

Biodiversity and the Netherlands



Background to this brochure

The structure of this brochure was stipulated by the Interdepartementale Overleggroep Biodiversiteit (IOB), which is made up of representatives from

five ministries: Agriculture, Nature Management and Fisheries; Foreign Affairs; Housing, Spatial Planning and the Environment; Transport, Public Works and Water Management; Education, Culture and Science; and Economic Affairs.

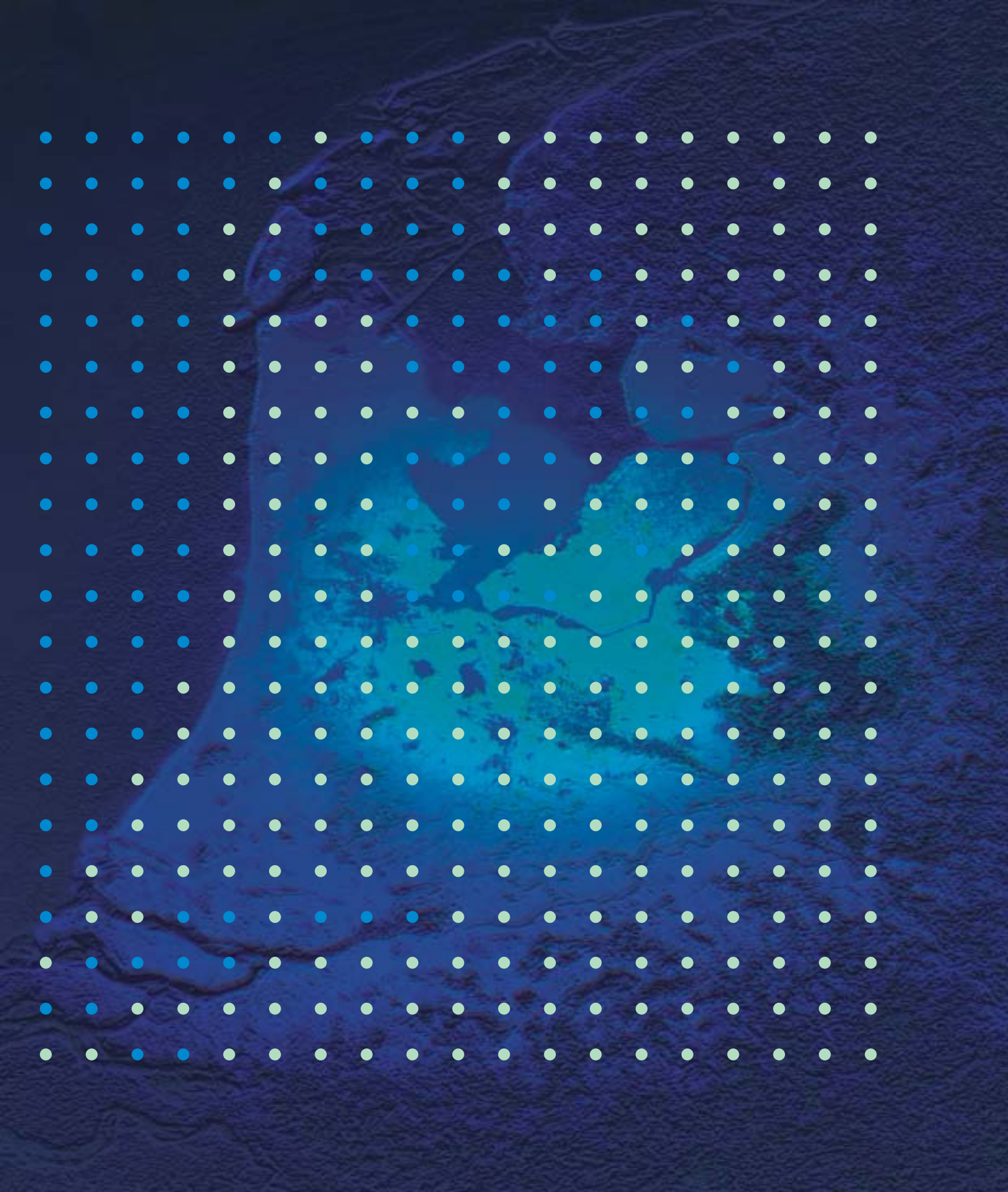
The aim is to report on the efforts made by the Dutch government and civic organisations in the Netherlands to achieve the aims of the Convention on Biological Diversity (CBD). The brochure summarises the formal National Report to the secretariat of the CBD. Particular attention is given to the three themes

of COP6: forest, gene resources and exotics. In addition, two themes typical of the Dutch situation are discussed: 'wetlands and water', and agrobiodiversity. As the aim was to present a clear narrative, the CBD articles have not been dealt with in strict sequence; however, the corresponding article numbers and titles are indicated in the margins.

Ede, February 2002



Netherlands



Biological diversity is in the interest of us all. Over the last few decades we have seen many animal and plant species becoming extinct. We need to do all we can to turn the tide, both at national and international levels. Otherwise we risk losing so much.

Each species has its own intrinsic value and that alone is reason enough to protect it. Maintaining the wealth of species is of vital importance to the human species too. If we want to find new medicines and other useful products of biological origin we have to be able to rely on a rich diversity of animal and plant life. The same applies to the need to find and develop new breeds for the production of our food.

The loss of species is a worldwide problem. For that reason it is essential that we tackle it on an international scale. The Convention on Biological Diversity can play a key role in this process. The Convention has now been signed by 180 countries, making it the ideal platform for agreements to be made on the protection of biodiversity. During the regular Conferences of Parties to the Biodiversity Convention work is carried out to develop the Convention's declarations of intent into concrete plans of action and guidelines. The signatories themselves must then ensure that these agreements are honoured in their own countries.

This brochure aims to give you an idea of how we in the Netherlands are working to protect biodiversity. The Netherlands is a small country with more than 16 million inhabitants, making it one of the most densely populated areas in the world. This means that we have to be sparing and inventive in the way we utilise our fertile, but small, portion of land and water. As part of this process we have to take extreme care to address conservation and

sustainable utilisation of genetic sources, species and ecosystems properly. It is a constant struggle to ensure that the country's flora and fauna are not sacrificed for the sake of our economic and social needs, worthy as they may be.

We have concentrated on the conservation and development of natural and semi-natural areas. This policy is supported by measures directed at specific species. In addition the Netherlands pays special attention to the protection and development of flora and fauna in farming areas and in areas rich in water.

The Netherlands is however well aware that national measures are not enough. In order to protect biodiversity properly we need to strengthen international cooperation. The Dutch Government is ready to play its part. Our chairmanship of the 6th Conference of Parties is one example of this. Biodiversity has the right to be protected. I am pleased to see that awareness of this fact is growing around the world. I hope that this brochure will inspire many people to carry on the good work.

**State Secretary for Agriculture,
Nature Management and Fisheries
Chair of the Sixth Conference Of Parties
to the Convention on Biological Diversity**


Geke Faber

1 Dutch Policy

Anyone flying into the country's main international airport Schiphol could be forgiven for thinking that the Netherlands is totally built over. As far as the eye can see there are houses, industrial estates and greenhouses, and a dense network of roads. In between are some long, narrow fields and, if you know where to look, some tiny nature reserves. With 16 million people living on 34,000 km², it's no wonder that empty areas are few and far between.

To provide all these people with a high standard of living, choices have to be made. So, for almost every square metre of the country there has been deliberation about the best land use option: housing, industry, agriculture, water, nature conservation, or a combination of one or more of these. The decision is almost invariably based on economics, with loss of biodiversity and climate change brought about by the building of infrastructure, housing and by water and soil pollution being incidental considerations. It's not just species numbers and gene pools that are diminishing; the complex relationships in ecosystems are coming under increasing pressure or are disappearing. Both the area designated for nature conservation in the Netherlands and its quality have diminished.

Exacerbating this is the vast quantity of polluted water that continues to flow into the Dutch delta from the European hinterland. And, in turn, biodiversity elsewhere is affected by what the Dutch do: for example, importing goods that have not been produced in sustainable systems, and travelling more.





Reversing the decline

Biodiversity is immensely important, not only because of the intrinsic value of all living things and its role as a life-support system for ecological processes, but also because it enhances our quality of life and contributes directly or indirectly to the economy. So, in recent decades the Dutch government has tried to reverse the decline. Dutch policy aims to integrate the conservation and sustainable use of biodiversity in relevant sectors, as a component of sustainable development and with civic and organisational support. Aware that biodiversity is more than nature conservation and that it involves many sectors and themes that transcend sectors, Dutch ministries have been collaborating to implement this policy since the signing of the Convention on Biological Diversity. The Dutch government's policy document 'Nature for People, People for Nature' sets out programmes to promote the principle of 'sustainable use' for the agriculture, fisheries and tourist sectors, consistently applying the ecosystem approach to do so. Furthermore, the EU Habitat Guideline has also been incorporated into Dutch legislation.

The Netherlands also champions biodiversity internationally. In relative and absolute terms, the Netherlands is one of the largest donors of programmes and projects aiming at the conservation and sustainable use of ecosystems. In accordance with the UNCED agreement it allocates a minimum of 0.1% of the Gross National Product to international biodiversity and environmental policy.

The Netherlands spends over one-third of this money on the protection and sustainable use of biodiversity. Dutch funds have, for example, enabled over 100,000 hectares in central and eastern Europe to be designated as protected nature

> art. 6
general
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> art. 5
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financial
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incentive
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> art. 13
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education

> art. 8j
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knowledge

conservation areas. In these areas of Europe, programmes for on-farm nature conservation have been started with Dutch support. The Netherlands is also making efforts to bring about an array of financial resources for supplying funds to developing countries. For example, partnerships have been set up between the World Bank and regional banks, with one of the aims being to incorporate considerations of biodiversity in the banks' policy. One of the ways the Netherlands has worked out its commitment to the sustainable use of biodiversity under its International Nature Management Programme is in policy for recreation and tourism.

The Fourth National Environmental Policy Plan announces the actions to be taken for Dutch trade flows and the claims made on biodiversity and natural resources to be sustainable.

The Netherlands is also in the process of 'greening' the tax system: providing incentives for acting to benefit biodiversity. For example, revenue from green projects is exempt from tax on dividends, and the recreation sector is being encouraged to invest part of its profits in nature conservation. Much effort is also being put into education and publicity, and to that end a comprehensive study of nature conservation education was financed several years ago. The preservation of biodiversity is having a catalytic effect, bringing people from diverse backgrounds round the table to discuss the setting up and implementation of interdisciplinary educational projects

In the Netherlands situation, the relation between indigenous people and biodiversity is not relevant, but in the context of development cooperation in developing countries, the Netherlands does give priority to the participation of traditional communities and indigenous people.

On the whole, however, the implementation of

policy on biodiversity is still proceeding very slowly. There has been progress in some areas; for example, together with civic organisations the government is increasingly encouraging the conservation of biodiversity to be combined with other functions such as housing and recreation. The emphasis has now shifted towards using the landscape sustainably instead of cordoning it off. This brochure reports on the dilemmas facing the government and civic organisations in the implementation of the Convention on Biological Diversity.

Linking nature

The most important indicator of the conservation of biodiversity *in situ* in the Netherlands is the national ecological network (NEN), a nation-wide network of nature reserves. The NEN is based on existing large nature reserves, such as the coastal strip, the delta, the North Sea, the Wadden Sea, and the forests and heaths of the Veluwe in the centre of the country. The idea is to expand the area of interconnected nature reserves, thereby increasing the basis for species and promoting exchange between populations. The aim is for the NEN to ultimately cover 750,000 ha.

Sometimes a nature-friendly farm functions as the link between two nature reserves. Where this does not sufficiently provide for the expansion and connection of nature reserves, the government purchases farmland and converts it into nature reserve. Working with the agriculture sector and nature conservation organisations, the Dutch government looks to see whether the best land use option is nature reserve, on-farm nature conservation or agriculture. In recent years, 12,000 ha have been purchased for the NEN. The network is

> art. 8
in-situ
conservation

scheduled to be complete in 2018.

At the moment it is still difficult to measure the impact of the NEN. After ten years of implementing government policy, there has certainly been a resurgence of various threatened species in the wetter and dynamic areas. This seems to be the result of the expansion and recovery of the ecosystems concerned. This is one of the reasons the Netherlands is championing a European ecological network.

Dutch efforts in the area of the three COP6 themes

Forests

Currently, about 11 percent of the Netherlands is under forest, largely thanks to the major reafforestation that began in the second half of the 18th century. At that time, hardly any indigenous woodland remained: land reclamation and overexploitation had reduced the area under forest to 1 percent. The plantations were primarily intended to yield timber and to stabilise shifting sands. But since the mid 20th century, recreation and nature conservation have become steadily more important; recreation is now the most important function of Dutch forests.

Protected under the Forest Act, Dutch forests are an integral part of Dutch policy on biodiversity. About one-third are managed by nature conservation and statutory organisations, one-third are state-owned, and the remainder are in private hands. The attention paid to sustainable forest management and biodiversity has grown since UNCED 92. The development of forest management that follows nature (Pro Silva) has, together with integrated

forest management, not only helped make forest more interesting for recreation but has increased forests' ecological value while keeping forest management affordable. Forest managers, including the many private individuals who own small woodlands, are enthusiastic about these forms of forest management. Ways in which the Dutch government is stimulating this management method include rewarding forest owners for providing multifunctional forest and the publication of a manual on integrated forest management.

An important part of Dutch state forests and also various municipal woodlands have been certified under the national FSC standard. Though the costs have deterred private owners from applying to have their woodlands certified, there now seems to be a way round the problem: applications are being put in by groups of forest owners. Internationally, the Netherlands strives for the protection and sustainable use of forest ecosystems in the tropics and in temperate and boreal zones. The Netherlands participates actively in international discussions on forests and, as one of the largest donor countries, supports programmes and projects all over the world for the maintenance and sustainable management of forests.

Genetic resources

Within the many species on Earth there is huge variation in life forms. People have contributed to this variation appreciably, especially in the species we use in agriculture; examples include the breeding of animals such as the cow, food crops such as rice and of ornamental plants such as the tulip. Many of these genetic resources originate from developing countries. Western countries have profited enormously from these resources, but the countries of provenance have received little

recompense. In the Convention on Biological Diversity it has been agreed that genetic resources may only be removed from their country of origin if the country in question has given prior permission; furthermore, the intended use of these resources must have been agreed. Guidelines for this have been developed under the Convention on Biological Diversity and a new legally binding convention is being prepared for plant genetic resources in agriculture.

Agreements about the knock-on effects of these international principles are being made with Dutch nurserymen and growers. The botanic gardens in the Netherlands are also active in this. The government has set out its policy on genetic resources in a policy document (*Bronnen van ons bestaan: behoud en duurzaam gebruik van genetische diversiteit*). The Netherlands Centre for Genetic Resources (CGN) is currently also preparing an overview of all the microbial, plant and animal genetic resources in the Netherlands.

Exotics

Identifying the presence of exotics in the Netherlands and preventing them from establishing is perhaps not attracting as much attention as it should. Exotics can enter the Netherlands easily, as it is an open trading country. Various Dutch researchers are monitoring which exotics do occur. They have found that exotics account for almost 800 of the over 25,000 animal species in the Netherlands and that 100 of the 1,750 marine species are exotic. Research is still being done on the macro-invertebrates in the Rhine. The Netherlands currently does not have a policy for dealing with exotics in Dutch wildlife. The Plant Pathology Service has an extensive system for preventing exotics in agriculture, however. And there

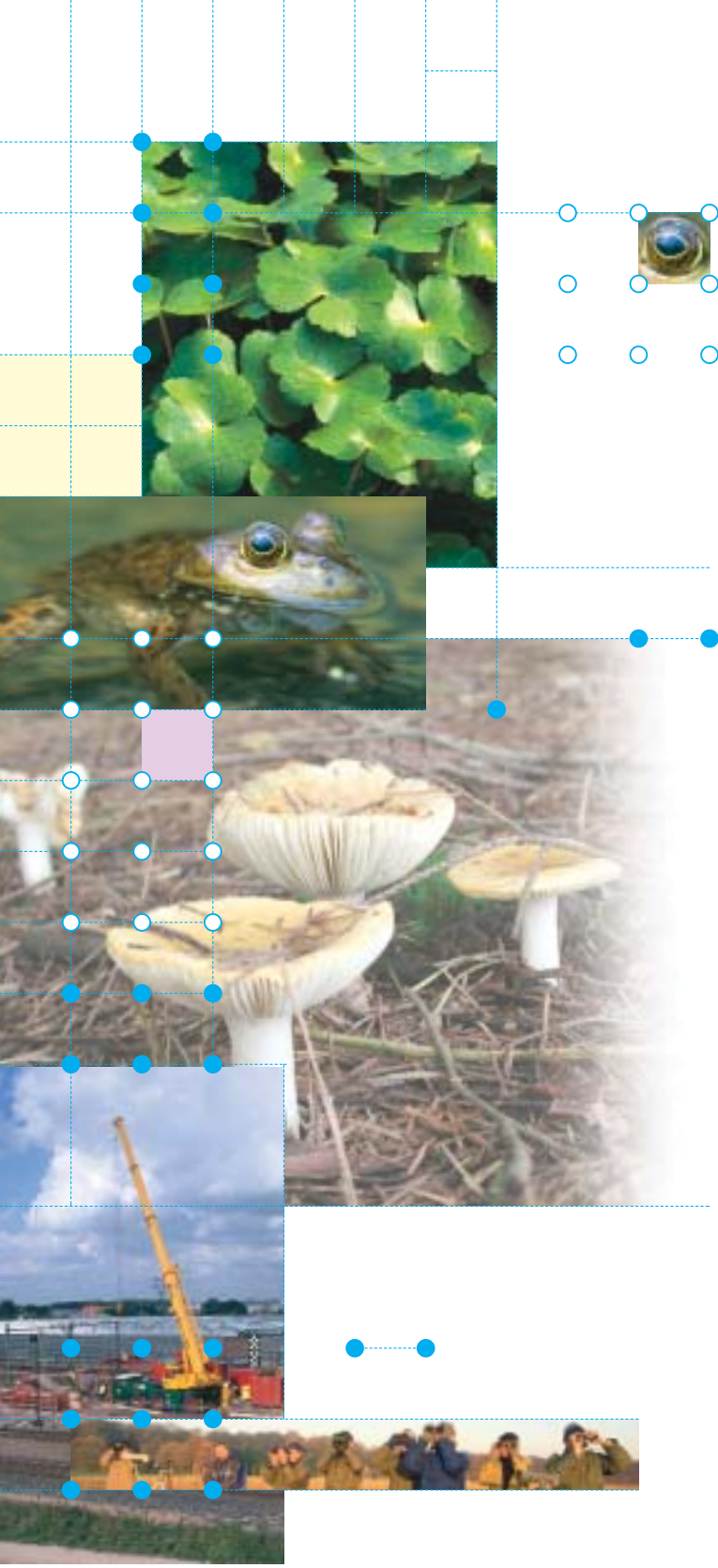
> art. 19
distribution
of benefits

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sustainable
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> art. 15
genetic
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> art. 16
transfer of
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> art. 8h
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are regulations prohibiting the introduction of exotics and allowing exotics to be exterminated. Only a few species are involved. The topic usually appears on the agenda after 'incidents': the undesired introduction into the natural environment of invasive alien species. Recent topical examples are the American bullfrog and the floating marsh pennywort, which have proliferated alarmingly. The floating marsh pennywort poses a particular hazard for open waterways such as ditches and canals.

Research for good policy

At various universities and research institutes in the Netherlands, research is being done on biodiversity, nature management and the socio-economic aspects of policy on biodiversity. Two large national graduate schools deserve particular mention.

> art. 12
research and training

The organisations that make up the Biodiversity Graduate School manage all the biological collections of the Netherlands plus a huge collection of plants and animals from the tropics. These collections are used not only by researchers from this graduate school and from elsewhere, but also by policy evaluators and others. The work done by the research school varies from research on the impact of climate change on biological diversity to research on the feasibility that genetically modified organisms will hybridise with related species in the wild.

> art. 17
information exchange

The research done in the Biodiversity Graduate School dovetails with that done in the Functional Ecology Graduate School. In the latter graduate school, researchers' prime aim is to understand the different interrelationships between species. This information is also very important for sensible

policy. In addition to all this, the Netherlands is also championing a Global Biodiversity Information Facility (GBIF) that would make biodiversity data available worldwide via a network of scientific databases. Given its knowledge and experience, the Netherlands is keen to play a leading role in the GBIF.

> art. 18
cooperation

Indicators

The demand for up-to-date and accurate data on the developments in biodiversity has increased concomitantly with the growth of interventions to implement nature conservation policy. The ecological monitoring network (NEM), a set of monitoring networks for certain species groups, aims to meet this demand. Thousands of volunteers help carefully monitor species and species groups, and the information is currently being used to develop a set of indicators that give policymakers and politicians an accessible picture of the progress in biodiversity policy and conservation. A separate environmental balance shows the progress made in the abiotic environment, so revealing to what extent living nature can profit from this.

> art. 7
identification and monitoring

Environmental impact assessments

> art. 14
impact assessment

In the Netherlands there is a statutory obligation to carry out an environmental impact assessment for each proposed project that will have spatial consequences. Though biodiversity has been incorporated into this exercise to date, this was mainly at species level. This method did identify the worst projects but was not enough. Therefore in accordance with the imminent international guidelines, which the Netherlands supports, the aim is now to make biodiversity an integral part of environmental impact assessments, i.e. to pay more attention to natural processes within ecosystems instead of to focus solely on species inventories. It has been found that such environmental impact assessments are very difficult to apply, however. EIAs are augmented by a yearly general evaluation of policy on biodiversity: the nature balance. This gives details of whether the policy has had sufficient impact and also what the trends are in the policy and in biodiversity.

Location of Natural Ecosystems and Agricultural Land in the Netherlands



The Netherlands is largely a delta, with a long coastline and many different aquatic ecosystems. Eighty percent of the natural ecosystems in the Netherlands are water-dependent. In western Netherlands these water-dependent ecosystems are the delta, the North Sea and Wadden Sea and Lake IJssel; in the east they are the wet moorlands and carrs on sandy soils.

Source: RIVM

Natural Capital Index

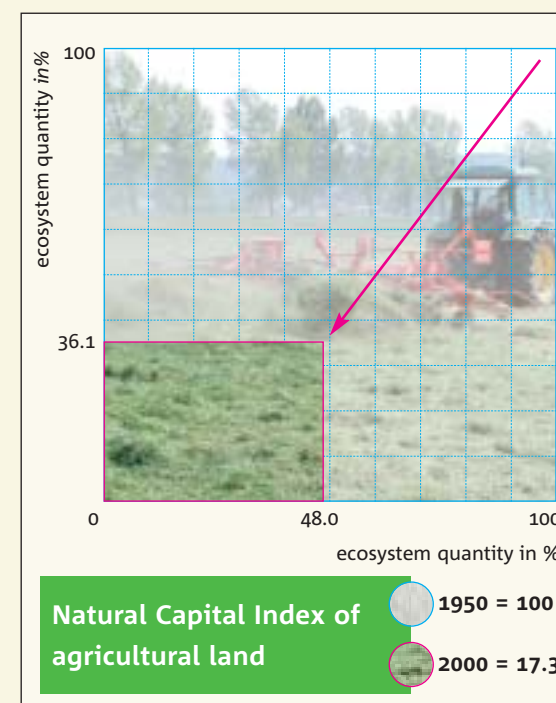
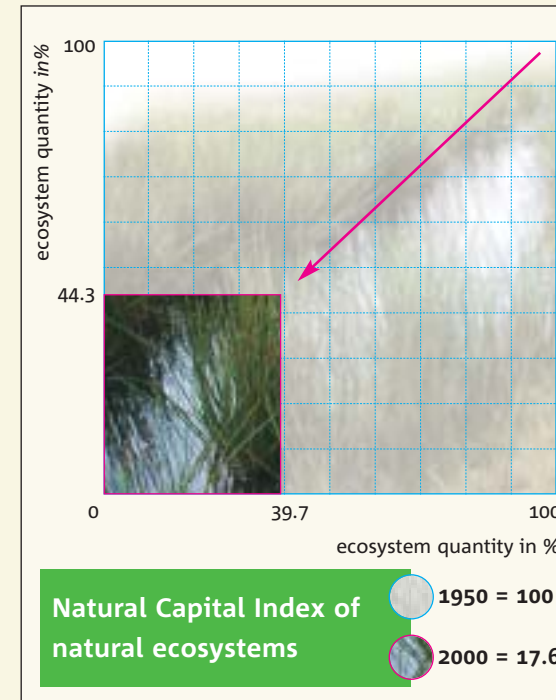
The Natural Capital Index was developed by the National Institute of Public Health and Environmental Protection (RIVM) as an indicator to help politicians and policymakers estimate the general state of Dutch nature. The index, a number between 0 and 100%, is the product of two factors: the quantity (expressed as a percentage of the area of nature reserve compared with a benchmark situation) and the quality (expressed as the number of species), both in relation to a starting situation. It will be refined for national and international use.

Quantity: In the last 50 years, the area of nature reserves in the Netherlands has shrunk by 7.2%. The heath, marine delta and freshwater delta have shrunk by half and as a result of impoldering for agriculture, recreation and residential development, Lake IJssel has shrunk by one-third. In contrast, the area of forest has increased because some agricultural land has been converted to forest and forest has been created in various nature development projects in the new polders.

Quality: On average, the quality of nature in the Netherlands is about 40%, calculated from the mean number of species compared with 50 years ago. But there are big differences between systems. The marine systems, the Wadden Sea and the North Sea are relatively well conserved; their quality is between 45 and 50%.

The Dutch Nature Capital Index is calculated from the occurrence of 974 plant and animal species in total, in 22 natural ecosystems (terrestrial and aquatic). A nature capital index has also been calculated for the nature in the agricultural area. It is calculated from wild plants and animals that are specific for the agricultural area.

The nature capital indices for natural ecosystems and for the agricultural area are of the same magnitude: respectively 17.6% and 17.3%. However, the figures for quality and quantity on which these indices are based are clearly different.



2 Restoring 'delta Netherlands'

The Netherlands is wet: almost one quarter of its area falls under the definitions in the Ramsar convention. Dutch wetlands have huge international significance and the Netherlands recognises this.

Every year, no less than 127 species of water bird visit the Netherlands: for 91 of these, at least 1% of the total population has been seen in the Netherlands, and for 55 species this proportion is as high as 10% or more.

The Dutch government is trying to preserve the existing wetlands from negative influences from outside and, concomitantly, to enhance their quality. In so doing it is following the line of the CBD programmes of work for inland aquatic ecosystems and marine and coastal ecosystems that prescribe diverse activities such as establishing the status of biodiversity in these systems, identifying the feasibility of protecting and sustainably using them, giving scientific advice and deciding on management measures.





Water in a corset

Living on a river delta means always having to do with water. Three large rivers – the Rhine, Meuse and Scheldt – flow into the North Sea via the Netherlands and, in addition, numerous smaller rivers and streams end in the Netherlands. Over the centuries, the water system has been forced into a corset to make the area suitable for housing and agriculture. Almost all the streams, the capillaries of the water system, have been straightened so that they discharge excess water quickly, as this benefits housing and agriculture. The same applies to the rivers: constricting dikes have been built alongside them to ensure that water is discharged rapidly and, more importantly, to protect the land behind the dikes from floods.

The rivers and streams ultimately flow into the North Sea either via the delta (in the south-west) or via Lake IJssel and the Wadden Sea. These lower reaches are also far from being natural systems. After the great flood disaster of 1953 the Zeeland delta was almost totally dammed off from the sea, with the result that within a few years the saline and brackish tidal waters became tideless inland water. Lake IJssel, in the centre of the country, is a freshwater lake created when the IJsselmeer Dam closed off the connection with the open sea in 1932. The country's only more or less intact wetland is the Wadden Sea.

Despite being under threat from fisheries, oil and gas extraction, recreation and other activities, the Wadden Sea is a unique tidal area in Europe, producing vast amounts of mudflat organisms that are an essential food resource for birds. This is one reason why the Wadden Sea is a vital link in the migration routes of bird populations that are of international importance.

Living with water

The downside of the efficient way the Dutch manage their water is that in recent decades the natural biodiversity has deteriorated rapidly. There are now very few gradual transitions from dry to wet, from sweet to saline. Tidal action is now largely restricted to the sea. Dikes ensure that river water has minimal influence on the surrounding land and they thus increase the safety of the people behind them. However, the ecologically valuable vegetation, such as the characteristic river corridor grassland in the east of the country (*stroomdalgrasland*), has virtually disappeared, as have the vegetations of the brackish tidal areas. The sustainability of populations of migratory fish is hampered by physical barriers in the rivers and the restricted access from the sea.

Finally, and this reinforces all the physical barriers to biodiversity, the water quality has for long been a major problem. In the 1960s and 1970s, chemical pollution and the eutrophication of water led to a decline in populations and species. Remedial policy has had reasonable success, especially in abating chemical pollution, but new unknown chemical compounds continue to enter the aquatic environment, posing a threat. In spite of implementing remedial measures in agriculture, eutrophication caused by agriculture is expected to continue for a long time, because phosphate and nitrate in the soil are still en route to the groundwater. And the heavier traffic and industrial emissions are still important causes of environmental problems. Critics warn that without additional efforts in these areas, biodiversity will deteriorate still further. In short, Dutch water management has reduced biodiversity: the same, generally common, species are cropping up in more and more places.

Loosen the stays!

Despite the homogenising influence of humans on the systems, the existing wetlands in the Netherlands remain of huge international importance for biodiversity. Their supply of food and their area make them indispensable for breeding, migrating and overwintering marsh and water birds. The plant-eating overwintering birds feed on aquatic plants or need a combination of wetland and productive cultivated land. Looked at in this way, even the areas that fall outside the Bird Guideline are important for these protected birds.

It is precisely because of the international significance of the wetlands that the Dutch government wishes to restore existing wetlands as nearly as possible to their natural state. In many cases this means partially reversing measures taken in the past. The water must get out of its corset! In the first instance, in many places in the higher-lying parts of the Netherlands, streams have been given back their room to meander. Here, the water can once again discharge in a natural way: water is retained in the higher-lying areas for longer, with the result that discharge peaks are lowered and there is room for water-loving wildlife in the stream channels.

Something similar is being done to the large rivers. The extremely high river levels of 1993 and 1995 that nearly led to disastrous flooding brought home to everyone the need to give the rivers more room. The ingenious solution is to combine reorganising the land use in a nature-friendly way with improving safety from flooding, so in many places along the rivers the river channels are being opened and lowered and landscaped more naturally. In recent years some 4,000 hectares of 'new nature' have been created alongside the

rivers. Within a few years various fish species have returned to colonise the newly dug channels and their flowing side-channels.

The Netherlands is a signatory to international agreements on the management and use of the Rhine, Meuse and Scheldt.

Plans have been drawn up to blur the sharp fresh-saline interface at various places in the Zeeland delta and Lake IJssel. Salt water will then once again flow into the freshwater reservoirs here and there, with the great advantage that as well as the saline and freshwater habitats, brackish habitats will return along the Dutch coast.

The biodiversity will thus increase and the migratory fish that need different habitats will, ultimately, regain their habitat. Plans for making a small connection between the Haringvliet (one of the dammed outlets in the delta in Zeeland) and the open sea are at an advanced stage. This connection will allow tidal influence to be felt in the Biesbosch nature reserve behind the dam once more and will allow salt water to penetrate into the Haringvliet again.

A look ahead

The problems facing planners are not all technical: it is important to take agriculture and the drinking water supply into consideration. These sectors, and therefore Dutch society as a whole, have become used to the fresh water and it is not in their immediate interest to encourage salinisation. An important issue in the discussion is the safety implications of plans to salinise habitats. Furthermore, it is questionable whether the Netherlands may intervene so rigorously in existing protected wetlands. A shift, for example to a more saline environment, will cause certain plant and animal species to disappear irrevocably from certain localities, and yet the Netherlands is internationally committed to conserving the existing species! This dilemma has to be taken into account when developing future scenarios.

Public opinion about the Wadden Sea is to leave it as it is. The debate about combining the claims on this area continues, however. How far can we go with fisheries, recreation and wind turbines? Should these non-biodiversity functions gradually disappear from the Wadden landscape? The Dutch government's principle is that the use made of the Wadden Sea must be sustainable; it may not lead to irreversible damage to the system, and subsequent generations must still be able to use the Wadden Sea.

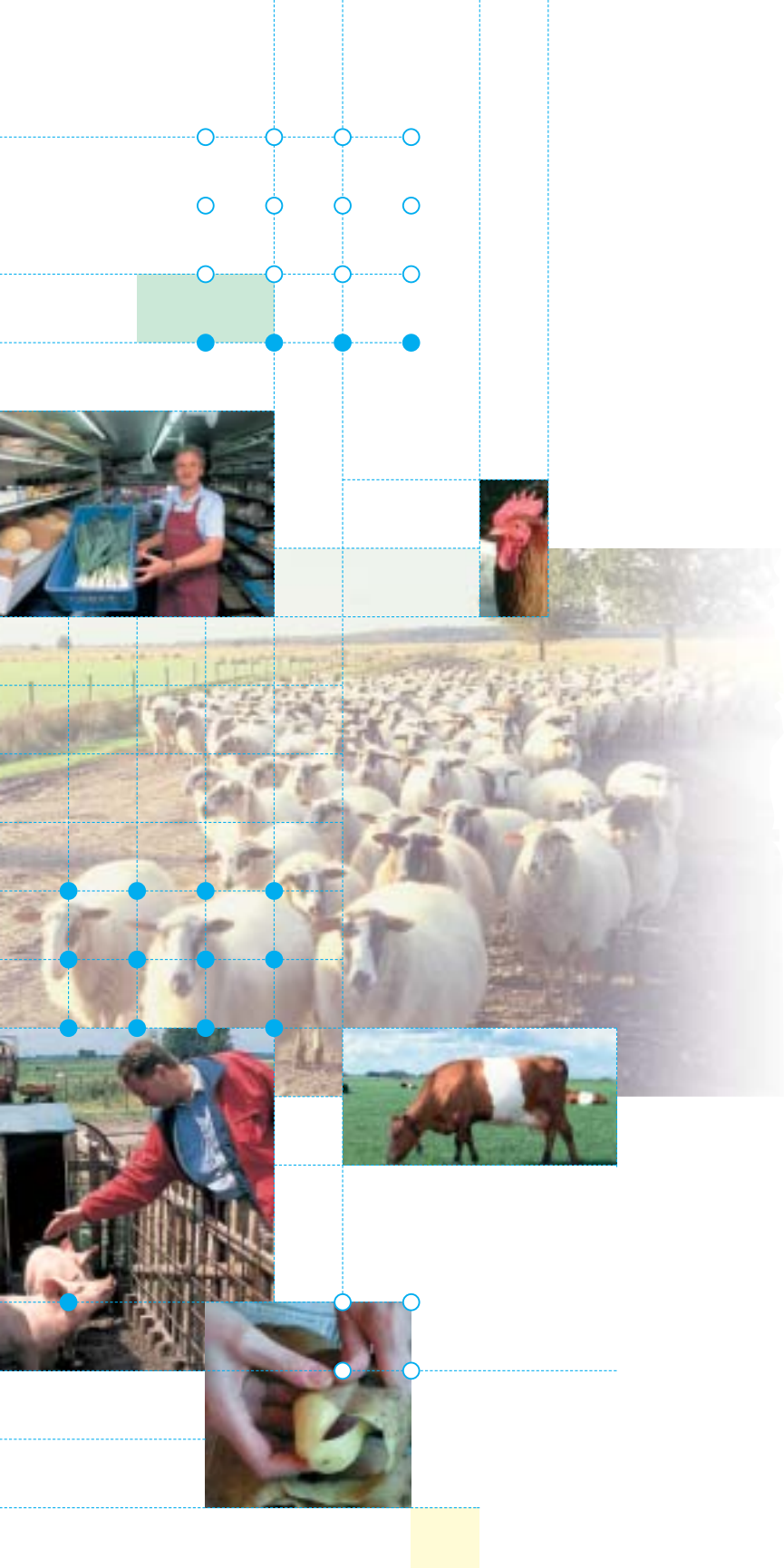


3 Agrobiodiversity in the Netherlands

In a country like the Netherlands, where agriculture is so important, agrobiodiversity is an essential component of biodiversity. It primarily involves conserving the significance of the agrarian landscape for living nature: life support functions, such as exploiting natural predators to combat pests and diseases, fostering a healthy soil fauna, ensuring genetic diversity in crops and livestock.

The Netherlands is making great efforts to protect and use biodiversity in agriculture. In particular, the government aims to give substance to the four elements of the Convention's programme of work on biodiversity. These elements are: the analysis and determination of the status of biodiversity; the fleshing out of management measures that promote agrobiodiversity; the participation of the parties involved; and the development of national plans in sectors of society relating to agrobiodiversity.





Biodiversity and farming

With almost sixty percent of its area designated for agriculture, the Netherlands is pre-eminently a farming country. Over time, farming has created a unique range of farmed landscapes with their own characteristic biodiversity. The Netherlands owes its third place in the world (after the United States and France) as an exporter of agricultural products to its knowledge-intensive and highly productive agriculture. It has achieved this status as a result of a drastic rationalisation of the Dutch landscape in the 20th century and an accompanying modification of farming practice. The land consolidation, the clearing of hedges and the straightening of water-courses have enabled Dutch farmers to modernise their farming, and there has been a corresponding increase in the use of fertiliser, crop protection chemicals, high-yielding crops and breeds, and heavy machinery.

The downside of these developments – and the Dutch government, the general public and the agricultural sector are now also waking up to this – has been a sharp decline in the biodiversity of the entire agricultural system. This bodes ill not only for biodiversity in the farming areas, but also for the resilience of the agricultural system itself. For this reason, the Netherlands is investing much effort in restoring agrobiodiversity at three related levels:

1. genetic variation in production (breeds)
2. biological and landscape elements that emanate from and/or depend on farming practice
3. production-supporting organisms and processes

Genetic diversity: from the Lakenvelder cow to the Bintje potato

Conserving the genetic diversity of agricultural crops and livestock is an international matter. People have been exchanging crops and animals since time immemorial: the tulip, now invariably associated with Holland, came from the Near East, and the potatoes in Van Gogh's painting *The potato eaters* are the descendants of tubers collected in the Andes.

The breeding of crops and livestock has a long history in the Netherlands. Year on year the breeders selected for high productivity; in plants, they selected for resistance to disease and for tolerance of drought. As a result, many traditional crop varieties and farm animals lost their economic importance. Many old varieties and breeds have been preserved in gene banks, but few are grown or kept *in situ*. The Netherlands has two gene banks with an important function for agriculture: the Centre for Genetic Resources (CGN) in Wageningen, which stores plant material, and, for animals, the Dutch Gene Bank for Farm Animals Foundation, which operates under the aegis of the Institute for Animal Science and Health (ID-Lelystad). Both gene banks also make a major contribution to maintaining genetic diversity internationally.

It is increasingly being recognised that selection need not focus solely on productivity, but that selection for quality characteristics (such as less dependence on resources, or, in the case of livestock, more natural behaviour) can be important. Genetic material from old varieties and breeds can be useful for this.

The existence of a foundation for rare domestic animals (*Stichting Zeldzame Huisdierrassen*), plus numerous societies and children's farms is evidence of the growing public interest in conserving and reintroducing traditional crops and breeds. Private individuals also contribute importantly to this. The Dutch government intends to improve the conditions for these activities; for example, by improving the information available about Dutch diversity and by amending the statutory requirements for the use of landraces that can, for example, adapt well to local conditions. The latter statutory requirements have been established at European level. Their modification may not lead to a deterioration of the quality of the starting material for farmers and market gardeners and must meet the wishes of growers (organic producers, or producers of local produce, for example). The Netherlands is a very important provenance for grass species. Many of these – whether traditional or modern cultivars – are stored by CGN, which is currently investigating whether traditionally managed grasslands contain more semi-wild species that can be conserved in the field by modified management.

Until recently, the conservation of old Dutch livestock breeds such as the Lakenvelder cow and the Schoonebeker sheep was largely in the hands of individuals and breeding organisations, but three years ago the Dutch government began funding a programme to systematically freeze sperm, egg cells or embryos as a back-up.

> art. 9
ex situ
conservation

Biodiversity in the field: from black-tailed godwit to ditch bank

In recent years the Dutch agricultural sector has increasingly tried to create a sound interplay between agriculture and nature, by modifying farming practices. To achieve this interplay, policy aimed at reducing environmental stress from agriculture is being augmented by more management to benefit meadow birds and birds that are winter visitors. Other measures include landscape maintenance and small-scale nature conservation; the latter includes creating conditions favourable for butterflies and moths and other fauna and flora, and also nature-friendly management of the banks of the ditches that criss-cross the Dutch countryside. Dutch grasslands are of international significance as breeding grounds for meadow birds such as the black-tailed godwit and lapwing. These lush Dutch grasslands are also of international importance for various species of goose: over 1 million individual geese overwinter in the Netherlands every year. Since the 1970s the Dutch government has been stimulating farmers to conserve nature, manage landscape and incorporate nature and landscape into their farming, with the result that Dutch farmers now farm about 60,000 hectares in a nature-friendly way. Every year, tens of thousands of people voluntarily work with farmers to protect the nests of meadow birds and to maintain landscape features such as pollarded willows, orchards of traditional standard fruit trees, and hedges. Dutch farmers' on-farm nature management is unique. There are now about a hundred agrarian nature organisations that together actively manage 25% of the Dutch countryside.

Biodiversity as a production factor: from fungus to ichneumon wasp

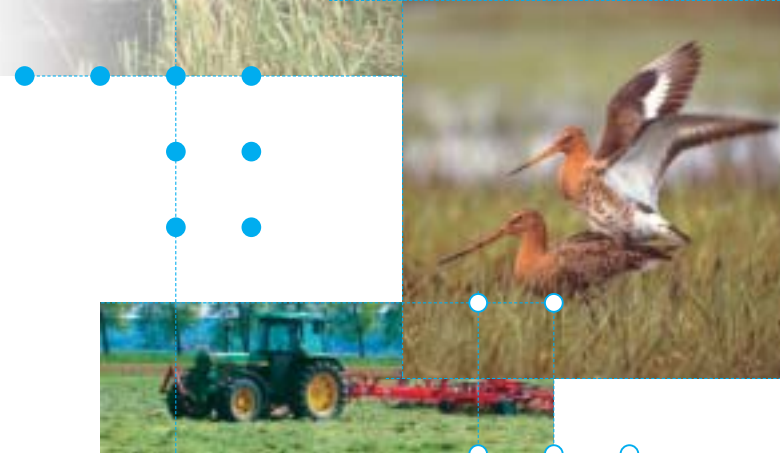
The quest to reduce agriculture's dependence on external resources such as minerals, crop protection agents and veterinary drugs has resulted in more attention being paid to biodiversity as a production factor for functional biodiversity. The consequence is great interest in exploiting the soil ecosystem, and in using insects for fertilisation and natural predators to combat pests and diseases. Awareness is growing that a sound equilibrium in the soil ecology can help reduce crops' susceptibility to pests and diseases, improve the efficiency of the mineral cycle and enrich the soil biota of fungi, bacteria, insects and worms. Among the positive effects this leads to are better economic performance of farms, and increased biodiversity.

A natural environment in which natural predators can survive can reduce disease pressure. For example, it has been found that there is an inverse relationship between numbers of the harmful parasite thrips in leek and the area of nearby woodland. But many questions still remain on this issue, because the natural environment also harbours diseases and pests. It is for this reason that the Netherlands is actively promoting research in this area. Organic farming, i.e. farming without chemical pesticides and fertilisers yet making use of natural processes, can yield important insights on this that are also applicable to conventional farming. Organic pest control is already widespread in greenhouse horticulture.

Interconnections

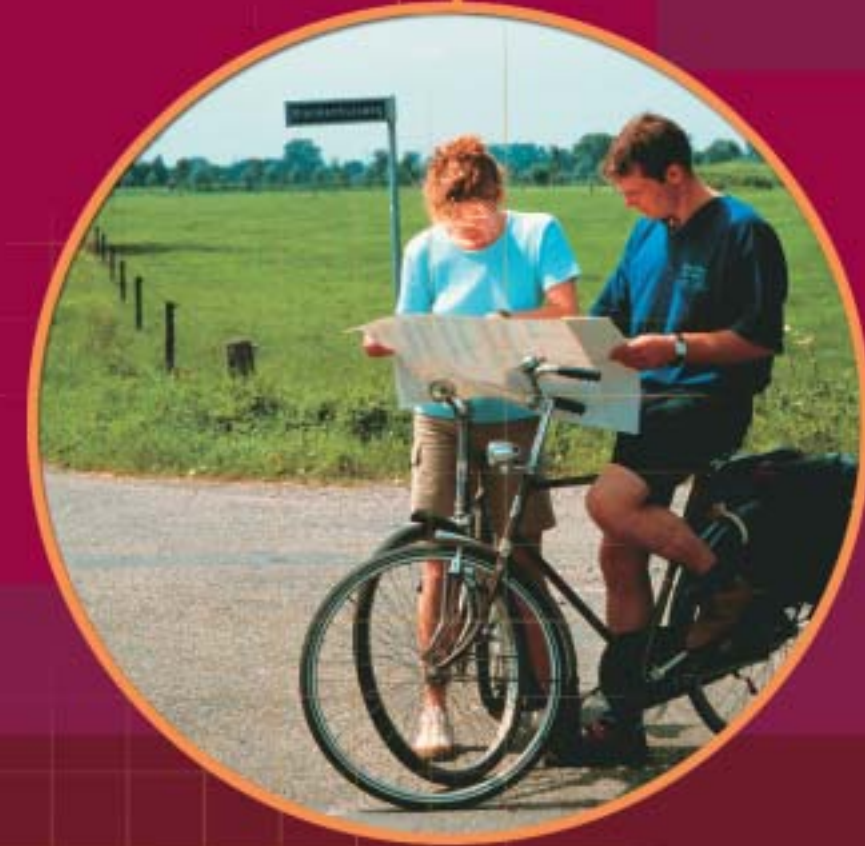
The various levels at which agrobiodiversity is being worked on – the genetic variation in production (breeds and cultivars), the maintenance of biological and landscape elements, and the utilisation of production-supporting organisms and processes – are interconnected. For example, as well as being havens for species at risk, spinneys and hedges also provide habitats for natural predators; more genetic variation in the assortment of crops and livestock can help reduce the risks of large-scale outbreaks of disease or of pest infestations; and a more natural soil biota can increase crop resistance.

Biodiversity also offers new opportunities for agriculture. In the research due to begin on multifunctional farm systems in 2002, an important focus will be the protection and utilisation of biodiversity. The influence on biodiversity of various spatial configurations at regional level will also be investigated. And to further stimulate biodiversity on farms, the Dutch government is collaborating with the farming community on a plan to implement this principle for 2003.



4 Biodiversity in Society

Biodiversity has become an important component of policy in the Netherlands. Spatial planning and environmental policy are largely dominated by the aim to improve nature. Even the country's highly productive agriculture is currently paying attention to biodiversity. Fifteen years ago, no-one would have believed that in the year 2002 biodiversity would be thought about in this way.





Integration in other sectors

Though Dutch policy pays attention to diversity in all sorts of places, this is not to say that this route will henceforth enable biodiversity to recover and survive unaided: biodiversity is still too much of an interest unto itself that is weighed against all other interests in the considerations of politicians and the general public. But if biodiversity is to be maintained in perpetuity, it must, as a matter of course, be an intrinsic component of all relevant sectors.

The international role

Internationally, the Netherlands is also playing an important role in the debate on biodiversity. With the country at the hub of bird migration flyways, Dutch nature reserves are a vital link in bird conservation worldwide. The Netherlands has the responsibility of maintaining, restoring and developing biodiversity, nature and landscape that are characteristic of the country and also of the biodiversity that is influenced elsewhere by Dutch actions. The interdepartmental International Biodiversity Policy Programme that will shortly be operational will reinforce the Dutch contribution to the worldwide combating of the loss of biodiversity.

Learning process

Ultimately, biodiversity will have to be an integral part of the mindset and actions of all society. This is a learning process that is currently being worked on. As well as paying attention to the Dutch environment, it entails collaborating internationally to conserve biodiversity, not only to learn from each other but also because biodiversity is a theme that transcends national borders and thus the effects of human influence on biodiversity are felt a very long way from home.

Summary

This brochure describes the efforts the Netherlands is making to achieve the aims of the Convention on Biological Diversity (CBD). Dutch policy is focused on the integration of the conservation and sustainable use of biodiversity in relevant sectors. In addition, the Netherlands is systematically applying the ecosystem approach. The participation of ordinary people and organisations in the planning and implementation is becoming increasingly important, and hence education and public relations are also growing in importance.

The Netherlands invests over 0.1% of the Gross National Product in international biodiversity and environmental policy, making it one of the largest donors in this area. The most important indicator of the *in situ* conservation of biodiversity in the Netherlands is the 'national ecological network' (NEN), a nationwide network of terrestrial and aquatic nature reserves that is steadily expanding and will ultimately extend over 750,000 ha.

COP6 themes: **Forests** currently account for 11% of the land area of the Netherlands; they are used primarily for recreation and nature conservation. Forest managers and the government are actively collaborating to develop sustainable forest management and certification in accordance with the national FSC standard. The Netherlands is developing a proactive policy for the conservation and sustainable use of **genetic resources**. In this context, agreements about the implementation of CBD principles are being made with Dutch nurserymen and growers. The Netherlands controls **exotics** in agriculture via an extensive prevention system and regulations. Alien species in the wild receive incidental attention only.

The **research** in the Netherlands in the area of biodiversity covers a range of problems such as interrelations between species, climate change, and genetic modification of organisms. An ecological monitoring network (NEM) in which

thousands of volunteers assist has been set up to monitor biodiversity. Work is currently being done on indicators for biodiversity and to make policy advances transparent for policymakers. The aim for the statutory environmental impact assessment in the Netherlands is to incorporate biodiversity more integrally than has so far been the case. Chapters 2 and 3 cover themes typical of the Dutch situation. They report on what the Netherlands is doing with the related programmes of work of the CBD. Chapter 2 covers the theme '**wetlands and water**'. Because of its unique position as a delta, the Netherlands includes a large number of wet ecosystems, each with a characteristic variation in biodiversity. The government is attempting to protect the existing wetlands against negative influences from outside, and is simultaneously trying to improve wetland quality. Whereas water management used to aim at regulating and protecting against floods, the Dutch are now experimenting with more natural systems that offer more scope for biodiversity. Chapter 3 deals with the efforts the Netherlands is making for the protection and sustainable use of **agro-biodiversity**. The biodiversity value of many agricultural landscapes in the Netherlands is coming under increasing pressure, which is why the Netherlands is working hard to restore genetic variety in breeds and varieties, biological and landscape elements related to farming practice, and production-supporting biological organisms and processes.

Websites

General

Netherlands Clearing-house Mechanism for Biodiversity

www.biodiversity-chm.nl

As this site has links to almost all organisations active in biodiversity in the Netherlands, these are not repeated here. At the time of publication of this brochure, the site was still being expanded.

Web sites of Dutch ministries involved in this brochure

Ministry of Agriculture, Nature Management and Fisheries

www.minlnv.nl

Ministry of Foreign Affairs

www.minbuza.nl

Ministry of Housing, Spatial Planning and the Environment

www.minvrom.nl

Ministry of Transport, Public Works and Water Management

www.minvenw.nl

Ministry of Education, Culture and Science

www.minocw.nl

Ministry of Economic Affairs

www.minez.nl

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Resumen

Este documento describe los esfuerzos de los Países Bajos para lograr los objetivos de la Convención para la Biodiversidad (CBD). La política holandesa busca la integración de la conservación y del uso sostenible de la biodiversidad en todos los sectores relevantes. Para tal efecto los Países Bajos aplican el "Enfoque por Ecosistemas" de manera consecuente. La participación de los ciudadanos y de las organizaciones en la planificación y ejecución de las políticas es un aspecto cuya importancia está creciendo cada día más; esto también se refleja en la educación y en la información. El soporte principal para la conservación in situ de la biodiversidad en los Países Bajos es la "Red Nacional de Zona Protegidas" (EHS): una red nacional de zonas naturales terrestres y acuáticas que se ampliará gradualmente hasta cubrir unas 750.000 hectáreas. Los Países Bajos destinan más del 0,1% del Producto Nacional Bruto a programas internacionales de conservación de la biodiversidad y del medio ambiente, destacándose como uno de los mayores donantes en este campo.

Temas relacionados con COP6: Los **bosques** ocupan en la actualidad el 11% de la superficie terrestre y sus funciones principales son la recreación y la protección de la naturaleza. Los propietarios y el Gobierno colaboran activamente en el desarrollo de un manejo forestal sostenible y en la certificación forestal de acuerdo con el Estándar Nacional de FSC. En el ámbito de las **fuentes genéticas**, los Países Bajos están desarrollando una política activa de protección y de uso sostenible. El Gobierno llega a acuerdos con los agricultores y cultivadores en realizar la aplicación de los principios del CBD. Para la regulación del uso de **especies exóticas** en la agricultura los Países Bajos cuentan con un sistema amplio de prevención y legislación. La atención que se presta a las especies exóticas en las áreas naturales todavía es incidental.

La **investigación** que se lleva a cabo en los Países Bajos en la biodiversidad es muy diversa y abarca una amplia gama de temas, tales como las relaciones entre especies, el cambio climático y la modificación genética de organismos. Para el monitoreo de la biodiversidad se ha creado la Red de Seguimiento Ecológico (NEM) en la cual participan miles de voluntarios. Ahora se está desarrollando una serie de indicadores para la biodiversidad y para visualizar los avances alcanzados a los responsables políticos. En el sistema actual de evaluaciones del impacto ambiental, que es un requisito legal, se va a incluir la biodiversidad de una forma más integral que antes.

Los capítulos 2 y 3 tratan de temas característicos de la situación en los Países Bajos. Se da información acerca de lo que se está haciendo en los Países Bajos en cuanto a los respectivos programas temáticos del CBD. El capítulo 2 se refiere al tema '**humedales y agua**'. La posición geográfica única de los Países Bajos siendo un delta hace que el país tiene un gran número de ecosistemas húmedos, cada uno con sus variaciones características con respecto a la biodiversidad. El Gobierno trata de proteger los humedales existentes contra los factores adversos externos y a la vez intenta lograr una mejor calidad de los mismos. Mientras antes el manejo hidrológico se concentró en la regulación y en la protección contra las inundaciones, en la actualidad se vuelve a experimentar con sistemas más naturales que dan más espacio a la biodiversidad.

El capítulo 3 trata de los esfuerzos que se realizan en los Países Bajos en el área de la conservación y del uso sostenible de la **agrobiodiversidad**. La calidad de la biodiversidad de muchos paisajes agrícolas se ve cada vez más amenazada en nuestro país. Por este motivo, en los Países Bajos se dedican muchos esfuerzos a la recuperación de la variación genética de razas, los elementos biológicos y de paisaje relacionados con las prácticas agrícolas, y los organismos y procesos que sustentan la producción.

Resumé

Ce rapport décrit les efforts entrepris par les Pays-Bas pour atteindre les objectifs de la Convention sur la Diversité Biologique (CBD). La politique des Pays-Bas vise à concilier la préservation et l'utilisation durable de la biodiversité dans les secteurs concernés. Pour ce faire, les Pays-Bas mettent systématiquement en pratique une approche centrée sur l'écosystème. La participation des citoyens et des organisations est de plus en plus importante pour les activités de planification et de réalisation. L'éducation et l'information deviennent donc, elles aussi, de plus en plus importantes. Le principal pilier de la conservation in situ de la biodiversité aux Pays-Bas est le "Réseau écologique national" (EHS): un réseau national d'espaces naturels terrestres et aquatiques qui s'accroît constamment et qui couvrira finalement 750 000 ha. Les Pays-Bas consacrent environ 0,1% du produit national brut à la politique internationale de la biodiversité et de l'environnement. Ils sont ainsi parmi les principaux donateurs dans ce domaine.

Thèmes de la 6ème session de la Conférence des Parties: Les forêts couvrent à l'heure actuelle 11% de la superficie nationale et font principalement office d'espaces de loisirs et de protection de la nature. Les organismes chargés de leur surveillance et de leur gestion travaillent de concert avec les pouvoirs publics au développement d'une gestion durable du patrimoine forestier, ainsi que d'une certification conforme à la norme nationale FSC. Dans le domaine des **ressources génétiques**, les Pays-Bas développent une politique active de préservation et d'utilisation durable. Dans ce cadre, des accords ont été conclus avec les cultivateurs et les éleveurs néerlandais quant à la suite à donner à la CBD. Pour la régulation des **variétés exotiques** dans l'agriculture, les Pays-Bas disposent d'un vaste système de prévention et de réglementation. Les variétés exotiques présentes dans la nature ne retiennent l'attention qu'incidemment.

Aux Pays-Bas, les **recherches** réalisées dans le domaine de la biodiversité sont très variées et couvrent tout un éventail de problèmes tels que, notamment, les relations entre les espèces, les changements climatiques et la modification génétique des organismes. Pour la surveillance de la biodiversité, un Réseau de surveillance écologique (NEM), auquel contribuent des milliers de volontaires, a été mis en place. Des indicateurs permettant le suivi de la biodiversité et celui, par les décideurs, des progrès de la politique mise en oeuvre, sont en cours de développement. Quant aux études d'impact sur l'environnement qui, aux Pays-

Bas, relèvent de dispositions législatives, les efforts visent à y inclure la biodiversité de façon plus intégrale qu'auparavant.

Les chapitres 2 et 3 traitent de thèmes spécifiques à la situation néerlandaise. Les activités entreprises par les Pays-Bas concernant les programmes thématiques afférents du CBD y sont exposées. Le chapitre 2 a pour thème "**Les zones humides et l'eau**". En raison de leur caractère unique de delta, les Pays-Bas comprennent un grand nombre d'écosystèmes humides, abritant chacun une biodiversité spécifique très variée. Les pouvoirs publics tentent de protéger les zones humides des incidences extérieures néfastes, tout en oeuvrant à l'amélioration de leur qualité. Si la gestion de l'eau était autrefois surtout orientée vers la régulation et la protection contre les inondations, on retourne aujourd'hui à des systèmes plus naturels offrant davantage de place à la biodiversité.

Le chapitre 3 se penche sur les efforts entrepris par les Pays-Bas aux fins de la conservation et de l'utilisation durable de **l'agrobiodiversité**. Dans notre pays, la biodiversité de nombreux paysages de culture est de plus en plus souvent menacée. Les Pays-Bas travaillent donc d'arrache-pied au rétablissement de la variété génétique des espèces, des éléments biologiques et paysagers liés aux pratiques agricoles, et des organismes et des processus biologiques qui soutiennent la production.