traffic areas to a maximum of 30 ha per day by 2020. To minimise land take for new areas, it is important to make use of all opportunities for converting and re-using waste land, mobilising empty sites, and increasing the density of existing areas.

Spaces with low urban sprawl, low fragmentation and low noise are very difficult to restore once they are lost. The German government therefore advocates restricting further fragmentation of our landscape to a minimum.



The German government is currently developing a nationwide re-networking concept. This concept is intended as a basis not only for creating facilities for game to cross traffic routes, but also for restoring networking opportunities for communities as a whole. It is already standard practice to take such aspects into account when building and developing federal highways. If the need for such facilities can be shown to exist, crossing aids such as green bridges or green tunnels are to be provided. Their location, design and integration in the landscape must be optimised from a sectoral point of view.

Traffic necessities and the preservation of our tree-lined country roads as valuable components of the biodiversity of landscapes and as important cultural landscape elements need not necessarily conflict. The total length of such avenues is currently put at around 23,000 km. The Federal Agency for Nature Conservation, at the request of the Federal Environment Ministry, has determined the conceptual framework conditions for the maintenance, care and development of avenues and rows of trees in a preliminary T+D study.

### **1.6 Nature-friendly expansion of renewable energy sources**

The expansion of renewable energy involves impacts on nature and landscape. The Renewable Energy Sources Act (EEG) dating from 2004 therefore contains provisions designed to avoid or minimise adverse effects. For example, the construction of hydro power plants is linked to compliance with the requirements of the EEG regarding good ecological status of water bodies. Payments for electricity from photovoltaic systems on open spaces is confined to certain locations (e.g. sealed surfaces, or arable land converted to grassland).

The report presented by the German government in November 2007 on experience gained in connection with the EEG 2004 stated that these ecological requirements had on the whole had marked effects and that it had proved possible to minimise the negative impacts of the expansion on nature and landscape, although further technical potential was seen regarding the ecological impacts of hydro power plants. In addition to this generally positive outcome, there is also a need to observe whether undesirable trends occur. In the field of biofuels, the Biomass Electricity Sustainability Ordinance was enacted to safeguard the sustainability of power generation from biomass with the aid of verifiable criteria. As from 01.01.2010, proof that the biomass originates from sustainable production is a prerequisite for payment.

The establishment of sustainability criteria for biofuels has the utmost priority for the German government. In connection with the Renewable Energy Directive, pan-European sustainability criteria have been laid down for automotive biofuels and heating bioliquids. It is planned to transpose the sustainability criteria into national law as quickly as possible. Germany is also engaged in international initiatives for the sustainability of automotive biofuels, for example the G8 process “Global Bioenergy Partnership”.

### **1.7 Tourism, sport and health**

As well as cultural and historical attractions, Germany offers a great diversity of natural and cultural landscapes which permit a wide variety of leisure pursuits, nature experiences and nature-oriented recreation. The contribution made by nature conservation is to safeguard recreational spaces for exercise and nature-friendly, landscape-oriented sport, and rest and

relaxation in nature. It thereby contributes to physical and mental well-being and to positive stress management.

Leisure activities in nature, such as tourism and sporting activities, are becoming increasingly popular. The Federal Environment Ministry has supported a range of projects concerned with nature-friendly use of nature and landscape for recreation, tourism and health:

- In 2006 the “Nature Park Year” campaign with numerous activities at federal, Land and nature park level advertised what the nature parks had to offer. Like national parks and biosphere reserves, they are attractive destinations in the tourist country Germany.
- Under the environmental umbrella brand “Viabono – naturally enjoying holidays” the web-based natural experience navigator was created in 2008 with assistance from the Federal Environment Ministry / Federal Agency for Nature Conservation. It provides a nationwide overview of attractive natural experience offerings. Zoomable maps allow users to find out about varied offerings in different regions.
- Comprehensive background information, literature, studies and also good-practice examples of resolving conflicts between nature conservation and sport are available from the Nature Sport Information System of the Federal Agency for Nature Conservation. On the one hand, the web-based information platform serves to support the exchange of knowledge between experts and nature sports enthusiasts. On the other, it assists those responsible with the design, control and monitoring of projects.

The farmyard holidays promoted by the Ministry of Agriculture (BMELV) as part of the joint task of “Improving agricultural structures and coastal protection” are a near-natural and environment friendly kind of holiday. They stand for short journeys, and with their holiday, health, riding, fishing and wine-growing farms they offer a wide range of opportunities for a relaxing “natural holiday” full of experiences.

## **2 Information about the extent to which biological diversity is integrated in the implementation of environmental impact assessments and strategic environmental assessments at the various levels**

The following instruments laid down by law ensure the integration of biological diversity in planning and decision processes at both federal and Land level and in development cooperation programmes (here only SEA and EIA). The various assessment instruments differ in their allocation to the planning levels, their spatial relationships and the relevant protected assets, and also in their legal consequences. In some cases biodiversity explicitly belongs to the protected assets, while in others it is included in the assessment via other protected assets: flora and fauna species, habitats or natural regime. For the future it is particularly important to make further progress with operationalising biodiversity for planning purposes with the aid of clear criteria.

### ***2.1 Strategic environmental assessment and environmental impact assessment***

Since 1990 an environmental impact assessment (EIA) has been required by law for certain projects. The aim of the legislation is to ensure timely and comprehensive identification, description and assessment of the impacts of certain public and private projects on the environment. In addition to biological diversity, the protected assets include flora and fauna, human health, abiotic factors, and the interactions between the protected assets. The results are to be taken into account as early as possible in all official decisions on permits for projects.

Since 2005 a strategic environmental assessment (SEA) has also been prescribed by law for certain plans and programmes. Under federal law, these include regional policy plans (Land and regional level, EEZ), physical development plans (land use and local development plans) and flood control plans, programmes of measures under water legislation, air quality control and waste management plans.

### ***2.2 Habitats Directive impact assessment***

One instrument specifically designed to take account of biodiversity aspects in planning is the Habitats Directive impact assessment. The legal basis for this is the EU Habitats Directive (92/43/EEC), plus the Federal Nature Conservation Act and the Nature Conservation Acts of the Länder. This requires that projects which, either on their own or due to interactions with other projects or plans, are likely to have substantial adverse impacts on a protected area belonging to the European ecological network “Natura 2000”, must be assessed before authorisation or implementation to see whether they are compatible with the conservation objectives for the area in question. The conservation objectives relate to habitats and species covered by the Habitats Directive or the Birds Directive and hence to aspects of biological diversity.

Although the application of the Habitats Directive impact assessment is confined to environmental impacts on Natura 2000 areas, it can be regarded as one of the most powerful instruments relating to conservation of biological diversity. The reason is that if a project with substantial adverse effects continues to be pursued, it is first necessary to examine alternatives that are compatible with nature conservation. If no suitable alternatives are available, permission for the project cannot be given unless there is a compelling public interest in its implementation; in such cases, steps must be taken to ensure coherence.

### ***2.3 Impact mitigation***

The impact mitigation rule in Germany provides an instrument which serves to take account of biodiversity aspects and which has its legal basis in the Federal Nature Conservation Act and the nature conservation acts of the Länder. It lays down that those who cause encroachments on nature and landscape must be placed under an obligation to refrain from

avoidable adverse impacts on nature and landscape. Unavoidable harmful impacts must be compensated in accordance with a graduated system. The encroachment must not be carried out in cases where avoidance, compensation or substitution of the harmful impacts is not possible and the interests of nature conservation and landscape maintenance take priority over other interests.

The assets protected by the impact mitigation rule, which applies nationwide, comprise the performance and functional capacity of the natural regime, which thus includes flora, fauna and biological diversity, and also the landscape.

This instrument, established in 1976, has long been used in Germany to ensure systematic and successful compensation on the lines of “biodiversity offsets”.

For example, the species protection assessment is the most important test in road construction alongside the EIA and the Habitats Directive impact assessment. Since prohibitions under species protection legislation are strict law, they cannot be circumvented by processes that seek to balance interests. The statutory cascade must be complied with: avoidance – function-conserving measures/advance compensatory measures – exceptions accompanied by measures to maintain conservation status.

#### ***2.4 Political decisions***

Assessment of the environmental impact of political decisions at federal level is to a certain extent laid down in the rules for participation in federal legislation. In particular, the federal ministries are required by Article 44 (1) of the Common Rules of Procedure to check in each individual case whether the impacts of their legislation projects are compatible with sustainable development.

### **3 Inclusion of biodiversity aspects in other convention processes**

#### **3.1 Convention on the International Trade in Endangered Species (CITES)**

Apart from the destruction of habitats, the trade in endangered species is one of the greatest threats to the animal and plant world. To combat this, international trade in such species has been controlled since 1975 under the Convention on the International Trades in Endangered Species (CITES). In the EU countries this is implemented by the EC Regulation on Species Conservation.

During its presidency of the EU Council, Germany marked the 14th Conference of the Parties to CITES in 2007 by supporting various initiatives for the sustainable use of biological resources in the spirit of Millennium Development Goal 7, and putting forward proposals of

its own. Among these are the applications for the inclusion of dogfish and mackerel shark in Annex II to CITES.

Another German focus in the context of CITES concerns the efforts to list further tropical tree species in the CITES annexes and, for trees already listed, to demand measures to implement sustainability assessment and the labelling of the timber traded. At COP 14, in close collaboration with the countries of origin, a binding action plan was agreed for recording populations, distribution and the scale of trade.

In the CITES scientific committees and at the international expert workshop in Cancun/Mexico, Germany continued to work on the development of principles and criteria for the “non detriment finding”, in order to put the sustainable use of wild fauna and flora on a firmer, scientifically sound footing. Germany has thus made important contributions to improving the sustainable use of biological resources within the meaning of Article 10 of the CBD. During its presidency of the EU Council, Germany also tabled a discussion paper on poverty alleviation with the title “CITES and Livelihoods”, with the aim of ensuring that in future the CITES protection rules are applied in a way that takes account of the interests of poorer sections of the population in developing countries.

### **3.2 CMS (Bonn Convention on the Conservation of Migratory Species)**

The conservation of migratory species is an important contribution to the conservation of natural species diversity. Migratory species are primarily bird species, but also marine and terrestrial mammals, fish, turtles and insects. For the endangered species among them, it is particularly important to have international concepts and measures in place to halt the loss of habitats and resting places along their migration routes on a transboundary basis and to minimise other risk factors.

Germany is a party to the Convention on the Conservation of Migratory Species (Bonn Convention), and to the regional conventions adopted under its aegis for the conservation of seals in the Wadden Sea, small whales in the North and Baltic Seas (ASCOBANS), the European bat population (EUROBATS) and African-Eurasian waterbirds (AEWA). German is also a signatory to the Memorandum of Understanding on the Conservation and Management of the Middle-European Population of the Great Bustard, and to the Memorandum of Understanding concerning Conservation Measures for the Aquatic Warbler.

Germany also actively supports the development of new agreements and action plans for the benefit of species in Annex II to the Bonn Convention (e.g. African-Eurasian Raptors Agreement and ideas on the international conservation of migratory sharks).

In the field of nature conservation and species protection there is close cooperation in Germany between public authorities on the one hand and NGOs and voluntary organisations and individuals on the other. Numerous non-governmental organisations in Germany, with around 150,000 unpaid members, play an active part in the conservation of migratory species. As well as making donations, the largely voluntary workers participate in monitoring studies, research and the practical implementation of conservation measures. For example, some 5,000

voluntary ornithologists are involved in the German system for monitoring migratory and breeding birds.

### **3.3 Ramsar convention (Convention on Wetlands of International Importance, especially as Waterfowl Habitat)**

There are close connections between Ramsar and the Convention on Biological Diversity (CBD), for example due to the closely related principles of the CBD ecosystem approach and the Ramsar concept of “wise use”. The Ramsar Convention acts as a leading partner of the CBD for the fields of inland wetlands and waters (Decision VIII.20).

As part of the work of the “Biodiversity Liaison Group” (BLG: its members are the global biodiversity-related conventions CBD, CMS, CITES and WHC), the heads of the secretariats meet once a year. At present the main purpose of these meetings is to harmonise the different reporting methods and thematic overlaps.

The concept of the convention, which was initially keyed very closely to wetlands for birds, has gradually moved closer to an ecosystem approach. Today there is a greater focus on the importance of wetlands and the ecosystem services they provide. With its sustainable use approach and the network of protected areas, the Ramsar Convention can in the long term make an important contribution to the conservation and sustainable use of biological diversity.

In November 2008 the Tenth Conference of the Parties to the Ramsar Convention was held under the motto “Healthy Wetlands, Healthy People”. It discussed the role of biological diversity and human health, integrating this hitherto missing aspect in the overall concept of the convention.

### **3.4 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage**

The implementation of the UNESCO World Heritage Convention (1972) in the field of natural heritage in Germany makes an important contribution to the implementation of the CBD, and especially of the work programme on protected areas. The identification of potential UNESCO world heritage sites in Germany (screening project) and the gradual processing of UNESCO world heritage nominations helps provide special protection for species and ecosystems for which Germany bears special responsibility. In this connection, see the remarks in Chapter II, “2.2.2. Implementation of strategy – International”

At international level, Germany support the UNESCO World Heritage Convention through development cooperation measures, e.g. protected area projects in 12 countries, such as Mauretania, Peru and Vietnam.

### **3.5 Alpine Convention – Ecological Network**

In implementing the Alpine Convention, Germany is particularly concerned to put into practice the Protocol on Conservation of Nature and Landscape Protection, especially Article 12, the creation of a national and cross-border ecological network.

This contributes to the implementation of the CBD work programme on protected areas (Decision VII/28; especially goals 1.1. and 1.3) and to the thematic programme on “Mountain Biodiversity”. Germany is a major supporter of the activities to create an ecological network in the Alps. In addition to taking part in numerous activities, Germany chaired the Alpine Convention’s “Ecological Network Platform” from March 2007 to March 2009.

The activities primarily include the measures set out in the work programme to provide scientific support for the establishment of the pan-Alpine ecological network of protected areas, project-oriented implementation, and communication and public relations measures.

Contacts exist with initiatives in other mountainous regions (Carpathians, Caucasus) where there are plans to draft specific conventions on sustainable development modelled on the Alpine Convention.

### **3.6 UNFCCC**

With a view to integrating biodiversity aspects in other international processes, the Ninth Conference of the Parties to the CBD passed a number of resolutions, e.g. on collaboration with the Rio Conventions, and especially on cooperation between CBD and UNFCCC with regard to the integration of biodiversity aspects in the climate process. It was decided to set up an expert group on this subject.

In the context of development cooperation, the interface between biodiversity and climate change is coming to play an increasingly important role. In 2009 the Federal Ministry for Economic Cooperation prepared a position paper on this topic.

## **4 Inclusion of biodiversity aspects in development policy**

For the German government, the conservation and sustainable use of biological diversity is an integral part of an economically, socially and ecologically sustainable development policy. It is also a contribution to implementing the UN Millennium Declaration adopted by the heads of state and government at the UN Millennium Summit in the year 2000, and to achieving the resulting Millennium Development Goals (MDGs). In view of the many and varied uses of natural resources, the importance of biological diversity extends beyond the field of action “Protecting Our Common Environment” in the Millennium Declaration, and also beyond MDG 7 - “Ensure Environmental Sustainability”. Indeed, conservation and sustainable use of biological diversity is also a basic precondition for achieving the overarching goal of the Millennium Declaration – safeguarding our global future – and the other MDGs, especially MDG1 with its aim of halving, by 2015, the proportion of people who suffer from hunger.

Conservation and sustainable use of biodiversity therefore play an important role in German development policy. At the Ninth Conference of the Parties to the CBD, held in Bonn in 2008, German Chancellor Angela Merkel gave a further boost to the importance of this issue by promising an additional €500 million for the period 2009 to 2012 and €500million a year from 2013 onwards for the protection of forests and other ecosystems in partner countries.

This means that a total of €1.34 billion is available for international cooperation on conserving biological diversity during the period 2009 to 2012.

The basic principles and objectives of German development policy in the field of biodiversity are set out in the sectoral concept “Biological Diversity” (2008). They state that assisted projects must serve the interests of conservation and sustainable use of biodiversity, cater for the basic needs of the population concerned, and make a concrete contribution to poverty alleviation. In addition, they put forward recommendations on cross-sectoral integration of biodiversity conservation, for example policy coherence, which will result in greater attention being focused on biodiversity management issues in the policies, plans and programmes of the partner countries.

Germany gives developing countries bilateral assistance with discharging their obligations under the CBD. In 2008 Germany made a total of €210 million available for protecting biodiversity and rainforests. More than 260 million Euro was pledged in 2009. Germany is currently giving some 15 partner countries special help with their efforts to conserve and make sustainable use of biological diversity. At the same time, biodiversity projects are in progress in a further 20 countries with suitable starting points for cooperation in this field. A large proportion of the assistance continues to concentrate on sustainable forestry and management of protected areas. This also includes developing peripheral zones of protected areas and preparing business plans. This is not merely a question of safeguarding protected areas in the long term, but also of improving the basis for the life and livelihood of the local people by making sustainable use of natural resources. Another field of activity is promoting the sustainable use of agro-biodiversity. Increasing the value added by agro-biodiversity products generates income and fosters rural development. Another important area of German development cooperation is concerned with accompanying the negotiations on the international ABS regime. In this connection, the “Multi-Donor ABS Capacity Development Initiative for Africa”, initiated by the Federal Ministry for Economic Cooperation, has been successfully engaged in human, institutional and political capacity building for ABS in Africa since November 2006, by running regional workshops and training courses and creating working materials. The aim here is partly to help African states to develop and/or implement national legislation, and partly to assist the countries with the discussion and formulation of an “African position” in the ABS negotiations under the CBD.

The Federal Ministry for Economic Cooperation also supports the multilateral development policy in the field of biodiversity. In particular, this includes the regular contribution to the GEF, which in this sector comes to about €10 million a year.

In 2003, to underline the outstanding role of indigenous peoples and local communities in the conservation of biological diversity, Germany joined the Equator Initiative. This is a partnership that brings together the United Nations, the Canadian and German governments, civil society and private-sector businesses. The aim of this alliance is to promote local communities which make a contribution to improving their own situation by making sustainable use of biological diversity. For example, the “Equator Prize” is awarded for outstanding community projects. The Federal Ministry for Economic Cooperation is also a member of the Poverty Environment Partnership, an international network of environmental and development organisations working in the field of poverty reduction and sustainable resource management.



Another important topic of German development cooperation is implementing the Cartagena Protocol in developing countries in the interests of biosafety.

In the interests of agro-biodiversity, Germany also supports Biodiversity International (formerly the International Plant Genetic Resources Institute (IPGRI)) and the international agricultural research centres (IARC) which have joined forces to form the Consulting Group for International Agricultural Research (CGIAR), including their gene banks. It also contributes to the Global Crop Diversity Trust (GCDT). Moreover, Germany supports various initiatives for shaping and realising farmers' rights in relation to plant genetic resources. These rights support the important concern of global food security and help to implement the human right to food.

Under bilateral and multilateral cooperation agreements on global food security, Germany currently provides nearly €95 million a year for direct measures to implement the CBD in partner countries. These and other projects in the field of rural development and resource management make a contribution to supporting the goals of the convention and of the ITPGRFA.

One goal of the National Strategy on Biological Diversity is to incorporate biodiversity aspects into the world trade system. In doing so the mandate of the Doha Round must be taken into account.

Furthermore, the German government aims to devote 0.7% of gross national income to public development cooperation by 2015. To this end it is necessary for innovative financing instruments to play a part in addition to budget funds and further debt relief.

The Ninth Conference of the Parties to the CBD approved a message to the International Conference on Financing for Development meeting in Doha in 2008.

## **Chapter IV – Conclusions: Progress towards the 2010 target and implementation of the Strategic Plan**

This chapter provides an overview of the integration of the CBD goals in the national objectives and of progress towards achieving the targets on the basis of the relevant CBD and national indicators. Where it is possible to allocate specific indicators to the targets, these indicators are used to provide a first estimate of the achievement of the targets on the basis of the existing data and other information. This estimate is a provisional one. A detailed indicator report about the National Strategy on Biological Diversity is to be presented to the 10th Conference of the Parties to the CBD in 2010. The reader's attention is also drawn to the description in Chapter I of the development of the sustainability indicator for species diversity (overall indicator and individual indicators).

### **1. Progress towards the 2010 target of the CBD**

#### **1.1 Goal 1: Promote the conservation of the biological diversity of ecosystems, habitats and biomes**

Target 1.1: At least 10% of each of the world's ecological regions effectively conserved

Target 1.2: Areas of particular importance to biodiversity protected

#### **Selected national objectives**

- By the year 2020, throughout 2% of Germany's territory, Nature is once again able to develop undisturbed in accordance with its own laws, and areas of wilderness are able to evolve. By 2010, Germany has a representative and functional system of interlinked biotopes covering 10% of its territory. This network lends itself to permanently protecting the habitats of wild species and is an integral component of a European system of interlinked biotopes.
- By 2010, the decline in endangered habitat types has been halted. Thereafter, those biotope types which are under threat of complete destruction or severely endangered according to the Red Lists will increase again in terms of their area and number, degradations have been halted, and regeneration has begun.
- By 2010, the development of the European network Natura 2000 is complete.
- By 2020 a well-functioning management system for all large protected areas and Natura 2000 areas has been established.
- By 2020, all stocks of habitat types (in accordance with Annex I of the Habitats Directive), protected (§ 30 of the Federal Nature Conservation Act (BNatSchG)) and endangered biotope types as well as those for which Germany has a particular responsibility, or which are particularly significant for migratory species, indicate a significant improvement in their conservation status compared with 2005, in those cases where a good conservation status has not yet been achieved.

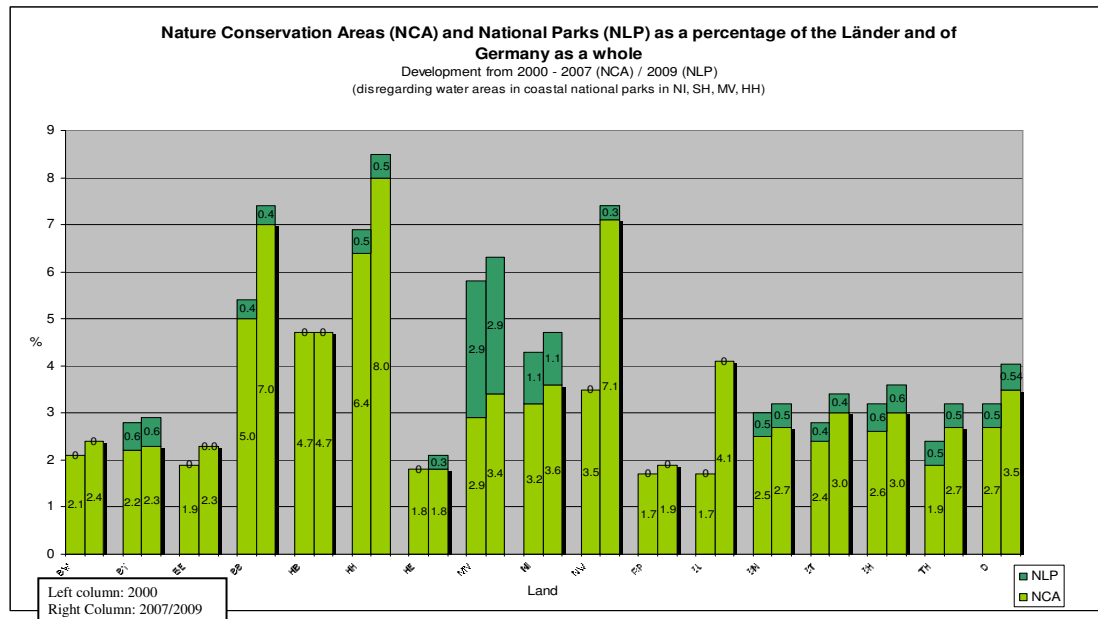
#### **Relevant CBD indicators (Decision VIII/15)**

- Trends in percentage area of selected biomes, ecosystems and habitats
- Trends in abundance and distribution of selected species
- Percentage area of protected areas

## National indicators

*Indicator: "Size of strictly protected areas"*

The indicator represents the area of the national parks (NLP) and nature conservation areas (NCA) as a percentage of the land area of Germany. The national parks have a total area of 962,051 ha (April 2009). In terms of the terrestrial area of Germany, which disregards marine areas, this corresponds to a share of 0.54% of the Federal Republic. Nature conservation areas account for a 3.5% share of the land area of Germany, or 1,240,345 ha (December 2007).

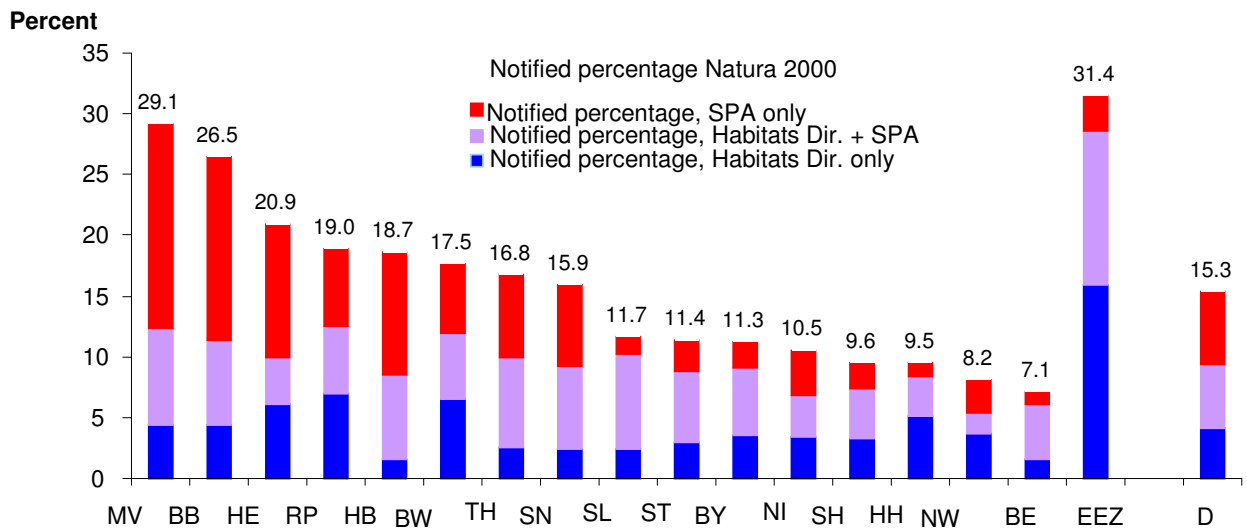


Source: Federal Agency for Nature Conservation (2009)

*Indicator: "Natura 2000 area designations"*

The indicator shows the Natura 2000 areas notified to the European Commission as a percentage of the terrestrial area of Germany (September 2008: 15.3%). It shows the steps that have been taken to achieve a coherent ecological network of protected areas in Germany.

## Natura 2000 areas in Germany (September 2008) Notified terrestrial areas as percentages of Länder\*



Source: Federal Agency for Nature Conservation (2009)



## Assessment

With the completion of notifications for the Natura 2000 network areas totalling 14.1% of the land area and the increase in the number and extent of nature conservation areas and national parks, considerable progress towards achieving the targets has been made since the Third National Report.

### 1.2 Goal 2: Promote the conservation of species diversity

Target 2.1: Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups.

Target 2.2: Status of threatened species improved.

#### Selected national objectives

- By 2010 the decline in the diversity of wild species that exists today is halted. After that, the trend is reversed, leading to greater diversity of domestic species over large areas.
- By 2010 the proportion of species seriously endangered or at risk of extinction has been reduced. By 2020, species where Germany has a special responsibility for their conservation have achieved populations capable of survival. By 2020 the endangerment status of the majority of Red List species has been improved by one step.

### **Relevant CBD indicators (Decision VIII/15)**

- Trends in abundance and distribution of selected species
- Change in status of endangered species
- Percentage area of protected areas

### **National indicators**

*See also indicators for Goal 1*

*Indicator: “Sustainability indicator for species diversity”*

The indicator describes the suitability of the landscape as a habitat for species (see box in Chapter I 1.2).



### **Assessment**

The main status indicator, the sustainability indicator for species diversity, shows on the basis of selected bird species that there has been no significant improvement in habitats in the landscape as a whole since 1997. The increase in populations of a few endangered species contrasts with continuing threats to many species and a further decline in the populations of certain other species.

### **1.3 Goal 3: Promote the conservation of genetic diversity**

Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.

#### **Selected national objectives**

- In view of the population sizes, geographical distribution and range of the genetically determined characteristics, the survival, adaptability and evolution processes of wild species in the typical regional forms are ensured. The loss of genetic diversity has been brought to a halt by 2010.
- Regionally adapted crop varieties threatened by genetic erosion, so-called farmyard and field varieties, and endangered livestock species have been safeguarded by in-situ or on-farm and ex-situ conservation. Genetic material in gene banks and in situ / on farm which is intended for conservation is permanently free from genetic intermixture. Innovative sustainable use of varieties and breeds is promoted by appropriate breeding research and breeding activities.

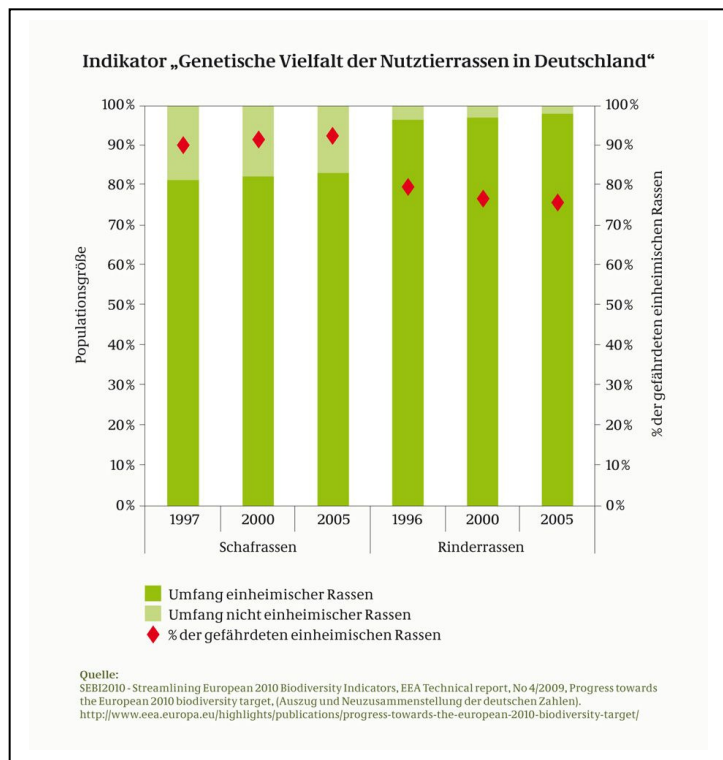
### **Relevant CBD indicators (Decision VIII/15)**

- Trends in genetic diversity of livestock, crops and fish species of great socio-economic importance
- *Biological diversity used in the field of food and medicine (indicator under development)*
- Trends in abundance and distribution of selected species

### **National indicators**

As part of the SEBI 2010 (Streamlining European 2010 Biodiversity Indicators, <http://biodiversity-chm.eea.europa.eu/information/indicator/F1090245995>), an indicator for analysing and reporting progress in relation to the European objectives for 2010 was developed under the coordination of the European Environment Agency (EEA) and with the participation of German experts. This depicts a trend in the genetic diversity in livestock (EEA Report No. 4/2009 and No. 5/2009). Data from Germany is available on population trends in cattle and sheep breeds. Indicators for other sectors of genetic diversity in agriculture, forestry, fisheries and the food industry have yet to be developed.

The indicator should be read as follows: in the case of sheep breeds, for example, approx. 81% of the population in 1997 was made up of native breeds and approx. 90% of the native breeds were classified as endangered.



**Indicator: „Genetic Diversity of Livestock Breeds in Germany“**

Populationsgröße =  
Size of population

% der gefährdeten einheimischen Rassen =  
Percentage of endangered native breeds

Schafzassen = Sheep  
Rindzassen = Cattle

Umfang einheimischer Rassen =  
Native breeds  
Umfang nicht einheimischer Rassen =  
Non-native breeds



**Assessment**

It is not possible to detect a significant trend. Over the period shown, the situation of native breeds has stagnated, while their endangerment status has continued at a high level. The endangerment situation has worsened for native sheep breeds, but improved slightly for cattle breeds.

**1.4 Goal 4: Promote sustainable use and consumption**

Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.

Target 4.2: Unsustainable consumption of biological resources, or that impacts upon biodiversity, reduced.

Target 4.3: No species of wild flora or fauna endangered by international trade.

**Selected national objectives**

- Products and services that take the pressure off biodiversity, like economic activities which promote biodiversity, are becoming increasingly easy for people to identify. The demand for nature-friendly products and services is growing steadily, and the supply is showing a marked improvement.
- In 2020, 25% of imported natural substances and products (e.g. farm, forestry, fisheries products, medicinal plants, aroma plants and collectors' plants, collectors' animals) are to come from naturally and socially acceptable uses.
- Put a procurement and construction system in place by 2020 which is nature and environment friendly and also oriented to standards that conserve biodiversity. To this end the existing eco labels will be developed further. This will be accompanied by a review and, where necessary, further development of the existing basic principles for procurement.
- The generation and use of renewable energy is not at the expense of biological diversity.
- The percentage of tourism offers that apply the "CBD rules on biological diversity and tourism development", is steadily increased. Recreational and tourism offerings and infrastructures in Germany are based on environmentally sound and nature-friendly models. By 2020 at least 10% of tourism providers satisfy ecological criteria (e.g. Viabono).
- By 2020, some 30% of the area of Germany consists of nature parks. By 2010, 80% of nature parks satisfy quality criteria in the fields of tourism and recreation. All national parks allow people to experience nature in suitable areas.
- Continue to ensure that no threats to wild species can be expected from the release and use of genetically modified organisms (GMO).

#### **Relevant CBD indicators (Decision VIII/15)**

- Area of ecosystems used for forestry, agricultural and aquaculture purposes is under sustainable management.
- *Percentage of products originating from sustainable sources (indicator under development)*
- Trends in abundance and distribution of selected species
- *Marine Trophic Index*
- Nitrogen deposition
- Water quality of freshwater ecosystems
- Ecological footprint and related concepts
- Change in status of endangered species

#### **National indicators**

*Indicator: "Agro-environmental subsidy (subsidised area)"*

The indicator provides information about the development of areas covered by agro-environmental assistance in Germany. It thus indicates the financial assistance for land management methods that are more closely geared to sustainable management. In 2004 this assistance applied to 29% of agricultural land.

	1994	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Assisted area (million ha farmland)	4,5	5,0	4,7	4,2	5,0	4,2	4,3	5,0	5,0	4,9	4,8

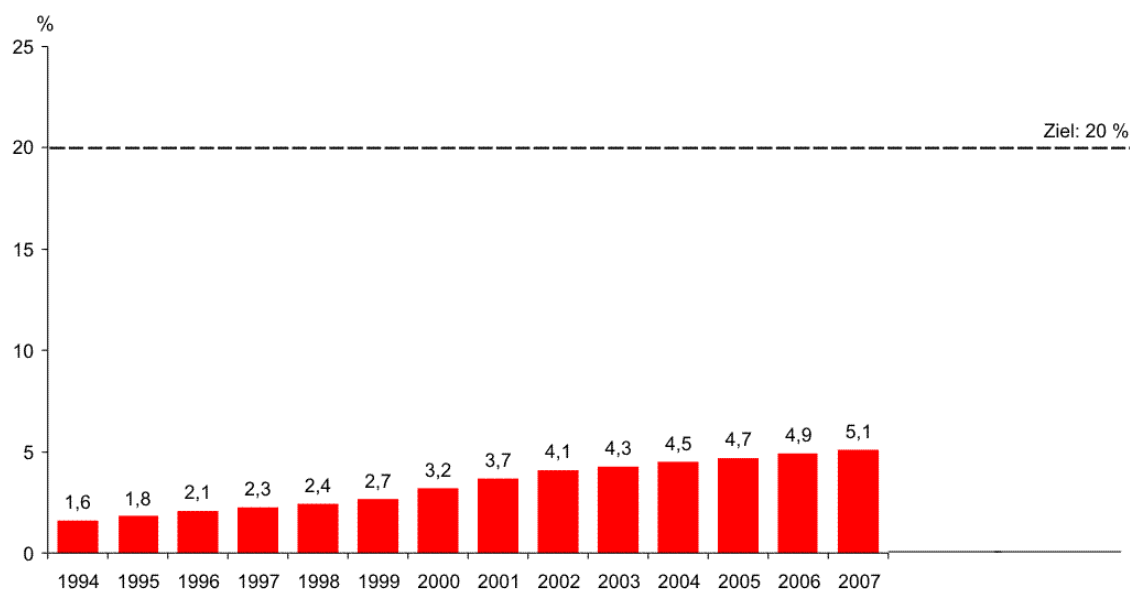
Source: Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), federal government agricultural reports, Federal Environment Agency (UBA)

*Indicator: “Organic farmland as a proportion of total agricultural land”*

The indicator shows the area used for organic farming as a percentage of the total area of agricultural land in Germany. In 2008 the share was 5.4%. (Target (“Ziel”): 20 %.)

**Organic farming as a percentage of total farmland**

**Anteil des Ökologischen Landbaus an der landwirtschaftlichen Nutzfläche**



**Quellen:** Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (Hrsg.), Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten, Münster-Hiltrup, verschiedene Jahrgänge; <http://www.bmelv.de>

**Sources:** Federal Ministry of Food, Agriculture and Consumer Protection (Ed.), Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten, Münster-Hiltrup, various years; <http://www.bmelv.de>

*Indicator: “Proportion of certified forest land in Germany”*

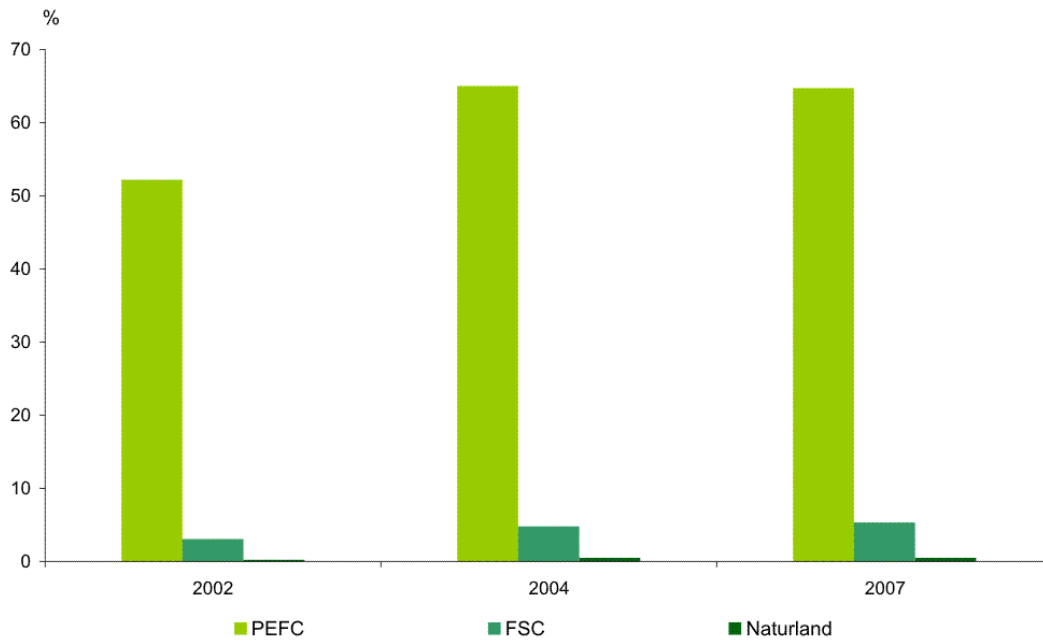
The indicator shows the total used forest areas certified in Germany.

The table shows the figures for 2002, 2004 and 2007.

The latest certification figures can be found in Chapter III No. 1.3 “Forestry Policy”.



**Certified forest areas as percentage of total forest area**  
**Anteil zertifizierter Waldfläche an der gesamten Waldfläche**



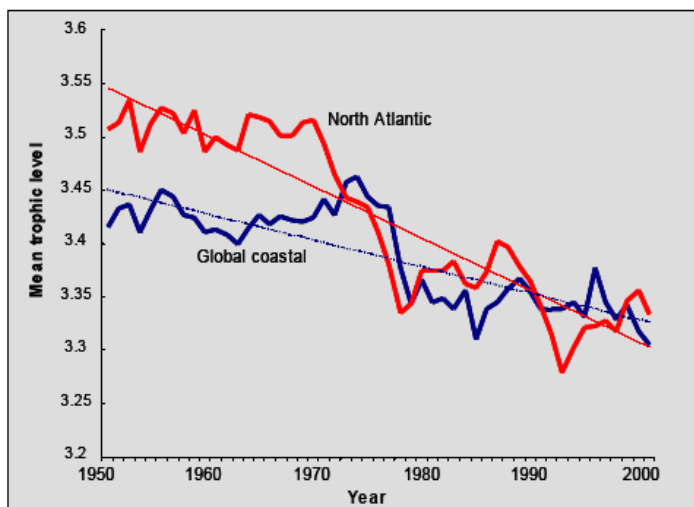
Quelle: Bundesamt für Naturschutz (BfN) 2007

PEFC: Programme for the Endorsement of Forest Certification Schemes  
 FSC: Forest Stewardship Council

Source: Federal Agency for Nature Conservation (BfN) 2007

*Indicator: "Marine Trophic Index"*

The indicator shows the mean trophic level of marine fishing catches. A decline in the indicator points to increased fishing and overfishing. The indicator shows the intensity of use of marine fish, which has displayed a marked increase in recent decades, especially in the North Atlantic.





## Assessment

In certain areas, progress has been made with promoting sustainable use and sustainable consumption (e.g. organic farming, forestry and timber products). The various initiatives to promote sustainable, nature-friendly tourism are also showing signs of success. In other areas, initiatives for sustainable use have been launched.

### **1.5 Goal 5: Pressures from habitat loss, land use change and degradation, and unsuitable water use, reduced.**

Target 5.1: Rate of loss and degradation of natural habitats decreased.

#### **Selected national objectives**

- The landscapes in Germany that are particularly worth preserving from a nature conservation point of view continue in permanent existence. The proportion of cultural landscapes particularly worth preserving continues to increase.
- By 2020, it is once again possible for nature to develop undisturbed in accordance with its own laws on at least 2% of Germany's area, for example in post-mining landscapes, on former army training grounds, along streams and rivers, at sea coasts, in peatlands and in mountain regions. A large proportion of wilderness areas are extensive regions.
- By 2020, forests with natural forest development account for 5% of the total area under forest. Natural development on 10% of public-sector forest areas by 2020.
- By 2015 the area accounted for by agricultural biotopes of high quality from a nature conservation point of view (high-grade pasture, meadow orchards) has been increased by at least 10% compared with 2005. In 2010 the proportion of near-natural landscape elements (e.g. hedges, uncultivated strips, field trees and shrubs, streams/ponds) in areas used for agricultural purposes is at least 5%.
- By 2020, streams and rivers and their meadows are sufficiently secure in their function as habitats to ensure a regional variety that is typical of Germany. By 2020 the majority of rivers and streams once again have more natural flood areas.
- By 2020 the additional land take due to settlement and traffic does not exceed 30 ha per day. In the long term it should ideally be possible to effectively replace land take by re-using existing land.
- By 2020, existing transport routes do not normally give rise to any substantial impairment of the biotope network. Ecological continuity of fragmented spaces is achieved. The present percentage of unfragmented open spaces in excess of 100 km<sup>2</sup> remains unchanged.

#### **Relevant CBD indicators (Decision VIII/15)**

- Trends in percentage area of selected biomes, ecosystems and habitats
- Trends in abundance and distribution of selected species
- Marine Trophic Index

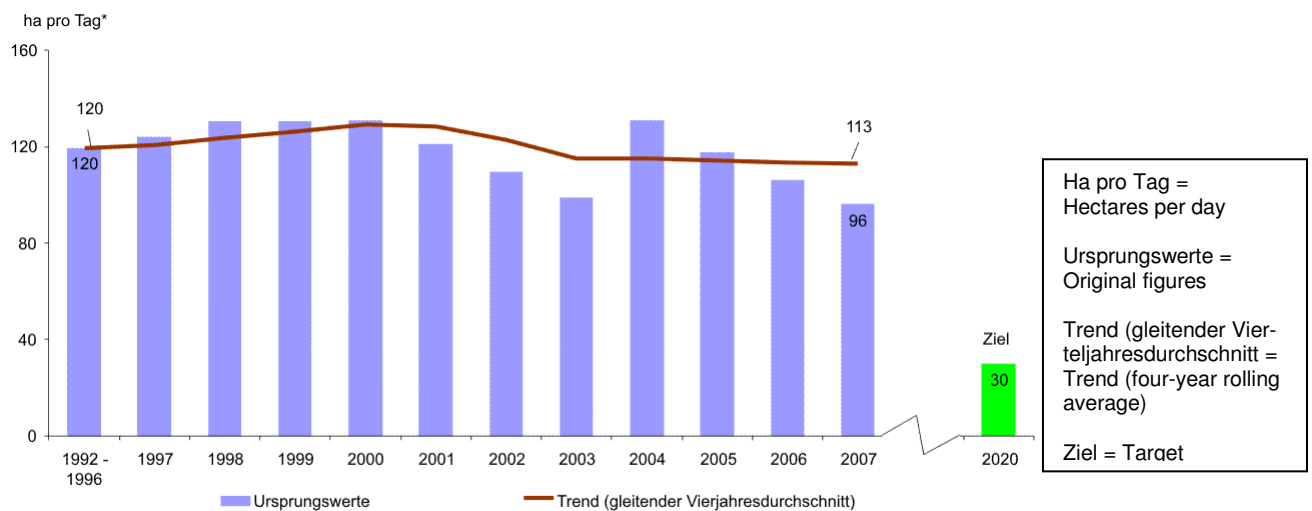
#### **National indicators**

*Indicator: "Increase in the amount of land used for human settlements and transport infrastructure"*

Undeveloped and unfragmented land that is unspoiled by urban development is a finite resource. In addition to the direct environmental impacts of increasing the area used for settlement and traffic – such as loss of natural soil functions due to surface sealing, loss of fertile or near-natural land and loss of biodiversity –, every new development of building land in the vicinity of cities and outside existing core settlement areas generates more traffic. This leads to further environmental pressures due to noise, energy consumption and pollutant emissions. The German government therefore aims to limit new land take for settlement and traffic purposes to 30 ha per day by 2020. During the period 1992 to 2007, the area used for settlement and traffic increased by 16.1%. This corresponds to an average increase of 120 ha per day. The figure of 113 ha per day for 2004 to 2007 shows a much smaller reduction than the decline in building activity in recent years would lead one to expect. This despite a decline in the population, there is no recognisable trend in the direction of the target figure.

### Increase in areas used for settlement and traffic

#### Anstieg der Siedlungs- und Verkehrsfläche



Die Flächenerhebung beruht auf der Auswertung der Liegenschaftskataster der Länder. Aufgrund von Umstellungsarbeiten in den amtlichen Katastern (Umschlüsselung der Nutzungsarten im Zuge der Digitalisierung) ist die Darstellung der Flächenzunahme am aktuellen Rand verzerrt.

**Quelle:** Statistisches Bundesamt, Bundesamt für Bauwesen und Raumordnung 2008

The areas are based on figures from the land registers of the Länder. Owing to changes in the official cadastral systems (reclassification of land use types in the course of digitisation), the representation of the increase in area is distorted toward the right-hand margin.

**Source:** Federal Statistical Office, Federal Agency for Construction and Regional Policy 2008

*Indicator: “Sustainability indicator for species diversity”*

On the basis of selected bird species, the indicator indirectly describes the suitability of the landscape as a habitat for selected bird species (see box in Chapter I 1.2). If habitats are lost or impaired, this can have an impact on the populations of representative bird species represented by the indicator.

## Assessment



The aim of achieving an increase in species diversity brings together a wide variety of action fields. There have been many and various activities that make a contribution to achieving the concrete national targets. However, it is often impossible to identify concrete successes, and in some cases there is a lack of the necessary data. The sustainability indicator for species diversity indicates that there has been no significant improvement in the habitats of flora and fauna in the landscape as a whole.

### **1.6 Goal 6: Control threats from invasive alien species**

Target 6.1: Pathways for major potential alien invasive species controlled.

Target 6.2: Management plans in place for major alien species that threaten ecosystems, habitats or species.

#### **Selected national objectives**

- The natural genetic diversity of the wild populations is protected from harmful effects due to invasive alien species and breeding varieties.

Relevant CBD indicators (Decision VIII/15)

- Trends in invasive alien species

#### **National indicators**

- Under development

### **Assessment**

?

To date, few alien species have been detected which represent a potential threat to biological diversity. There is no nationwide monitoring system for this purpose. In 2009 the revised version of the Federal Nature Conservation Act introduced a statutory observation requirement with effect from 01.03.2010. This will improve the data situation.

### **1.7 Goal 7: Address challenges to biodiversity from climate change and pollution**

Target 7.1: Maintain and enhance resilience of the components of biodiversity to adapt to climate change.

Target 7.2: Reduce pollution and its impacts on biodiversity.

#### **Selected national objectives**

- By 2020 the critical loads and levels for acidification, heavy metal and nutrient inputs (eutrophication) and ozone are complied with, thereby ensuring sustainable protection for sensitive ecosystems.
- Persistent organic pollutants – POP's – are removed as far as possible from trade and use, and replaced by less persistent, less bioaccumulative and less toxic substances.
- By 2015, rivers, lakes, transitional waters and coastal waters have good chemical and good ecological status. There is no deterioration in the status of water bodies which already have very good status.

- There is a continued steady reduction in adverse effects arising from traffic, e.g. through pollutants, noise and light (in relation to 2005 immission levels).
- Provided the EU, in the context of the international climate negotiations, undertakes to make a 30-percent reduction in its greenhouse gas emissions by 2020 compared with 1990, Germany will seek to reduce its own emissions by an even larger amount. The long-term rise in mean global temperature is restricted to 2 degrees Celsius above the pre-industrial level.
- By 2020 the natural CO<sub>2</sub> storage capacity of terrestrial habitats has been increased by 10% (e.g. by rehydration and renaturing of peatlands and the increase in near-natural forests).

Relevant CBD indicators (Decision VIII/15)

- Nitrogen deposition
- Water quality of freshwater ecosystems
- Networking/fragmentation of ecosystems

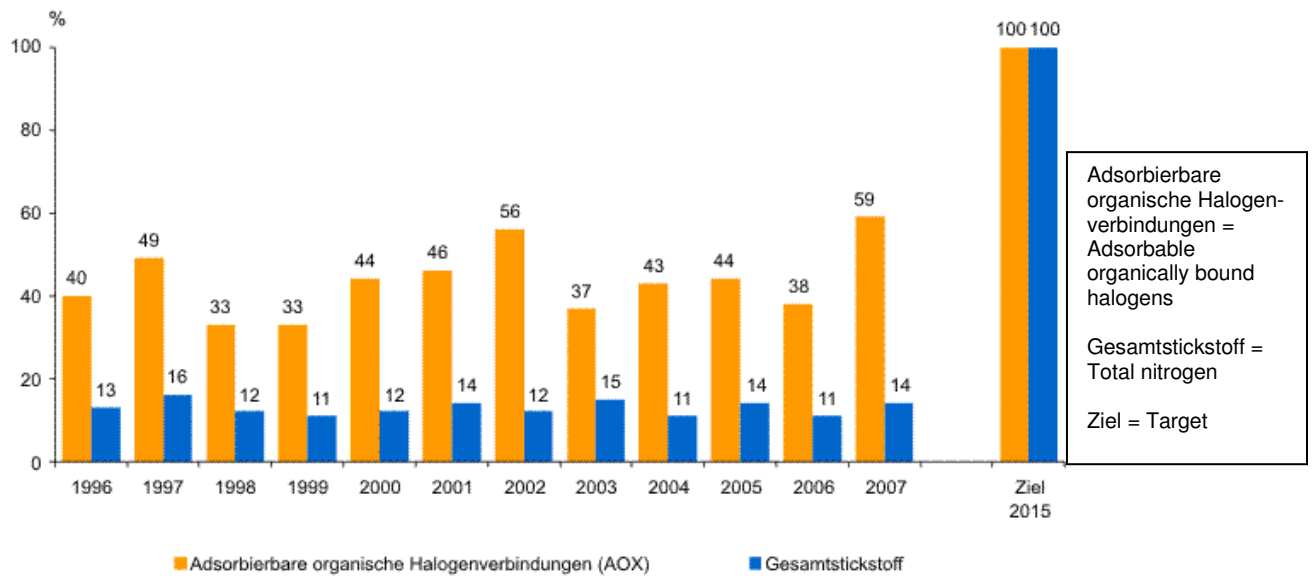
### **National indicators**

*Indicator: “Water body quality – percentage of water bodies with at least quality class II“*

The indicator “Water body quality” from the thematic area “Protection of natural resources” is particularly suitable for making statements about the quality of water bodies for the National Strategy on Biological Diversity.

The indicator totals the river sections of the water bodies in Germany with not more than moderate pollution and shows them as a percentage of the total length of rivers (figure for 2000: 65.1%; LAWA 2002). The indicator shows the biological water quality. It is also a measure of the living conditions in flowing waters for maintaining biological diversity. However, there is currently no up-to-date data for this indicator. This report therefore falls back on the indicator: “chemical water quality”.

**Percentage of measuring stations where chemical status of water body is class II or better**  
**Anteil der Messstellen mit der chemischen Gewässergüteklasse II und besser**

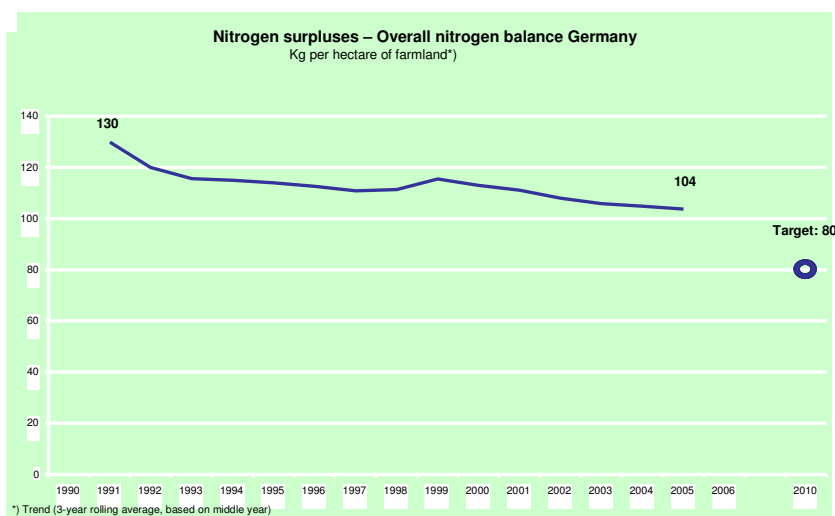


Quelle: Umweltbundesamt 2008

Source: Federal Environment Agency 2008

*Indicator: "Nitrogen surplus (overall balance sheet)"*

The indicator is calculated from the overall nitrogen balance. In the overall nitrogen balance, surpluses are calculated from the difference between nitrogen flows into the agricultural sector and nitrogen flows leaving it. The calculated nitrogen surpluses are mean values for Germany. They are a yardstick for potential inputs into groundwater, surface waters and the air. From 1991 to 2004, the nitrogen surplus in Germany from agricultural sources fluctuated between 100 and 120 kg/ha. The provisions of the revised Fertilisers Ordinance of 2006 can be expected to bring a further reduction in the nitrogen surplus.



Source: Julius Kühn Institute Braunschweig, Federal Environment Agency/University of Gießen

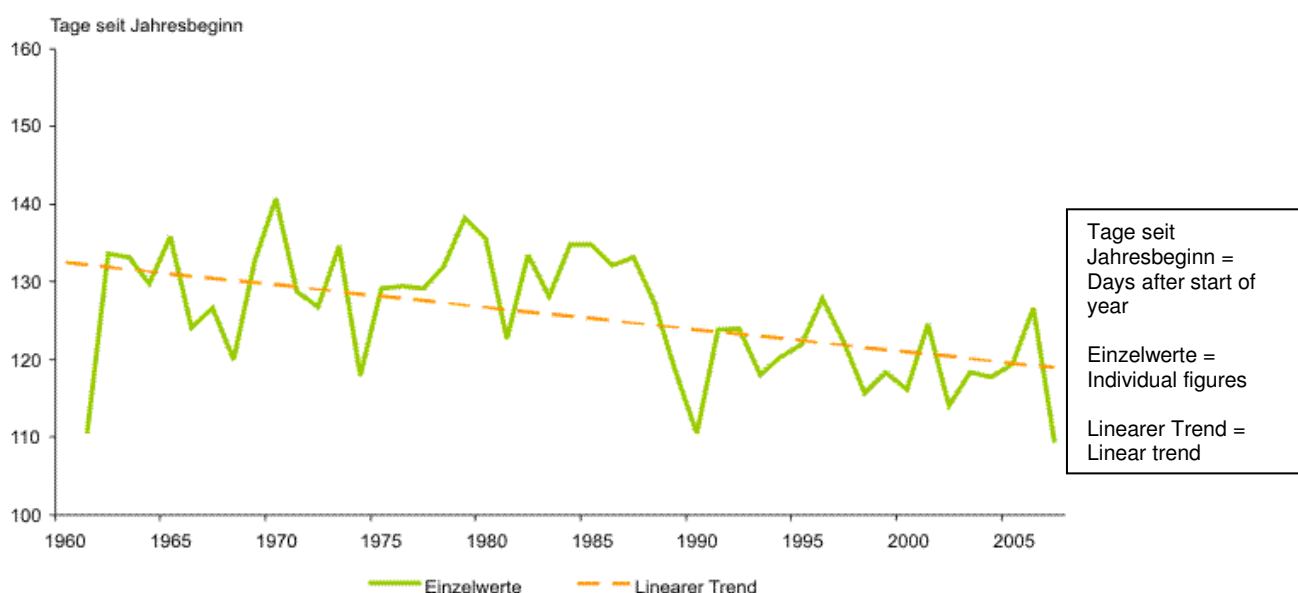
*Indicator: "Flowering season of cultivated apple varieties"*

See note on page 8, climate change and indicator

The indicator shows the impact of climate change, taking apple blossom as an example. Climate changes in Germany and Europe are now so significant that it is possible to detect first impacts on flora and fauna. There is evidence of a significant shift forward in the timing of the phenological spring phase over the last half century, which provides a good reflection of the rise in temperatures in Germany during this period. The mean annual temperatures in Germany for the years 1901 to 2003 show an upward trend of 0.8°C in 100 years.

#### Start of Apple Blossom (regional average for Germany)

Beginn der Apfelblüte (Gebietsmittel von Deutschland)



Quelle: Deutscher Wetterdienst, Mitteilung vom 25.09.2008

Source: German Weather Service, communication of 25.09.2008



## Assessment

During the period under review, there have been further reductions in pollution levels in Germany, and hence a reduction in their adverse impacts on biological diversity. However, further progress is needed, especially in the field of nitrogen emissions. The National Adaptation Strategy has improved the basis for targeted activities to safeguard and improve the capacity of biodiversity components to adapt to climate change.

### 1.8 Goal 8: Maintain capacity of ecosystems to deliver goods and services and support livelihoods

Target 8.1: Capacity of ecosystems to deliver goods and services maintained.

Target 8.2: Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people, maintained.

### **Selected national objectives**

- See Goal 4

### **Relevant CBD indicators (Decision VIII/15)**

- Health and well-being of communities which are directly dependent on the goods and services of the local ecosystems
- Biological diversity used in the field of food and medicine (indicator under development)
- Water quality of freshwater ecosystems
- Marine Trophic Index
- Frequency of ecosystem collapses of human origin

### **National indicators**

*See Goal 4*

### **Assessment**

*See Goal 4*

## **1.9 Goal 9: Maintain socio-cultural diversity of indigenous and local communities**

Target 9.1: Protect traditional knowledge, innovations and practices.

Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing.

### **Selected national objectives**

- Not relevant to Germany.

### **Relevant CBD indicators (Decision VIII/15)**

- Linguistic diversity status and trends, and number of people who speak indigenous languages.
- *Additional indicators are to be developed*

### **National indicators**

*Not relevant to Germany.*

### **Assessment**

*Not relevant to Germany.*



### **1.10 Goal 10: Ensure fair and equitable sharing of benefits arising from the use of genetic resources**

Target 10.1: All transfers of genetic resources are in line with the Convention on Biological Diversity and its relevant provisions.

Target 10.2: Benefits arising from the commercial and other utilisation of genetic resources shared in a balanced and equitable manner in line with the Convention on Biological Diversity and its relevant provisions, with the countries providing such resources.

#### **Selected national objectives**

- The users and providers of genetic resources (collecting establishments, industry, science, trade, breeders and private individuals) are aware of and observe the “Bonn Guidelines” of the Convention on Biological Diversity or apply the standard rules of the International Agreement on Plant Genetic Resources for Food and Agriculture. The rights of indigenous and local communities in particular are taken into account.
- Access to genetic resources with fair benefit sharing is guaranteed.

#### **Relevant CBD indicators (Decision VIII/15)**

- *Indicator to be developed*

#### **National indicators**

*Not available*

### **Assessment**



Germany – particularly in its role as chair of the Ninth Conference of the Parties to the CBD (2008 – 2010) – was a vigorous supporter of progress towards an international agreement on access to genetic resources and on fair sharing of the benefits of their use. In Bonn a consensus of 190 states approved a concrete mandate with a tight timetable for the next two years, with a view to taking a decision on an international ABS regime at the Tenth Conference of the Parties to the CBD in Japan.

In recent years, Germany has also made increasing efforts to involve the users of genetic resources in the ABS process at national level with the aim of jointly seeking realistic ways to implement it. For example, a national ABS website was created. This provides users of genetic resources with comprehensive information in German about the ABS process. It also gives the various user groups in Germany the opportunity to announce details of their implementation steps, e.g. publication by the German Research Association (*Deutsche Forschungsgemeinschaft – DFG*) of a guideline for those applying for research projects covered by the CBD. Moreover, a number of ABS conferences have been run to promote cooperation with individual user sectors, e.g. with botanical gardens and academia, plant breeders and industry (2007). Germany is a signatory to the International Treaty on Plant Genetic Resources in Food and Agriculture (ITPGRFA). Sector-specific implementation of the ABS rules is effected in the course of their German transposition. Use of the SMTA (Standard Material Transfer Agreement) was introduced in the institutions and gene banks concerned (gene bank statutes). Several discussions have also been held with the relevant circles of industry. Implementation is also supported by Internet offerings (FAQs) by the

Federal Ministry of Food, Agriculture and Consumer Protection and the Federal Institute for Food and Agriculture, and by a German translation of the ITPGRFA and the SMTA.

### **1.11 Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention**

Target 11.1: New and additional resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.

Target 11.2: Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20, paragraph 4.

#### **Selected national objectives**

- The German government continues to pursue the goal of contributing 0.51% of gross national income to public-sector development cooperation by 2010, and achieving the UN target of 0.7% by 2015. To this end it is necessary for innovative financing instruments to play a part, in addition to budget funds and further debt relief. In all relevant sectors, German development cooperation caters for conserving and maintaining biological diversity.

Relevant CBD indicators (Decision VIII/15)

- Official development assistance (ODA) to support the Convention
- *Indicator to be developed*

#### **National indicators**

- Annual ODA commitments (total)
- Annual ODA-relevant commitments in the field of biodiversity/rainforests

### **Assessment**



In total, Germany spent €8.98 billion (0.37% of GNP) in 2007 and €9.69 billion (0.38% of GNP) in 2008 on official development cooperation. This corresponds to an increase of 7.9% on 2007. In the field of biological diversity, ODA-relevant commitments increased by 68%, from €125 million in 2007 to €210 million in 2008. Regarding the provision of additional resources by Germany, see Chapter IV No. 4.4.

## **2. Progress in relation to the goals and objectives of the Convention's Strategic Plan**

## **2.1 Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues**

From 19 to 31 May 2008, Germany was host to the Ninth Conference of the Parties to the Convention on Biological Diversity. The Conference succeeded in making significant progress with the global conservation and sustainable use of biological diversity. Many resolutions passed at the Bonn conference set signals for a new era in worldwide nature conservation.

Until the next Conference of the Parties to the CBD in Japan, Germany will give a practical interpretation to the responsible role of the CBD presidency, and will push ahead vigorously with comprehensive implementation of the Bonn decisions in close cooperation with the parties. The “Bonn Agenda for Global Biological Diversity” approved during the ministerial segment provides the roadmap for this. It states the themes where special importance is attached to progress during the German presidency. The adoption of an international ABS regime has high priority. Other focal issues in the German CBD presidency include the further development of the Life Web Initiative for a voluntary worldwide network of protected areas on land and at sea, the mobilisation of financial resources, the detailed assessment of the 2010 target, and the creation of an intergovernmental science-policy interface on biodiversity and ecosystem services (IPBES), comparable to the Intergovernmental Panel on Climate Change (IPCC). Germany will also continue to support the international work on the comprehensive study on The Economics of Ecosystems and Biodiversity (TEEB), which is to be completed by the COP 10. 2010 has been proclaimed International Biodiversity Year. The German government will take advantage of the CBD presidency to make strategic preparations for this event jointly with other international partners.

Germany aims to help strengthen the CBD as a whole, promote the implementation of its objectives, and expand its leading role in international biodiversity issues and in setting the global biodiversity agenda. Germany also strongly advocates efforts to improve cooperation between all biodiversity-relevant international instruments and processes, so that synergies – especially between climate instruments and nature conservation instruments – can be used to resolve conflicts of objectives and ensure more efficient use of financial resources.

Germany will play an active part at regional level in the EU and on a pan-European scale to ensure achievement of the goals of the CBD and further strengthening of the CBD at an international level.

## **2.2 Goal 2: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention**

One central concern of German development cooperation is strengthening the capacity of the partner countries to implement the CBD. In the field of capacity building, the partner countries of German development policy are given support in relation to CBD implementations and negotiations, especially as regards Access and Benefit Sharing (ABS) (focal area according to VII/30: Strategic Plan: Future evaluation of progress towards the 2010 target) and biosafety. Furthermore, German development cooperation supports the conservation of biological diversity through its projects in the field of sustainable management of protected areas and sustainable use of biological diversity, all of which serve to build local capacity.

German development cooperation has yet to develop an indicator for measuring contributions to implementing the CBD strategic plan. However, the following figures could be of interest:

Since 1985, Germany has been giving partner countries assistance in the field of biodiversity as part of its development cooperation. Initially the scale of this assistance was restricted to a few million EUR a year, but in the last two years its volume has doubled from €125 million in

2007 via €210 million in 2008 to more than €260 million in 2009. In addition to bilateral cooperation with partner countries, Germany also supports numerous regional approaches and regional organisation with the aim of capacity building for the conservation and sustainable use of biological diversity in Africa, Asia and Latin America. As well as these projects, development workers and integrated experts within partner country institutions make a contribution to capacity building for the implementation of the CBD. Germany is also the third-largest GEF donor, and in this context it also promotes capacity building in developing countries. At the 9th Conference of the Parties, Germany also proposed the LifeWeb initiative – an initiative for speeding up the implementation and funding of the global network of protected areas on land and sea. LifeWeb is a platform for multilateral cooperation. The aim of the platform is to establish contact between states which are willing to expand and reinforce their system of protected areas and which need international assistance to do so, and donors who are willing to provide additional resources for such efforts. The additional resources provided by Germany are to be channelled through the LifeWeb initiative in particular. Measures outside of protected areas are also possible, provided they serve the interests of protecting forests or other ecosystems.

### **2.3 Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the Convention's objectives**

On 7 November 2007, Germany adopted a National Strategy on Biological Diversity. Thus Germany now has an ambitious and comprehensive strategy for implementing the UN Convention on Biological Diversity (Art. 6 of the CDB). The strategy is actively implemented.

It is not confined to policy on biological diversity in the narrow sense, but embraces a large number of objectives and measures in the field of integrating biodiversity aspects into sectoral and cross-sectoral plans, programmes and policies at national level. The strategy was the subject of comprehensive discussions with all federal ministries responsible for these sectoral policies, and was approved by the Federal Cabinet.

For the sectors agriculture, forestry, fisheries and food, the strategy is supplemented by the Federal Ministry of Agriculture's agro-biodiversity strategy of December 2007 (maintain agro-biodiversity, develop and make sustainable use of potentials in agriculture, forestry and fisheries).

### **2.4 Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to a broader engagement across society in implementation.**

A communication, education and awareness-raising strategy was mounted in the run-up to and context of COP 9 to the CBD in Bonn in May 2008, in order to support the Convention and make it known to the public.

The Federal Environment Ministry provided a wide range of offerings to draw public attention to the importance and benefits of biodiversity and the Convention on Biological Diversity. The ministry's public relations work used not only classic means such as cinema advertising or print ads, but also innovative methods such as educational film matinees and cultural programmes.

In May 2007 – one year before the Ninth Conference of the Parties to the Convention on Biological Diversity in Bonn – the Federal Environment Ministry launched its campaign on

biological diversity. As well as communicating soundly based knowledge, the campaign sought to arouse interest in the topic and generally generate enthusiasm for nature and landscape and nature conservation. To this end it appealed to the public with print and outdoor advertising, competitions for children and juveniles, a schoolchildren's university, educational matinees for teachers, and publications and events. It also included a cinema commercial, a campaign song and the cultural programme of the UN nature conservation conference. Another important element was the nationwide info-bus tour "Underway to Diversity" in autumn 2007. The campaign also received support from all sections of society: representatives of politics, non-governmental organisations, industry, media, academia and culture joined forces in the "Nature Alliance". In their personal sphere and in public they spoke up for the conservation and sustainable use of biological diversity (Internet: [www.bmu.de/42541](http://www.bmu.de/42541), [www.doncato.de](http://www.doncato.de)).

The topic of biological diversity is one of the four focal themes of the Federal Environment Ministry's educational activities. Teaching materials on "biological diversity" are provided free of charge for primary and secondary schools and are in great demand. Up-to-date information and suggestions on educational activities in the field of biological diversity are also regularly to be found in the Federal Environment Ministry's Internet offering "Education Service" ([www.bmu.de/bildungsservice](http://www.bmu.de/bildungsservice)) and in a monthly newsletter.

In 2008 the Federal Environment Ministry's assistance for associations focused especially on supporting projects by environmental and nature conservation associations which either involved direct measures to improve biological diversity or played an active role in raising awareness of the objectives of the CBD and biological diversity.

Also in the context of the CEPA initiative, the Federal Ministry for Economic Cooperation and Development (BMZ) is supporting a number of communication activities in Germany and in partner countries where special attention is focused on the links between biodiversity, development, food security and poverty alleviation, among other things with theme exhibitions, brochures for schoolchildren, poster series on biodiversity and millennium development goals (MDGs) and international (media) action days. Furthermore, the ministry is also supporting the development of communication strategies for the third goal of the CBD, which is important for development policy: access to genetic resources and benefit sharing, ABS).

## **2.5 Objectives relating to the Cartagena Protocol**

For Germany as a member of the EU, the EU legislation on genetically modified organisms (GMO) is either directly applicable or has been transposed into national law. In the EU, the Cartagena Protocol is implemented in legally binding fashion by Regulation 1946/2003 of the European Parliament and of the Council of 15 July 2003 on the transboundary movement of genetically modified organisms. The provisions of the Protocol are also taken into account in other European legal texts on GMOs, such as Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms (Release Directive) and Regulation 1829/2003 on genetically modified foods and animal feeds. In Germany, the above-mentioned provisions of European legislation were transposed into national law by, in particular, the German Genetic Engineering Act (*Gesetz zur Regelung der Gentechnik – GenTG*) and the EC Genetic Engineering Implementation Act (*EG-Gentechnikdurchführungsgesetz – EGGenT-DurchfG*). These also cover requirements relating to handling, transport, packaging and labelling. Requirements relating to imports of GMOs as foods and animal feeds and for processing are also applicable in Germany. The European legal framework includes socio-economic considerations which agree with the requirements of the Protocol.

Transboundary movements of GMOs for the purpose of release into the environment must be notified to the competent national authority and to the EU Commission. Risk assessments

must be performed both for imported GMOs and for those developed in the EU before they are released or put into circulation. The aim is to identify and avoid on a case-by-case basis any adverse effects of GMOs on human health and the environment, whether direct or indirect, immediate or subsequent.

The European Union and its Member States have made contributions to capacity-building initiatives in the field of biosafety. Furthermore, Germany has launched and/or implemented extensive capacity-building initiatives and projects of its own, some in cooperation with international organisations in a variety of countries. Measures have also been taken to raise awareness and to involve the public. The information offered to the public is regularly updated.

Detailed information can be found in the “First Regular National Reports on the Implementation of the Cartagena Protocol“ for Germany and the EU.

### **3. Conclusion**

During the reporting period of the Fourth National Report, the issue of biological diversity grew considerably more important in Germany. The main contributory factors were the Ninth Conference of the Parties to the CBD in Bonn, and the many national and international activities associated with it. This growth in stature in the public debate and political discussions resulted in progress being made with the national implementation of the Convention and of the policy on biological diversity. With new national parks and marine protected areas and the safeguarding of the National Natural Heritage, decisive progress was made in the field of area protection. Targeted species conservation measures made their effects felt. The first survey of the status of nature in the EU found that the conservation status of a few especially endangered species and habitats was already “favourable”. Reintroduction programmes, e.g. for wolves and sturgeons, were successful. The sustainable use of biological diversity and the integration of biodiversity aspects in other policy areas were addressed and supported with a wide range of measures. In future, increased efforts to achieve sustainable use concepts both outside and inside protected areas will be of great importance at an international level. Here there will above all be a need for greater efforts to ensure meaningful synergies between all biodiversity-relevant international instruments and processes. The German government continues to speak up in the CBD for fair and balanced sharing of the benefits arising from the use of genetic resources. Substantial progress has been made in the international negotiation process, but by 2010 there must be further energetic progress with the drafting of concrete negotiating texts for the ABS regime. In the end, the increase in German financial resources will also have an impact on worldwide implementation of the CBD.

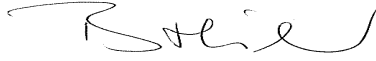
The National Strategy on Biological Diversity, with its objectives and measures in the field of biodiversity policy and of integrating biodiversity aspects in other sectors (e.g. sectoral strategy on agro-biodiversity of the Ministry of Food and Agriculture), is the central instrument for further implementation of the CBD. Obstacles to implementing the strategy arise especially from the fact that Germany is an industrial country with particularly high population density, where there is great competition between claims on space, for example, and the interests of the public good “biological diversity” usually have to be reconciled with a wide range of economic and other environmental interests (e.g. in the field of climate protection). It is therefore a matter of central importance to convince all actors in society of the need to implement the National Strategy on Biological Diversity, and at the same time to demonstrate the economic value of biological diversity and the relevant ecosystem services.

In spite of these numerous national and international efforts, it is foreseeable that not only the global 2010 biodiversity target – a significant reduction in loss of biodiversity by 2010 – will

not be achieved in Germany either, partly because many measures embodied in the National Strategy on Biodiversity will only make themselves felt in the medium and long term. In the next few years, the German government will therefore step up its efforts to ensure the conservation and sustainable use of nature in cooperation with the Länder and the EU and in an international context. The National Strategy on Biological Diversity provides a good action framework for this. Its implementation is intended to make a contribution to halting the loss of biological diversity.

## Annex I – Details of Reporting Party and Preparation Procedure

### A. Reporting Party

Party	Germany
<b>NATIONAL FOCAL POINT</b>	
Full name of institution	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
Name and function of contact person	Nicola Breier, Head of Division
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<b>CONTACT PERSON FOR NATIONAL REPORT (IF DIFFERENT)</b>	
Full name of institution	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
Name and function of contact person	Kilian Delbrück, Head of Division
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E-mail	Kilian.Delbrueck@bmu.bund.de
<b>SUBMISSION OF NATIONAL REPORT</b>	
Signature of person responsible for submitting the National Report	
Date of submission	



## **B. Procedure followed in preparing the National Report**

### **Procedure for preparing the report**

- The draft of the National Report was prepared by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Agency for Nature Conservation, and was discussed and agreed in the two institutions.
- The draft was then sent to all federal ministries concerned for comment. A second draft was prepared on the basis of the comments received.
- This draft was sent in parallel to the Länder and to associations concerned.
- On the basis of the comments the draft was again revised. After consultation within the federal government it was then adopted.
- In parallel with its transmission to the CBD Secretariat, the report was placed on the Internet in German and English.

### **Underlying material**

The material serving as a basis for the report is stated at the relevant places in the report.

## **Annex II – Sources of further information**

BMELV (2007), Agrobiodiversitätsstrategie: Agrobiodiversität erhalten, Potentiale der Land-, Forst- und Fischereiwirtschaft erschließen und nachhaltig nutzen.

[http://www.bmelv.de/cln\\_181/DE/Landwirtschaft/Klima-Umwelt/Biologische-Vielfalt/biologische-vielfalt\\_node.html](http://www.bmelv.de/cln_181/DE/Landwirtschaft/Klima-Umwelt/Biologische-Vielfalt/biologische-vielfalt_node.html)

BMZ Webseite Biodiversität:

<http://www.bmz.de/de/themen/umwelt/biodiversitaet/index.html>

BMZ (2008), Konzept Biologische Vielfalt:

<http://www.bmz.de/de/service/infothek/fach/konzepte/konzept164.pdf>

GTZ Sektorvorhaben Biodiversität:

<http://www.gtz.de/de/themen/laendliche-entwicklung/18459.htm>

GTZ (2008), Biodiversity in German Development Cooperation, prepared by GTZ, commissioned by BMZ, 7th revised edition:

[http://www.gtz.de/de/dokumente/en-biodiv-german\\_development\\_cooperation-2008.pdf](http://www.gtz.de/de/dokumente/en-biodiv-german_development_cooperation-2008.pdf)

### **Annex III – Progress towards the objectives of the global strategy for conserving plant diversity and of the work programme for protected areas**

**TARGET 1: A WIDELY ACCESSIBLE WORKING LIST OF KNOWN PLANT SPECIES, AS A STEP TOWARDS A COMPLETE WORLD FLORA**

#### ***State of implementation and measures taken in Germany***

- For Germany, flora and species lists already exist for nearly all groups of wild plants. However, there is no complete list of fungi to date. Federal Agency for Nature Conservation makes the existing data available as an online information source on wild plants and on Germany's vegetation ([www.floraweb.de](http://www.floraweb.de)). There are also extensive lists of plant genetic resources, which can be searched via the National Inventory of Plant Genetic Resources – PGRDEU ([www.genres.de/pgrdeu](http://www.genres.de/pgrdeu)).
- Coordination of the floristic mapping of Germany was reorganised in 2006 with the foundation of the German Phytodiversity Network (NetPhyD e.V.). The aim is to publish, by 2010, an updated atlas of the distribution and population situation of ferns and flowering plants in Germany.
- German contributions to a provisional world flora are made above all by the work of the Berlin Botanical Garden and Botanical Museum (BGBM). For example, the BGBM manages, maintains and develops the database of the *Global Plant Checklist* (GPC), the preparation of which is directed by the *International Organization for Plant Information*, and places it on the Internet. The GPC data are linked to Species 2000. Species 2000 is a federation of database organisations which produce the *Catalogue of Life* ([www.catalogueoflife.org](http://www.catalogueoflife.org)) in cooperation with the *Integrated Taxonomic Information System*.
- The German national focal point of the GTI has taken over the organisation of the *Global Assessments of Taxonomic Needs and Capacities* and is thus making a crucial contribution to progress in this field.
- A database of expert German-speaking classifiers has been established by the Society for Biological Systematics (*Gesellschaft für Biologische Systematik – GfBS*) and now comprises some 600 experts.

**TARGET 2: A PRELIMINARY ASSESSMENT OF THE CONSERVATION STATUS OF ALL KNOWN PLANT SPECIES, AT NATIONAL, REGIONAL AND INTERNATIONAL LEVEL**

#### ***State of implementation and measures taken in Germany***

- Red Lists exist for nearly all plant groups at national and Land level, though not all have been recently updated (in two Länder it is 15 years since the data were collected (BfN 2008)). There are however great deficits when it comes to algae and moulds/fungi. The national lists are currently being updated by the BfN and are to be published. Further surveys of the endangerment situation exist in the context of Habitats Directive profiles, population survey by the Länder etc.
- One important approach for the global context is the preparation of a list of species for which Germany bears special responsibility, either because their present geographical

range is largely confined to Germany, or because they are isolated and endangered populations (Ludwig & Schnittler 2007, and Ludwig et al. 2007).

- In 2006 a concept for the preparation of Red Lists of cultivated plants was published (Meyer & Vögel 2006).
- A Red List of the endangered native crops in Germany is to be published early in 2010.

TARGET 3: DEVELOPMENT OF MODELS WITH PROTOCOLS FOR PLANT CONSERVATION AND SUSTAINABLE USE, BASED ON RESEARCH AND PRACTICAL EXPERIENCE
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***State of implementation and measures taken in Germany***

- One important basis for achieving this goal is extensive knowledge of functional properties of plant species with regard to various environmental factors. Such characteristics have been made available in the properties database BIOPOP, for example (access via [www.floraweb.de](http://www.floraweb.de)).
- Individual approaches that help to achieve this goal already exist at other levels as well. For example, there are recommendations on conservation for individual plants (e.g. Habitats Directive species) or plant groups (e.g. ferns, Bennert et al. 1999) or on maintenance measures for specific sites. Profiles for individual species are available from [www.floraweb.de](http://www.floraweb.de) and/or [www.bayernflora.de](http://www.bayernflora.de).
- To date there is no national exchange of information on existing and planned species protection programmes, neither is there any coordinated approach or mutual exchange of information for linking *in-situ* and *ex-situ* conservation measures (see also Goal 7).
- Guides to setting up “genetic reserves” and to “*on-farm* management” are to be prepared in an EU project supported by the German Ministry of Agriculture (“An Integrated European In Situ Management Workplan: Implementing Genetic Reserve and On farm Concepts”, AEGRO), which began in October 2007 and is due to run until 2010.
- The model for an expert system for population protection “BIOPOP-Expert” (completed R+D project of the Federal Agency for Nature Conservation) is a first approach to problem-oriented provision of biological and ecological characteristics of plant species for population and biotope management.

TARGET 4: AT LEAST 10 PERCENT OF EACH OF THE WORLD'S ECOLOGICAL REGIONS EFFECTIVELY CONSERVED
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***State of implementation and measures taken in Germany***

- This goal pursues two aims: On the one hand, all ecological regions at global level must be represented to an appropriate extent in protected areas. On the other hand, the effectiveness of the existing protected areas must be examined and improved. Goal 4 corresponds to the overarching Article 8 of the CBD and the associated *Programme of Work on Protected Areas* (PoWPA, COP Decision VII/28) (for details see Annex III, Part B), and is supplemented by Goal 5, which is devoted to the regions of importance for plant diversity at regional and national level.
- If Goal 4 is interpreted literally, it is in particular the ecoregions of global importance that are to be protected. For example, since the 238 important ecoregions of the Earth identified by the WWF lie outside Germany, Germany could only contribute to the

achievement of this goal in the context of international cooperation: WWF Germany devotes itself to protecting 10 of the 238 ecoregions. These 10 regions include the Caucasus, where the German government, alongside the WWF, is active with a comprehensive initiative and is seeking among other things to promote the establishment of cross-border national parks (BMZ 2005, 2006). NABU is also actively supporting international nature conservation projects, e.g. in Armenia and the Caucasus. However, it is not possible here to give a full quantitative assessment of Germany's international engagement in this field.

- If Goal 4 is broken down to the national level, however, it would be necessary to protect 10% of the areas of special ecological importance in Germany: One example of a helpful instrument for identifying areas worth protecting is the *Red List of endangered biotope types* (Riecken et al. 2006). According to this, it is particularly coastal ecosystems (e.g. Wadden Sea, tidal flats, coastal bogs, dunes) and inland wetlands (e.g. springs, low-nutrient lakes, bogs and meadows) that are “threatened with complete extinction”. Two thirds of the biotope types listed in the Red Lists are now protected by law (Section 30 of the Federal Nature Conservation Act).
- At European level, Germany's contributes to the implementation of Goal 4 mainly by complying with the Habitats Directive. Germany has so far notified 4,617 Habitats Directive areas covering a total area of 9.3%. A further contribution can be made by implementing Goal 5.

**TARGET 5: PROTECTION OF 50 PERCENT OF THE MOST IMPORTANT AREAS FOR PLANT DIVERSITY ASSURED**

***State of implementation and measures taken in Germany***

- In Germany, 2.9% of the country's area is designated as nature conservation areas, and the combined area of the 14 national parks in Germany represents about 0.6% of the total. There are also a number of other protected categories, the areas of which overlap to a certain extent.
- The Botanical Nature Conservation Network (see Goal 16) is a new working group which is currently active in Bavaria and Thuringia. It identifies important plant areas on a model basis. It works on the basis of the criteria developed by Plantlife International and Planta Europa.
- The working group “Stützpunktnetz Flora” (Base Network Flora) of the Botanical Nature Conservation Network locates important growth sites of species that are highly endangered at international and national level (Raab & Zahlheimer 2005).

**TARGET 6: AT LEAST 30 PERCENT OF PRODUCTION LANDS MANAGED CONSISTENT WITH THE CONSERVATION OF PLANT DIVERSITY**

***State of implementation and measures taken in Germany***

- In connection with the development of agricultural land, Germany is closely tied to the European directives under the Common Agricultural Policy (CAP). Here the EAFRD Regulation in particular is a crucial factor. Indicators of its implementation are the shares of “high nature value farmland” (HNV), extensive farming, and Natura 2000 areas, in each case as percentages of the total area and of agricultural land (see also the German

government's national strategic plan for the development of rural areas, Federal Ministry of Food, Agriculture and Consumer Protection – BMELV 2006). On an EU comparison, Germany is in the lowest category with approx. 0.5 million hectares of HNV land (corresponding to about 3% of total agricultural land) (European Commission 2006). In connection with Goal 6 of the GSPC, HNV farmland is therefore regarded as an unsuitable indicator for Germany, especially in view of its unsuitable survey method – areas smaller than 20 ha were disregarded in the survey. As far as the other indicators mentioned are concerned, Germany is also currently well below the EU average. This is due partly to more intensive use of farmland and partly to the designation of Natura 2000 areas with their stronger focus on forests and wetlands (Osterburg 2006).

- According to an expert survey in 2007 as part of the R+D project in Germany, approximately 25% of grassland is species-rich grassland, but a large proportion of this is not protected.
- One important pillar for achieving Target 6 is contract-based nature conservation and the EU-cofinanced agro-environmental programmes (Hartmann et al. 2006). In 2007 some 28% of farmland was integrated in agro-environmental measures (BMELV). Both fall within the competence of the Länder, and the way they are handled varies considerably. Since their impact on biological diversity differs greatly from one programme to another, it is difficult to make quantitative and qualitative statements here.
- An item of importance in the forestry sector is the *Forestry and Biological Diversity* strategy developed in 2000 by the federal and Land authorities with the participation of forestry and nature conservation associations (Federal Ministry of Food, Agriculture and Forestry – BMELF 2000). Its implementation is regularly reviewed and documented. Among other things, it envisages further progress with implementing near-natural forest management on as much land as possible. There are also calls to extend contract-based nature conservation to forests as well. Financial resources for this purpose are also available under the EAFRD Regulation.
- In the context of the BIOLOG programme, the Federal Ministry of Education and Research (BMBF) is currently supporting the research project “BIOPLEX – Biodiversity and Spatial Complexity”. This plans to develop a new system of rewards with the aim of creating incentives for biodiversity-promoting and sustainable use of farmland.
- In 2004-2006, as part of the “BioTeam” programme, the Federal Ministry of Education and Research (BMBF) supported the project “FOREST: Biological diversity and its assessment, based on the example of ecological forest conversion in the Solling and Lüneburg Heath regions”.

<p>TARGET 7: 60 PERCENT OF THE WORLD'S THREATENED SPECIES CONSERVED <i>IN SITU</i></p>
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***State of implementation and measures taken in Germany***

- In 2007, as an important basis for implementing the target, the Federal Agency for Nature Conservation published a list showing Germany's responsibility for worldwide conservation of ferns and flowering plants (Ludwig & Schnittler 2007, Ludwig et al. 2007).
- There is no comprehensive nationwide information base on the state of botanical species protection, and in particular on current species protection programmes (Scherer-Lorenzen 2002, von den Driesch et al. 2007); estimates indicate that currently only a fraction of

endangered species are being worked on in conservation programmes (e.g. figures for Bavaria in Berg 2001).

- At EU level, the Community programme on the conservation, characterisation, collection and utilisation of genetic resources in agriculture (EU Regulation 870/2004) is of importance for the implementation of Target 7. In October 2007 this formed the basis for the start of “AEGRO”, an EU project supported by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), which was to draw up instructions for establishing “genetic conservation areas” and for “on-farm management”.

TARGET 8: 60 PERCENT OF THREATENED PLANT SPECIES IN ACCESSIBLE *EX SITU* COLLECTIONS, PREFERABLY IN THE COUNTRY OF ORIGIN, AND 10 PERCENT OF THEM INCLUDED IN RECOVERY AND RESTORATION PROGRAMMES

#### *State of implementation and measures taken in Germany*

- The working group on “*Ex situ* conservation cultures”, which has existed since 2005 in the Botanical Nature Conservation Network, has drawn up a concept for horticultural conservation cultures (Burkart & von den Driesch 2007). Under this concept, which – depending on the possibilities of the individual garden – permits a spectrum ranging from simple conservation cultures to genetically controlled propagation, the plants requiring priority protection are to be conserved and propagated in Germany’s botanical gardens. Work has already started on perfecting and implementing this concept. At present some 10 out of 21 native species requiring priority protection (according to Welk 2002) are being cultivated in botanical gardens, i.e. less than 50%; three species (about 14% of them) are included in reintroduction projects.
- Since 2003 the Loki Schmidt Gene Bank for Wild Plants at the University of Osnabrück Botanical Garden has been storing seed specimens of endangered wild plants of northwest Germany (March 2006: 1300 accessions of 370 species; Borgmann 2007). Some 100 nationally endangered wild species related to our cultivated plants (crop wild relative, CWR) are being conserved in the Gatersleben gene bank (about 19%). However, with an average of 1.8 accessions per species, these are not sufficiently well represented (personal communication, F. Begemann and S. Harrer 2007). A model project for the “Establishment of a German gene bank for wild plants with use potential and a corresponding decentralised national network”, assisted by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), is currently (2009-2012) collecting wild plants with use potential and establishing an *ex situ* conservation network. No overview exists of *ex situ* conservation of non-native endangered plant species.
- At the conference on “The GSPC and its implementation in Germany – action needs and priorities”, held in Bonn in October 2007, a joint working group of gene banks, botanical gardens and nature conservation institutions was set up to cooperate in drawing up a common concept for *ex situ* conservation.

TARGET 9: 70 PERCENT OF THE GENETIC DIVERSITY OF CROPS AND OTHER MAJOR SOCIO-ECONOMICALLY VALUABLE PLANT SPECIES CONSERVED, AND ASSOCIATED INDIGENOUS AND LOCAL KNOWLEDGE MAINTAINED

*State of implementation and measures taken in Germany*

- The *National Specialist Programme for the Conservation and Sustainable use of the Plant Genetic Resources of Agricultural and Horticultural Cultivated Plants* contains a catalogue of measures for *in situ* and *ex situ* conservation and for *on-farm* management of plant genetic resources (PGR). This states that complete registration of the PGRs currently under cultivation and information on their cultivation and utilisation has yet to take place (Federal Ministry for Consumer Protection, Food and Agriculture – BMVEL 2002). The implementation of the specialist programme is coordinated by the consulting and coordination committee for genetic resources of agricultural and horticultural cultivated plants (BEKO, [www.genres.de/pgr/beko/](http://www.genres.de/pgr/beko/)). At present the specialist programme is being reviewed and updated.
- An overview of the *ex situ* stocks of plant genetic resources in Germany is provided by the National Inventory of Plant Genetic Resources PGRDEU, which among other things includes the collection data of the German gene banks such as the *Institute for Plant Genetics and Cultivated Plant Research* (IPK) and/or the Julius Kühn Institute – Federal Research Institute for Cultivated Plants (JKI). PGRDEU contains data on about 155,000 specimens of more than 3,000 cultivated plant species ([www.genres.de/pgrdeu](http://www.genres.de/pgrdeu)). On present knowledge, this covers most of the crops cultivated in Germany. The socio-economically most important plants are represented by between several hundred and several thousand specimens. PGRDEU also contains information on species and their use (list of plant genetic resources), and initial information on *in situ* or on-farm occurrences of plant genetic resources in Germany. The first decentralised *ex situ* gene bank network to be established was the German Gene Bank for Fruit, with decentralised conservation networks for apples, strawberries and cherries. Since 2009 there has also been a German Gene Bank for Ornamental Plants, with a gene bank network for roses and an emerging gene bank network for rhododendrons. The coordination unit for the German Gene Bank for Fruit ([www.Deutsche-Genbank-Obst.de](http://www.Deutsche-Genbank-Obst.de)) is the Julius Kühn Institute – Federal Research Institute for Cultivated Plants. In future, the documentation on the German Gene Bank for Fruit and the incipient German Gene Bank for Ornamental Plants will also be supplied via PGRDEU. In 2009 the German Gene Bank for Roses was founded at the Rosarium Sangerhausen, as the first building block in the German Gene Bank for Ornamental Plants, the decentralised *ex situ* gene bank network for ornamental plants. It will shortly be followed by the second building block, the Gene Bank Network for Rhododendrons. The coordination unit for the German Gene Bank for Ornamental Plants is the Information and Coordination Centre for Biological Diversity (IBV) at the Federal Institute for Food and Agriculture (BLE).
- Under a model project supported by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) for the “Establishment of a reporting and monitoring system for *in situ* conservation of genetic resources of crop wild relatives (CWR) in Brandenburg”, work is currently in progress (2007-2010) on establishing a CWR reporting system that can be transferred to other Länder as a basis for future conservation measures.



- Various private initiatives and associations are engaged in *on-farm* conservation of old and rare crop varieties and the associated traditional knowledge about their cultivation and use (Becker et al. 2002). Examples include the Association for the Conservation of Crop Diversity (*Verein zur Erhaltung der Nutzpflanzenvielfalt e.V. – VEN*), the Association for the Conservation and Recultivation of Crop Plants in Brandenburg (*Verein zur Erhaltung und Rekultivierung von Nutzpflanzen in Brandenburg e.V. – VERN*), the Pomologists' Association (*Pomologenverein e.V.*) and other conservation initiatives.

<p><b>TARGET 10: MANAGEMENT PLANS IN PLACE FOR AT LEAST 100 MAJOR ALIEN SPECIES THAT THREATEN PLANTS, PLANT COMMUNITIES AND ASSOCIATED HABITATS AND ECOSYSTEMS</b></p>
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***State of implementation and measures taken in Germany***

- On the Internet, the Federal Agency for Nature Conservation provides a handbook on the 40 most important invasive plant species in Germany and recommendations on how to contain them ([www.neophyten.de](http://www.neophyten.de)). These recommendations can serve the competent authorities as a basis for management plans, and to some extent they are already being implemented.
- The Crop Protection Act (*Pflanzenschutzgesetz*) takes account of invasive organisms that are capable of causing damage to crops. The *European Crop Protection Organisation* (EPPO) has compiled a list of harmful organisms, and on the basis of this the EU has enacted a plant quarantine directive. This is implemented in Germany under the Crop Protection Act. The competent authorities here are the Julius Kühn Institute – Federal Research Institute for Cultivated Plants, the crop protection services of the Länder, the crop protection offices at local level, and the customs authorities.
- Research activities relating to alien species are coordinated and publicised by the expert group AG NEOBIOTA founded in 1999.
- On the question of how to deal with invasive species in Germany, experts are increasingly coming to the conclusion that the focus should be on preventing the introduction and distribution of invasive species. Such measures are currently being taken on a voluntary basis. For example, voluntary codes of behaviour have been drawn up by the Botanical Gardens Association (*Verband Botanischer Gärten e.V.*) and the Central Horticultural Association (*Zentralverband Gartenbau*).

<p><b>TARGET 11: NO SPECIES OF WILD FLORA ENDANGERED BY INTERNATIONAL TRADE</b></p>
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***State of implementation and measures taken in Germany***

- Since 1976, Germany has been a party to CITES (Convention on the International Trade in Endangered Species), and has supported its implementation. At European level, CITES is implemented through European legislation on species protection (EU Directive 338/97). In this context the EU has already imposed import bans on 50 plants which are used in the country of origin in a way that is incompatible with nature conservation.
- Moreover, the Federal Nature Conservation Act (*Bundesnaturschutzgesetz*) and Federal Species Protection Ordinance (*Bundesartenschutzverordnung*) go beyond the inter-

national regulations by placing under protection animal and plant species whose existence is threatened by human activities.

- Increasing efforts are being made to introduce the model of sustainable use into the trade in endangered species. To this end the Federal Agency for Nature Conservation, in collaboration with WWF Deutschland and the IUCN Medicinal Plant Specialist Group, has drawn up in Germany an International Standard for Sustainable Collection of Medicinal Plants (ISSC-MAP) (see Target 12).

TARGET 12: 30 PERCENT OF PLANT-BASED PRODUCTS DERIVED FROM SOURCES THAT ARE SUSTAINABLY MANAGED
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***State of implementation and measures taken in Germany***

- The market share of organic farming products is steadily growing, and for individual products it has already reached double figures ([www.oekolandbau.de](http://www.oekolandbau.de)). On average, the share for 2005 is estimated to have been 3% ([www.boelw.de](http://www.boelw.de)).
- In Germany, all forests are sustainably managed in accordance with the requirements of the forestry acts at national and Land level and the relevant nature conservation provisions. As a result, wood produced in German forests comes from sources that are sustainably managed.
- Under the German government's sustainability strategy and the German implementation of the UN Decade for Sustainable Development, numerous public relations campaigns for sustainably produced products are currently being run by the German government and NGOs.
- As one of the most important trading centres for products of plant origin, Germany is playing an active part in introducing the model of sustainable use into the trade in endangered species. To this end the Federal Agency for Nature Conservation, in collaboration with WWF Deutschland and the IUCN Medicinal Plant Specialist Group, has drawn up an International Standard for Sustainable Collection of Medicinal Plants (ISSC-MAP).

TARGET 13: THE DECLINE OF PLANT RESOURCES, AND ASSOCIATED INDIGENOUS AND LOCAL KNOWLEDGE, INNOVATIONS AND PRACTICES THAT SUPPORT SUSTAINABLE LIVELIHOODS, LOCAL FOOD SECURITY AND HEALTH CARE, HALTED
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***State of implementation and measures taken in Germany***

A background paper on Target 13 prepared by FAO, *People and Plants International* and *Biodiversity International* (see [www.cbd.int/doc/?mtg=TEMPC-02](http://www.cbd.int/doc/?mtg=TEMPC-02)) states that the target focuses specifically on the status of plants which are used by local communities. Thus in this form the target does not apply to Germany, since today there are no local subsistence economies that depend entirely on specific wild or crop plants. Germany's contribution to this target therefore lies above all in its activities at international level, and especially in the field of development cooperation:

- The Federal Ministry for Economic Cooperation and Development has drawn up various concepts for development cooperation, such as the sectoral concept "*Forests and Sustainable Development*" (BMZ 2002) or the "*Concept for Development Cooperation*

with *Indio population groups in Latin America*” (BMZ 1996). These also include the conservation of plants used by indigenous peoples. On this basis Germany has funded and still funds relevant projects in various developing countries, e.g. those run by the GTZ (GTZ 2004).

- Other institutions such as religious project agencies or NGOs are running projects in various countries that include the aspect of biodiversity conservation. However, there is as yet no comprehensive overview of such projects.

TARGET 14: THE IMPORTANCE OF PLANT DIVERSITY AND THE NEED FOR ITS CONSERVATION INCORPORATED INTO COMMUNICATION, EDUCATIONAL AND PUBLIC-AWARENESS PROGRAMMES
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***State of implementation and measures taken in Germany***

- Environmental awareness in Germany is the subject of regular studies commissioned by the Federal Environment Ministry ([www.bmu.de](http://www.bmu.de)). The 2006 study revealed that, while the German public’s awareness of the problem of declining biological diversity has increased in recent years, only a minority are prepared to accept personal cuts or restrictions to help tackle the problem (Kuckartz et al. 2006). The latest report on youth and nature (*Jugendreport Natur*) (Brämer 2006) shows an increasing alienation from nature, and in some cases totally mistaken ideas about nature conservation and sustainable use (“Bambi syndrome”). It indicates a particularly dramatic need for action in the field of awareness raising.
- The Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) conducted a study on “Communication about agro-biodiversity – Prerequisites for and demands on an integrated communication strategy on biological diversity and genetic resources in agriculture, forestry, fisheries and the food industry (including horticulture)”. This drew up concrete proposals for improving communication (Kleinhückelkotten et al. 2006).
- There is a dense network of non-school educational establishments (e.g. biostations, regional environment centres, nature conservation and environmental protection academies), which offer services not only for children and juveniles, but also for all age groups. The national association of environmental education centres (*Arbeitsgemeinschaft Natur- und Umweltbildung e.V. – ANU*) is an umbrella association that plays an active part in improving educational offerings throughout Germany and reaching a wider audience ([www.umweltbildung.de](http://www.umweltbildung.de)).
- Germany’s activities in connection with the UN Decade “Education for Sustainable Development” marked a milestone. This initiative made it possible to unite the numerous activities under a single roof and focus greater public attention on them (633 award-winning Decade projects as of August 08).
- A project supported by the Federal Agency for Nature Conservation (BfN) uses practice-oriented workshops to familiarise conservationists and environmentalists with the guiding principles of education for sustainable development ([www.otterzentrum.de](http://www.otterzentrum.de)). Another R+D project currently in progress seeks to work out ways and means of making better use of the potential of leisure facilities (e.g. museums, zoos, gardens) in the field of informal education about nature and the environment ([www.BildungNatur.de](http://www.BildungNatur.de)). On an international

comparison, Germany has not so far done enough to exploit this potential (e.g. Wohlers 2003, Freericks et al. 2005).

- Within the Botanical Gardens Association (Verband Botanischer Gärten), the working group on Education (AG Pädagogik) is concerned with educational work in botanical gardens. At present, however, only about 15% of botanical gardens have seconded teachers and/or permanent educational employees (Hethke 2007). Work in many botanical gardens is basically characterised by understaffing in all areas and a lack of financial resources and material facilities (Pieper, 1997).
- Communication activities are important approaches, for example in the campaign ‘Life needs Diversity’ run by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. They may relate to regional product marketing (e.g. the sheep breed ‘Diepholzer Moorschnucke’), the Bio-Siegel label and other labels for sustainable use or International Day for Biological Diversity (World Biodiversity Day) on 21 May which has been celebrated since 2001, or the GEO Species Diversity Day.
- Teaching material on biological diversity is available from the German Environment Ministry’s website.
- Information material on agro-biodiversity is provided by the Information and Coordination Centre for Biological Diversity (IBV) of the Federal Institute for Food and Agriculture (BLE) via the genetic resources information system ([www.genres.de](http://www.genres.de)).

**TARGET 15: THE NUMBER OF TRAINED PEOPLE WORKING WITH APPROPRIATE FACILITIES IN PLANT CONSERVATION INCREASED, ACCORDING TO NATIONAL NEEDS, TO ACHIEVE THE TARGETS OF THIS STRATEGY**

#### ***State of implementation and measures taken in Germany***

- In Germany, the needs analyses necessary for creating specialist capacity in the field of nature conservation are largely still outstanding.
- To date, initial approaches have only been made in taxonomy. The German focal point of the *Global Taxonomy Initiative* (GTI) is currently taking part in a global survey of taxonomic capacity and needs ([www.gti-kontaktstelle.de](http://www.gti-kontaktstelle.de)). In 2006 the GTI focal point, together with the Association of German Biologists (*Verband deutscher Biologen – vdbiol*) and relevant scientific societies, launched the “Taxonomy Initiative – Endowed Professorships for Germany” ([www.taxonomie-initiative.de](http://www.taxonomie-initiative.de)). This initiative is intended to provide an answer to the “knowledge erosion” currently taking place in Germany. Owing to lack of educational units (chairs, professorships, etc.), it is not possible to pass the comprehensive knowledge on to the next generation of researchers because they are not being trained. The initiative is therefore addressed to the federal government and Land governments, and calls for the establishment of endowed professorships for species-specific biodiversity research.
- At European level, the EDIT project (European Distributed Institute of Taxonomy; [www.e-taxonomy.eu](http://www.e-taxonomy.eu)) started in 2006 is of particular importance. This seeks to network experts in the field of taxonomy, and explicitly sets out to share knowledge and experience and to strengthen scientific and technical capacities.
- The German government supports basic research into biodiversity via the German Research Association (*Deutsche Forschungsgemeinschaft – DFG*), and also partly

through research by the Federal Ministry of Education and Research (BMBF). One central research project in the basic research sector is the Global Biodiversity Information Facility (GBIF), an international development cooperation establishment which aims to make scientific data and information on biodiversity available in digital form via the Internet, free of charge and on a long-term worldwide basis.

- In 1999 the Federal Ministry of Education and Research started the programme “Biodiversity and Global Change” (BIOLOG). This research programme conducts research into biological diversity and develops strategies for its sustainable use. The programme is planned to run for nine years. The research projects are grouped in research networks and focus on Central Europe and Africa. The research projects in Africa are grouped in the research network BIOTA (Biodiversity Monitoring Transect Analysis in Africa), which is intended to create the basis for sustainable management of biological diversity in Africa.

TARGET 16: NETWORKS FOR PLANT CONSERVATION ACTIVITIES ESTABLISHED OR STRENGTHENED AT NATIONAL, REGIONAL AND INTERNATIONAL LEVELS
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***State of implementation and measures taken in Germany***

In Germany, the idea of networking in botanical species protection is still very young. For example, the European network for botanical nature conservation, *Planta Europa*, complained that there was a lack of coordination and communication among the active and responsible people in botanical nature conservation, and also that the links with international initiatives were inadequate (M. Kretschmar 2007, personal communication). The actors themselves also feel a great need for networking and interaction (e.g. Ristow 2006). At the end of 2005 this led to the creation of the network for botanical nature conservation (Berg et al. 2006). At present this network primarily unites botanical scientists, the federal and Land authorities, and the honorary and freelance individuals active in the field of practical nature conservation.

Within this network there are a number of working groups that focus specifically on implementing individual targets of the GSPC; see also ([www.florenschutz.de](http://www.florenschutz.de)). The German Phytodiversity Network (*Netzwerk Phytodiversität Deutschlands e.V. – NetPhyD*), as a scientific forum for botanists and nature conservation researchers, is closely connected with the Network for Botanical Nature Conservation. Examples of other scientific forums include *Diversitas Deutschland*, the GTI focal point and GBIF-Deutschland aktiv.

The year 2005 saw the founding of the German Flora Research Society (*Gesellschaft zur Erforschung der Flora Deutschlands – GEFD*) with the aim of promoting floristic and botanical research into Germany’s vascular plants.

At present a communication platform for the Botanical Nature Conservation Network is being developed as part of an R+D project by the Federal Agency for Nature Conservation (BfN).

Through its activities in the recent past, Germany has already taken a significant step towards achieving Target 16. However, the existing network approaches have to be fleshed out and speeded up, which means there is a need for extra staff. Communication with other GSPC-relevant sectors (agriculture and forestry, politics, education) still tends to be poor.

The major German research museums, which together with botanical gardens mainly record and inventarise known species, have joined forces in the consortium of German Natural Science Research Collections” (*Deutsche Naturwissenschaftliche Forschungssammlungen“ – DNFS*). The resulting network is the largest research infrastructure of its kind in the world.

This network is itself networked worldwide via various taxonomy databases, such as the Global Biodiversity Information Facility (GBIF).

## **B. Progress in relation to the objectives of the work programme for protected areas**

This section lists important national objectives relating to the central targets of the work programme for protected areas, and describes activities for achieving these objectives. It also refers to the Thematic Report on Protected Areas which was prepared in August 2007.

### **1.) National and regional systems of protected areas, especially Natura 2000**

#### **Objectives from the National Strategy on Biological Diversity:**

*By 2010, the development of the European network Natura 2000 is complete.*

#### **Protected areas in Germany**

The main building blocks of the German network of protected areas and of a supra-regional biotope network are nature conservation areas, national parks, biosphere reserves, landscape reserves and nature parks, and the Natura 2000 areas (see also Thematic Report on Protected Areas, Items 1.1.a), d) and e, and also Chapters II 2.2.1 and IV 1.1 of the Fourth National Report). Since the Thematic Report on Protected Areas (August 2007), the number and size of the protected areas have increased as follows:

- Nature conservation areas: + 260 areas, + 54,943 ha (as of 31.12.2007),
- Biosphere reserves (under Land legislation): + 3 areas, + 148,201 ha (as of April 2009); two of these have since been recognised as UNESCO biosphere reserves, and an application has been submitted for the third. One area (Bavarian Forest) has relinquished its UNESCO label, as it proved impossible to implement the establishment of a development zone called for by the national committee (-13,300 ha).
- Nature parks: + 5 areas, + 600,000 ha (as of January 2009),
- Natura 2000 areas: + 162 areas, + 1.8% terrestrial area and + 4% tidal flats, water, Wadden Sea and marine areas (incl. Lake Constance).

The current numbers and sizes of the protected areas in Germany can be seen from the following table. It must be borne in mind that there are considerable overlaps between the various protected area categories, and some of them are of identical extent. It is therefore misleading or incorrect simply to add together the areas shown for the individual types of protected areas. For example, the core zones and buffer zones of biosphere reserves are frequently designated as nature conservation areas. Nature parks consist to a large extent of landscape reserves and a (usually smaller) proportion of nature conservation areas. Many areas protected under the Habitats Directive and the Birds Directive are also nature conservation areas, national parks, core and buffer zones of biosphere reserves or landscape reserves.

*Table: Protected areas in Germany*

<b>PROTECTED AREA CATEGORY</b>	<b>Type</b>	<b>Number</b>	<b>Area [ha]</b>	<b>Percentage of land area [%] 1)</b>	<b>Figures for</b>
Nature conservation area	§ 23	8,125	1,240,345 <sup>2)</sup>	3.5 <sup>2)</sup>	31.12.2007
National park	§ 24	14	194,209 <sup>2)</sup> 962,051 <sup>3)</sup>	0.54 <sup>2)</sup>	4/2009
Biosphere reserves	§ 25	16	1,206,951 <sup>2)</sup> <b>1,873,911<sup>3)</sup></b>	3.4 <sup>2)</sup>	4/2009
Landscape reserve	§ 26	7,239	9,876,036 <sup>2)</sup>	28 <sup>2)</sup>	31.12.2007
Nature park	§ 27	99	<b>9,159,661</b>	25.5 %	1/2009
Habitats Directive area under 92/43/EEC	§ 32, 33	4,622	3,313,083 <sup>4)</sup> 2,121,111 <sup>5)</sup>	9.3 <sup>4)</sup>	9/2008
Bird sanctuary under EC Directive 79/409/EEC	§ 32, 33	736	3,989,554 <sup>4)</sup> 1,976,975 <sup>5)</sup>	11.2 <sup>4)</sup>	11/2008

- 1) Basis: Statistical land area (without tidal flats and marine areas)
- 2) Without tidal-flat and water areas of North Sea and Baltic Sea
- 3) Including tidal-flat and water areas of North Sea and Baltic Sea
- 4) Terrestrial areas
- 5) Tidal-flat, water, Wadden Sea and marine areas (incl. Lake Constance)

## **Natura 2000**

The Natura 2000 network of protected areas forms a coherent, representative network. However, the EU nature conservation directives do not cover the entire spectrum of endangered biotope types and species at national level. (See also Thematic Report on Protected Areas (Appendix 2) Item 1.1.a), page 1-2 and Item 1.1.d., page 4-5).

Germany completed the selection of the Habitats Directive areas and their notification to the EU in February 2006. The notification of Birds Directive areas as the second component of the Natura 2000 network has been expanded by considerable supplementary notifications. For Habitats Directive areas, a formal designation / declaration as a protected area is required within 6 years after inclusion of the areas in the Community list (last German area included at the end of 2007). In Germany, this is the responsibility of the Länder, including the form of legal safeguard (protected area category or comparable provisions). According to the national report on the implementation of the Habitats Directive (Art. 17) for the period 2000-2006, this protection has so far been implemented for 26% of the areas. The German Natura 2000 network comprises a total of 5,263 areas, which together make up about 15.3% of Germany's terrestrial area. In addition, 45% of the marine area is designated as Natura 2000 areas.

In the marine sector, Germany was in 2004 the first EU member state to fully discharge its Natura 2000 obligations under the Habitats Directive and Birds Directive in the EEZ as well by notifying 10 marine protected areas in the German EEZ of the North Sea and Baltic Sea. Here about 30% of the sea consists of Natura 2000 areas. For the two Birds Directive areas in the EEZ, the first two protected area ordinances were drawn up having regard to these



requirements and the areas were designated as nature conservation area<sup>2</sup>. Similar activities are planned for the Habitats Directive protected areas. The Länder have themselves designated large areas of the territorial waters as Natura 2000 areas.

### **HELCOM and OSPAR**

In 2008 Germany officially notified further MPAs for the joint network of Marine Protected Areas (MPAs) that is to be completed and effectively managed by 2010 under the joint ministerial decision of 2003 by HELCOM und OSPAR, which is to be ecologically coherent with the Natura 2000 network. In the German North Sea there are now 7 OSPAR MPAs with a total area of 1,664,400 ha. The German Baltic Sea currently has 12 MPAs (Baltic Sea Protected Areas, BSPAs) with a total area of 478,000 ha. Since some of these marine protected areas include small proportions of terrestrial coastal areas, this results in about 30% of the German Baltic Sea being covered by BSPAs. In the German North Sea about 40% is covered by the OSPAR MPAs. Most of these MPAs are managed in accordance with the requirements of the EU Habitats and Birds Directives. The national parks among the OSPAR and HELCOM protected areas have management plans. Germany is seeking to notify further HELCOM MPAs by 2010.

### **Protected areas on the High Seas**

At the Ninth Conference of the Parties to the CBD in Bonn (May 2008), considerable progress was made in the field of “Marine biodiversity conservation” with the adoption of criteria for the selection of protection-worthy areas on the high seas, and an important step was taken towards establishing a worldwide network of marine protected areas by 2012. To implement the relevant decisions, Germany is supporting a project managed by IUCN which will bring together knowledge and data from research institutions around the world and analyse them on the basis of the criteria adopted at COP 9.

## **2.) Ecological linking / biotope network**

### **Objectives from the National Strategy on Biological Diversity:**

*By 2010, Germany has a representative and functional system of interlinked biotopes covering 10% of its territory. This network lends itself to permanently protecting the habitats of wild species and is an integral component of a European system of interlinked biotopes.*

Various initiatives and assistance programmes exist at national level to link the protected areas and safeguard a nationwide biotope network:

the assistance programme “Major nature conservation projects / Riparian strip projects”, the transfer of the National Natural Heritage land including the land of the German Green Strip, and the nomination of the Wadden Sea and selected beech forest areas as world heritage sites (see also Item 1.1.h, page 7-8 of the Thematic Report on Protected Areas).

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2 Ordinance of 15 September 2005 on the designation of the nature conservation area “Eastern German Bight”\*) – Federal Law Gazette Vol. 2005 Part I No. 59, issued in Bonn on 23 September 2005, and Ordinance of 15 September 2005 on the Designation of the Nature Conservation Area “Pomeranian Bight”\*) – Federal Law Gazette, Vol. 2005 Part I No. 59, issued in Bonn on 23 September 2005

Since 1979 the German government has been supporting “major nature conservation projects” through the assistance programme for establishing and safeguarding natural and landscape areas that are in need of protection and are of representative importance for the nation as a whole. In this way the government is making an important contribution to the conservation of biological diversity and the National Natural Heritage in Germany. The projects are selected on the basis of the following criteria: representative nature, large area, nearness to nature, endangerment and model character. A major objective of the programme is to permanently safeguard the core zones of the projects, preferably by designating nature conservation areas. To date, the government has assisted 72 major nature conservation projects with a total of more than €390 million, and has thereby permanently safeguarded a total core zone area of 2.750 square kilometres.

The National Natural Heritage includes outstanding, characteristic landscapes for which Germany has a special responsibility at national, European and global level. In the coalition agreement for the 16th term of the German Bundestag, the government parties agreed that federally owned nature conservation areas of a representative character for the state as a whole would be transferred free of charge to a federal foundation or assigned to the Länder, associations and other foundations. A total of 125,000 hectares is earmarked for this purpose. The future recipients of the land have been identified or decided for the first 100,000 hectares. A further 25,000 ha is reserved for land that ceases to be used in future. For about 57,000 ha, the conditions for long-term safeguarding of the National Natural Heritage have already been contractually agreed; the first parcels of land have been handed over to their new owners.

The federal land intended for such transfers is situated, for example, in national parks, biosphere reserves, federal large-scale nature conservation projects, post-mining landscapes, Natura 2000 areas, or in the “Green Strip”, the strip along the former border between the two Germanies, which is the longest terrestrial biotope network in Germany.

The objectives on the land transferred to the National Natural Heritage embrace in particular the conservation and development of natural forests and near-natural shore, river meadow and water body areas (including coastal flooding areas and peatlands), and the maintenance and use of valuable open-space ecosystems. The new owners in particular are now responsible for their further development: In consultation with the Federal Environment Ministry and the Federal Agency for Nature Conservation, they lay down maintenance and use strategies designed to achieve the ambitious targets and visions. They also promote the emergence of wilderness areas, having appropriate regard to economically and socially viable framework conditions.

To strengthen coherence between existing protected areas, Germany is pursuing projects for establishing ecological networks (biotope networks) at national and European level. These include the identification of core zones and network corridors of national and international importance and of re-networking potential along federal transport routes (e.g. by means of green bridges) identified in the course of research and development projects currently in progress. Furthermore, the scientific basis for appropriate design of network corridors at landscape level is to be determined in the context of planned research projects. This also being done in the light of the fact that the establishment of ecological networks is regarded as a adaptation strategy for mitigating climate change impacts.

At European level Germany continues to play a major role in the “European Green Belt” initiative. One central objective of this initiative consists in the conservation and/or development of a transnational corridor to link important protected areas in Europe from the Barents Sea to the Black Sea and Adriatic. These activities fit into the Council of Europe initiative for establishing a Pan-European Ecological Network (PEEN). The Green Strip in Germany and the Green Belt in Europe are being further developed as a backbone of the national and European biotope network to strengthen the coherence of the protected area network. This is being done by supporting sustainable development in the regions concerned (e.g. model project (T+D) “Green Strip Experience” in Germany (see also B.2.9. below) or Interreg III B project “Green Belt” in Central Europe).

Regarding the German Green Strip and European Green Belt initiatives, see also Items 1.1.h (p. 7-8) and 1.3 (p. 11-12) of the Thematic Report on Protected Areas.

### **3.) Protection of habitat types**

#### **Objectives from the National Strategy on Biological Diversity:**

*By 2010, the decline in endangered habitat types has been halted. Thereafter, those biotope types which are under threat of complete destruction or severely endangered according to the Red Lists will increase again in terms of their area and number, degradations have been halted, and regeneration has begun.*

*By 2020, all stocks of habitat types (in accordance with Annex I of the Habitats Directive), protected (§ 30 of the Federal Nature Conservation Act (BNatSchG)) and endangered biotope types as well as those for which Germany has a particular responsibility, or which are particularly significant for migratory species, indicate a significant improvement in their conservation status compared with 2005, in those cases where a good conservation status has not yet been achieved.*

The decline in endangered habitat types is primarily halted by the designation and management of the German protected areas. In Germany, the main focus of protection in the Natura 2000 network is on rare and endangered habitat types and the habitat types characteristic or representative of Central Europe. Annex I to the Habitats Directive lists 95 habitat types for protection in Germany for which Natura 2000 areas have been designated. The following habitat types and ecosystems are well covered by the Directive:

- Marine and coastal ecosystems (nearly all coastal biotope types and a range of marine biotope types are covered by the Directive)
- Central European beech forests in all their regional, site-specific forms (acid to basic soils) and altitude zones (including mixed mountain forest with spruce and fir)
- Flowing waters with all important river and stream types (but without complete river meadow complexes, e.g. not including alder swamp forests, but including hardwood and softwood riparian forests)
- Standing waters of all trophic stages from oligotrophic to eutrophic, including dystrophic bog waters
- Alpine ecosystems with in particular the narrow German strip of the limestone Alpine fringe: they are well represented in Natura 2000, mainly thanks to large protected areas.

Grassland ecosystems are well covered for dry grassland and medium grassland in the case of hay meadows (with gaps in the case of extensively grazed pasture). In eutrophic moist to wet grasslands (especially *Calthion* or marsh marigold) there are highly endangered biotope types that are not covered by the protection of the Habitats Directive. Peatlands (raised bogland, transitional and lowland bogs) are well covered; only lowland bogs with acid soil are not protected by the Habitats Directive.

To supplement the Natura 2000 network, rare and endangered habitat types and typical national and regional habitat types are protected in the other protected areas of the German protected area system (see Item 2). Some biotope types and geomorphological features enjoy special blanket protection under Section 30 of the Federal Nature Conservation Act (*BNatSchG*) (see also Thematic Report on Protected Areas (Appendix 2) Item 1.1.c), pages 3-4).

The second national report pursuant to Art. 17 of the Habitats Directive (reference period 2000 – 2006) assesses for the first time the conservation status of the habitat types in Annex I to the Habitats Directive. An overview of the results is published in: Balzer, S., Ellwanger, G., Raths, U., Schröder, E. & Ssymank, A. (2008): Verfahren und erste Ergebnisse des nationalen Berichts nach Artikel 17 der FFH-Richtlinie. - *Natur und Landschaft* 83 (3): 111-117. Also, the provisional results of the Community assessment by the European Environment Agency can be viewed at <http://biodiversity.eionet.europa.eu/article17>.

#### **4.) Protected area management**

##### **Objectives from the National Strategy on Biological Diversity:**

*By 2020 a well-functioning management system for all large protected areas and Natura 2000 areas has been established.*

In roughly half of Germany's national parks, there are management plans in place (national park plans or maintenance and development plans) in which the maintenance and development objectives and the measures for achieving the national park objectives have been set by the competent nature conservation authorities. About 40% of the biosphere reserves have prepared a framework concept which coordinates existing management plans and stakes out the management system in the various zones of the reserves.

Seven out of 13 Länder in Germany make it a statutory requirement to draw up nature park plans. One Land calls for the preparation of an "action programme". Three other Länder recommend the preparation of a nature park plan. At present some two thirds of the nature parks in Germany have nature park plans or the rudiments of such plans. Since nature park plans are an important management instrument, the Federal Agency for Nature Conservation used Federal Environment Ministry resources to fund a research and development project for "optimised implementation of nature park plans" from 2006 to 2008. The project made a systematic analysis of existing deficits in nature park planning and their causes, and drew up a practical guide with action recommendations (including checklists) for optimising plan preparation and implementation.

Nature park plans are also an important part of the "Quality Criteria for German Nature Parks". In 2006 this list of criteria with 41 groups of questions about the fields of activities of

the nature parks was adopted by the German Nature Parks Association (Verband Deutscher Naturparke e.V.), in cooperation with Europarc Deutschland e.V., as part of a research and development project supported by the Federal Agency for Nature Conservation with funds from the Federal Environment Ministry. The “Nature Parks Quality Offensive” which was subsequently started by the Verband Deutscher Naturparke e.V. has so far resulted in 63 of the 99 nature parks in Germany taking part by submitting to a review by “quality scouts” on the basis of the list of criteria. Of these, 58 nature parks were labelled “Quality Nature Park” and 5 as “Partner of the Quality Offensive”.

The preparation of maintenance and development plans is also a compulsory basis for management in major nature conservation projects/riparian strip projects (see Item 2).

For the Natura 2000 areas, Art. 6(1) requires that the necessary measures be taken to achieve and safeguard the protection objectives. To this end the member states are – where necessary –to draw up management plans or integrated management plans which define these nature conservation maintenance and development objectives and measures for implementing them. At present, the preparation of management plans for Habitats Directive areas is taking different forms in different Länder. In view of the large number and size of the areas notified, the Länder have not yet succeeded in preparing management plans for all areas. Although there are differences in approach, the public is usually involved and the plans are based on scientific studies. An overview of progress on management plans can be found in: Ellwanger, G. & Schröder, E. (Eds.) (2006): Management von Natura 2000-Gebieten. Erfahrungen aus Deutschland und ausgewählten anderen Mitgliedsstaaten der Europäischen Union. - Natursch. Biol. Vielf. 26, 302 p., Bonn (see also Thematic Report on Protected Areas (Appendix 2), Item 1.4, pages 14-15).

For the German biosphere reserves, criteria have been developed and adopted for recognising and reviewing UNESCO biosphere reserves (<http://www.bfn.de/fileadmin/MDB/documents/themen/internationalernaturschutz/BroschKriterienendfass31.10.07.pdf>). These criteria are used in conjunction with the International Guidelines not only to examine applications for the recognition of new biosphere reserves, but also to make regular ten-yearly reviews of the development and management of existing biosphere reserves.

## **5.) Monitoring and evaluation**

Art. 11 of the Habitats Directive requires the establishment of a system for monitoring the conservation status of the species and habitat types in the Habitats Directive. For this purpose the federal and Land authorities in Germany have jointly developed a concept and methods. At present, the test areas are being set up by the Länder. In future the data recorded both inside and outside the Natura 2000 areas will be available every 6 years. They are a crucial element in the report which is to be submitted to the EU under Art. 17 of the Directive.

The federal and Land authorities have however agreed that for bird monitoring they will use data from the Federation of German Avifauna Experts (*Dachverband Deutscher Avifaunisten*).

These population censuses, together with the protection requirements for the Habitats Directive and Birds Directive areas, create the basis for setting priorities for the specific measures to improve conservation status.

Since the beginning of 2008, work has been in progress under a research and development project by the Federal Agency for Nature Conservation on developing indicators for integrated monitoring on the major German protected areas (national parks and biosphere reserves) and a suitable monitoring system. This includes not only ecological, but also economic and sociological indicators.

For the task of reviewing and further developing the management of national parks, work started in 1985 on developing quality criteria and standards for the German national parks. This research and development project, run by the Federal Agency for Nature Conservation with financial assistance from the Federal Environment Ministry, was carried out by EUROPARC-Deutschland and completed in 2008. The quality criteria and standards developed, and the indicators based on them, form the basis for evaluating the German national parks. It is planned to use this system to evaluate all German national parks by 2010.

Special guidelines have been drawn up for managing the marine protected areas under HELCOM and OSPAR, (HELCOM Guidelines for Management of Baltic Sea Protected Areas, see [http://www.helcom.fi/Recommendations/guidelines/en\\_GB/guidel\\_15\\_5\\_mgt/](http://www.helcom.fi/Recommendations/guidelines/en_GB/guidel_15_5_mgt/); OSPAR Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area, see OSPAR Agreement 2003/18) – see also Thematic Report on Protected Areas (Appendix 2), Items 4.1 b) and c), pages 38-39.

## **6.) Wilderness areas**

### **Objectives from the National Strategy on Biological Diversity:**

*By the year 2020, throughout 2% of Germany's territory, Nature is once again able to develop undisturbed in accordance with its own laws, and areas of wilderness are able to evolve. A large proportion of wilderness areas are extensive regions.*

At present, nature in Germany can develop undisturbed in the core zones of the national parks and biosphere reserves and in the natural forest reserves and protected forests. This is a total of 478,376 ha, of which 178,227 ha is land (= 0.48% of Germany's land area) and 300,149 ha is water and tidal flats. Particularly the core zones of the national parks, some 423,773 ha, including 123,773 ha land area (= 0.35% of Germany's land area) and 300,000 ha of water and tidal flats, are mostly of considerable extent.

Furthermore, disused and existing army training grounds and post-mining landscapes are also to be left wholly or partly to their own devices (provided this does not conflict with Habitats Directive requirements). The same applies to parts of the land already transferred or due to be transferred to the Länder, the DBU or other nature conservation organisations in the context of the National Natural Heritage (see next Item 2). Since there is currently a lack of large-scale unused wilderness areas in Germany, top priority is attached to the evolution of natural forest on the transferred land.

The designation of two more national parks with such core zones is under discussion.

**7.) Favourable political, institutional and socio-economic context for protected areas, public relations work and awareness raising**

**Objectives from the National Strategy on Biological Diversity:**

*By 2010, 80% of nature parks satisfy quality criteria in the fields of tourism and recreation.*

*All national parks allow people to experience nature in suitable areas.*

*In 2010 the National Natural Landscapes, as an umbrella brand for German major protected areas, are recognised as a high-quality trade mark for recreation close to nature and for quality tourism in natural surroundings.*

*Development of concepts for nature-friendly, attractive leisure uses in protected areas and their implementation by 2012.*

*Increasing application of the “European Charter for Sustainable Tourism in Protected Areas”.*

At present (January 2009) some 25.5% of the area of Germany are designated as nature parks (see above). About 60% of them satisfy quality criteria in the field of tourism and recreation. All German national parks already enable people to experience nature in suitable areas.

The Federal Agency for Nature Conservation supports the major protected areas (national parks, biosphere reserves and nature parks) under association assistance programmes and R+D projects. For example, various major protected areas are to jointly develop innovative measures ranging from species, biotope and landscape protection to visitor management, environmental education and environmentally sound regional development.

Also, a joint communication strategy has been established for the major protected areas in Germany. This also involved participation by the Federal Environment Ministry/Federal Agency for Nature Conservation (R+D projects) and the DBU. One important element in this strategy is the creation of the umbrella brand “National Natural Landscapes”, which is now to be strengthened.

“National Natural Landscapes” is an umbrella brand which is owned by EUROPARC-Deutschland as (a) central association of major protected areas. The aim of the umbrella brand is to establish a single corporate design for publicity by all major protected areas in Germany and to increase the prestige of the major protected areas. The umbrella brand is also intended to represent major protected areas that are of high-quality in all respects (i.e. including recreation close to nature). To date, about 40% of the major protected areas in Germany have signed licence agreements with EUROPARC. By 2010 the aim is to recruit more major protected areas (especially nature parks) for the umbrella brand, thereby raising its awareness ratings.

In preparation for COP 10, another project is to show what progress has been achieved in the National Natural Landscapes towards the 2010 target “Halt loss of biodiversity”, and also what deficits still exist – especially as regards the challenges of climate change.

The European Charter for Sustainable Tourism in Protected Areas has been tested in model projects in three nature parks, one national park and one biosphere reserve. The model project showed that the European Charter is a suitable instrument for partnership-based development

of sustainable tourism in major protected areas in Germany. The project was supported by the Federal Agency for Nature Conservation, with funds from the Federal Environment Ministry.

In 2001, the Frankenwald and Steinhuder Meer nature parks were the first parks in Germany to be awarded recognition under the Charter, alongside five other European nature parks and national parks. The “Isle of Usedom” nature park received the title in 2002. It was followed in 2005 by the Pfälzerwald nature park (the German part of the Franco-German biosphere reserve “Pfälzerwald & Vosges du Nord”) and the Harz National Park.

Thanks to the attractions of the countryside it passes through and the unparalleled harmony of its nature, culture and history, the German Green Strip provides an opportunity for the development of gentle tourism as a basis for sustainable regional development. Taking advantage of these benefits is the aim of the “Green Strip Experience” project, a trial and development project funded by the Federal Environment Ministry/Federal Agency for Nature Conservation. This project is developing and successfully marketing experience offerings and bookable tourism products. This approach is being explored in three model regions: Elbe/Altmark/Wendland, Harz and the nature parks Thüringer Wald/Thüringer Schiefergebirge-Obere Saale/Frankenwald. The project is also examining the possibility of transferring the approach to other regions in the German Green Strip and elsewhere in Europe.