Convention on Biological Diversity

Fifth National Report of the Kingdom of the Netherlands

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Contents

Executive summary

The fifth national report is used by the Conference of the Parties to assess the status of implementation of the Convention on Biological Diversity (CBD). It will provide information for a mid-term review of progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and progress towards the Aichi Biodiversity Targets. The (CBD) has 3 main objectives:
1. The conservation of biological diversity.
2. The sustainable use of the components of biological diversity.
3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
This report shows the contribution of the Netherlands to these objectives.

The National Ecological Network (NEN), including 164 EU Natura 2000-sites, is the cornerstone of biodiversity conservation in the Netherlands. The development of the NEN began in 1990 and it is still increasing in size. The NEN, in combination with management measures and a substantial decline of environmental pressures, has slowed down the rate of biodiversity loss in the Netherlands. In the last three years the Dutch government decentralised responsibilities of realization and management of nature to the provinces. In 2013 ambitions towards 2027 were agreed upon in the so called Nature Pact between the national government and the provinces, including extension of the NEN, management of nature and environmental conditions, improving the system of nature management by farmers and more cross-sectoral strategies to integrate nature management with other spatial functions.

Ongoing urbanisation, transport and industrial, agricultural and fishery activities cause environmental pressures on biodiversity. The reforms of the EU Common Agriculture Policy and Common Fisheries Policy can become important milestones for reducing their impact and to improve the sustainable use of the components of biological diversity. Also legislation on environmental and spatial issues is important in this respect. Society becomes more and more aware of the importance of biodiversity and the need for ecosystem restoration and sustainable use of ecosystem services. In consultation with civil society groups the Dutch government has developed a number of biodiversity policy documents contributing to the CBD-goals.

Internationally The Netherlands also works on biodiversity related issues with the aim of preventing negative impacts on tropical forests, mangrove forests, marine and other ecosystems, and on constraints on the trade in endangered species and products made of these species. Partially via support for sustainable development programmes in its development cooperation portfolio and via climate funding, partially also by facilitating the formation of coalitions of Dutch businesses, CSOs, knowledge institutes and government institutions around value chains like timber, soy, palm oil and shrimps that are critical to biodiversity; Dutch multinational agri-businesses are also motivated by the Dutch government 'to look beyond value chains' into the sustainability of the landscapes around agricultural production areas in (sub-)tropical countries.

The Kingdom of the Netherlands also includes six islands and marine areas within the Caribbean biodiversity hotspot. This executive summary elaborates on each of the questions provided by the CBD for the Netherlands. It then describes the situation in the Caribbean Netherlands and concludes with the autonomous Caribbean countries of Aruba, Curacao and Saint Maarten.

The Netherlands doesn't have one National Biodiversity Strategy Action Plan (NBSAP) but has integrated the Aichi targets into several policy plans like the Nature Pact and Natural Capital Agenda. A nature vision will become available in April 2014.

The Netherlands

Q1: Why is biodiversity important for your country?

In 2005 the Millennium Ecosystem Assessment pointed out that human well-being and socio-economic development is based more or less directly on the delivery of ecosystem services, such as food, fibre, fuel, water supply and the control of natural hazards. While we have come a long way in gaining our independence from the limits of our physical environment, a sound understanding of the relevance of biodiversity and natural resources is necessary to achieve the sustainable use of biodiversity and ecosystem services. This understanding begins with general awareness about the importance of biodiversity and participation in conservation.

The importance of biodiversity can be made more explicit when its economic, social and cultural values are quantified in euro's or employment. In order to show the economic value of ecosystem services the Dutch Government commissioned the TEEB studies (The Economics of Ecosystems and Biodiversity) in 2011. These studies aim to support the decision-making process for policy-making and large investment projects of government, business and civil society. The results of the TEEB-study 'Green, healthy and productive' among others indicate that investing in green spaces, particularly in urban areas, reduces health care costs and absenteeism at work, which may represent an economic value of hundreds of millions of euro's.

Q2: What major changes have taken place in the status and trends of biodiversity in your country?

The efforts to halt biodiversity loss in the Netherlands effectively began with the implementation of the National Ecological Network (NEN) from 1990 onwards. The NEN has improved, connected and extended natural areas, including 164 sites designated under Natura 2000, the centrepiece of EU nature & biodiversity policy. The NEN has reversed the loss of natural area and created an increase, mostly through nature development on former agricultural land. Together with an environmental policy that diminished environmental pressure, such as desiccation, water and air pollution, it gradually slowed down the rate of biodiversity loss. After years of increase, the number of Red List animal and plant species has more or less stabilised. Wintering and migrating bird numbers have almost doubled in the past 30 years. Most commercial fish stocks have recovered or are recovering from periods of overfishing. Reintroductions of species like Otter (*Lutra lutra*) and Beaver (*Castor fiber*) are generally regarded as successful and the return of other inspirational species like Common crane (*Grus grus*) and White-tailed Eagle (*Haliaeetus albicilla*) to the Netherlands is also a positive development.

However these success stories cannot disguise the fact that, despite all efforts, biodiversity loss still continues. Many threatened Red List species show further population declines, with farmland birds among the most dramatic. Europe's most valuable and threatened species and habitat types are protected under Natura 2000. However, the conservation status of 75% of the protected species and 95% of habitat types for which the Netherlands hold responsibility, have recently been assessed as more or less unfavourable. In general, the more generalist species increase in number whereas specialist species decrease. A similar homogenisation process can be observed among agro-genetic species. The selection of the most productive breeds caused rapid declines of agro-genetic diversity in both livestock and crops. To date 92% of Dutch livestock breeds are regarded as threatened, while inbreeding threatens half of the remaining 8%. Nowadays conservation of these species largely depends on hobbyist breeders and garden keepers, rather than on farmers.

Q3: What are the main threats to biodiversity?

To date habitat fragmentation, atmospheric nitrogen deposition, desiccation and acidification are still major threats to terrestrial biodiversity in the Netherlands. While spatial connectivity is improved and the natural area increased by the NEN, spatial requirements for some species will still not be met. While nitrogen deposition decreased substantially due to environmental measures to

reduce the pressures, such as emission measures in agricultural practice, two-thirds of the natural area still exceeds the critical load for nitrogen deposition. Desiccation is still also present in over 90% of the area of groundwater dependent nature. At sea the main threat to biodiversity still comes from pollution due to discharges and the fishing industry, where trawling and by-catch in particular are threatening bottom fauna and long living slow reproducing species, like sharks and rays. Though the threats described above are (gradually) declining, the threat of potentially invasive exotic species entering the Netherlands is increasing, and may be enabled through the influence of climate change.

Q4: What are the impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts?

The policy and research on ecosystem services is quite new in the Netherlands, but substantial efforts are being undertaken to better understand their impacts for society. TEEB studies have been carried out and an indicator on the status and trends of the main ecosystem services is foreseen for 2014. This indicator will compare the difference in demand and supply of the service, the portion of sustainable consumption and production and the portion that is produced in the Netherlands or has to be imported from elsewhere.

Q5: What are the biodiversity targets set by your country?

In 2011 the EC adopted a strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. The main goals of the EU Strategy reflect the priorities that have also been recognized by the Dutch government. This strategy covers six main targets: (1) Full implementation of EU nature legislation to protect biodiversity; (2) Better protection for ecosystems, and more use of green infrastructure; (3) More sustainable agriculture and forestry; (4) Better management of fish stocks; (5) Tighter controls on invasive alien species; (6) A bigger EU contribution to averting global biodiversity loss.

Q6: How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

The Netherlands released a number of biodiversity policy documents. The '*Natural Capital Agenda 2013'* is based on the CBD agreements and also on the recommendations in the advice '*Green growth*', which was provided by the Dutch Taskforce on Biodiversity and Natural Resources in 2011. It provides recommendations on the sustainable use of biodiversity. The Agenda aims at: (I) Sustainable production and consumption: sustainable trade chains; (II) Sustainable fisheries and protection of marine biodiversity; (III) Sustainable agriculture and protection of biodiversity; (IV) Natural capital accounting.

In the last three years the Dutch government decentralised responsibilities of realization and management of nature to the provinces. In 2013 the ambitions towards 2027 were agreed upon in the so called Nature Pact between the national government and the provinces. The ambitions agreed upon include:

- extension of the NEN with ca. 80.000 hectares, including realisation of important ecological connections;
- management of nature an environmental conditions aiming to meet the goals set by the EU Birds and Habitats Directives;
- improving the system of nature management by farmers aiming to be more efficient and more effective;
- more cross-sectoral strategies to integrate nature management with other spatial functions, like land and water management and recreation.

A *nature vision* is planned for April 2014 and will be the most recent biodiversity policy document and includes the targets: (1) To create a robust National Ecological Network (NEN); (2) Improve environmental conditions for species protection; (3) Regional approach to agri-environmental management; (4) Nature integrated in economic growth; (5) The use of self-organizing abilities of

citizens, companies and organizations. The national strategy continues to contribute to protection and sustainable use of biodiversity and ecosystems but differs from the former strategies in the following aspects:

- Citizens, companies and social organizations have an increasing responsibility to contribute to nature protection.
- That the consequences of climate change in relation to the ability to preserve nature are taken into account.
- That the advantages of combining nature protection with other social interests are maximised.

Q7: What actions has your country taken to implement the Convention since the fourth report and what have been the outcomes of these actions?

The actions to implement and achieve the conservation objectives concerning the NEN and Natura 2000 are on-going, as well as the efforts to decrease the threats to biodiversity. The '*Programmatic Approach to Nitrogen*' aiming to limit nitrogen pollution caused by fertiliser use and intensive livestock breeding is foreseen for implementation in 2014 and can be considered to be the most important strategy to improve environmental conditions necessary for biodiversity protection.

The '*Natural Capital Agenda 2013*' intends to facilitate new and existing initiatives that relate to greening of consumption and production patterns, mapping the value of ecosystem services and developing additional financial investments in biodiversity. Concrete schemes and initiatives include the Platform Biodiversity, Ecosystems & Economy (Platform BEE; a partnership between government, private sector and NGO's), TEEB studies and, for example, the approx. 150 'Green Deals' on biodiversity, energy, climate, water, raw materials, mobility, bio-based economy, construction and food. Several actions have also been taken to further raise biodiversity awareness, among which the release of the policy programme '*Progress in Sustainability, By Social Innovation for a Green Economy*''. From 2014 onwards concrete actions and outcomes of the '*Natural Capital Agenda 2013*' will be integrated within this programme.

Q8: How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The Dutch government carries out substantial efforts aiming to mainstream biodiversity in a wide range of sectors. Most relevant in this sense are the agriculture, forestry and fishery sectors. With approx. 60% of land-use, the agricultural sector dominates the terrestrial landscape. This highly mechanised and productive sector depends on high levels of external inputs like mineral fertilizer, manure, livestock feed, pesticides and energy. As such the development of the sector over the last 60 years can be regarded one of the important causes for the loss of natural habitat and a decrease in environmental conditions. Over the same period the level of input has steadily decreased due to increasing efficiency and the use of environmentally less damaging alternatives. Integration of nature management with farming has long been one of the answers to this. The efforts in the past 20 years to restore or maintain nature areas and wild species on agricultural land, has recently been assessed as not effective enough on a national scale and the structure of agri-environmental schemes is therefore currently being revised. The new approach focuses on groups of farmers integrating nature management in their farming system, jointly covering a substantial area. It is expected that the effects of this agri-environmental scheme on biodiversity will be positive over much larger areas. Moreover this collective way of agricultural nature management should also improve the resilience and efficiency of the whole agri-environmental system. A revised EU Common Agricultural Policy will become effective in the new CAP period 2014-2020.

The forestry sector took major steps to increase the proportion of wood from sustainably managed forests on the Dutch market, 92% of which is imported. No less than 65.7% of timber products sold in the Netherlands was FSC or PEFC certified in 2011. The amount originating from sustainably managed biodiversity rich tropical forests was 39% and has more than doubled since 2008. So far

forestry in temperate zones is mainly benefitting from timber certification schemes. Therefore a Green Deal '*Promoting Sustainable Forest Management*' was signed in 2013 between the Dutch Ministry of Economic Affairs and 27 Dutch public and private parties in the timber sector in order to get more certified wood from sustainably managed tropical forests on the Dutch timber market. In March 2013 the EU Timber Regulation (EUTR) came into effect, which prohibits illegally harvested timber (products) from being placed on the EU market. The Netherlands still needs to ensure at national and EU level that imported FSC and PEFC certified timber can enter a 'green lane' under the EUTR to prevent timber harvesting and trading companies from having to go through elaborate protocols twice. The round tables for soy and palm oil, initiated by the Dutch Trade Initiative, have contributed to a decreasing rate of deforestation in tropical countries.

In the last four years the Netherlands has played an important role in debates around the negative environmental and social effects, particularly in (sub-)tropical countries, of the EU climate mitigation policies to blend fossil fuels and biofuels. Dutch and local NGO's and knowledge institutes were supported by the Dutch government to conduct research in the field of biofuels, to pilot new biofuel production options and related technology such as cooking devices based on biofuels, and to raise awareness around positive and negative effects of biofuels.

Major steps taken by the fishery sector, such as catch quotas and fleet capacity reduction, turned out to be effective. Important commercial fish stocks such as herring, sole and plaice in de North Sea have recovered or are recovering from overfishing. Trawling with chain beams and by-catch are still a major concern though, especially for bottom fauna and long living, slow reproducing species. Measures to reverse these impacts, like the forbidding of discards, will be subject of the next EU Common Fisheries Policy (CFP) which will enter into force in 2014. The consumption of Marine Stewardship Council (MSC) labeled fish is increasing.

Substantial efforts have also been made to make the (small) aquaculture sector which mainly concerns Blue Shell Mussel (*Mytilus edulis*) and the threatened Eel (*Anguilla anguilla)* more sustainable. Reproduction of Eel in captivity is still hardly possible. The Netherlands therefore also take part in the "Coalition of the Willing for a High Seas Marine Protected Area" which aims to give the Caribbean Sargasso Sea (the nursery ground of the European Eel) the status of Marine Protected Area. The effects are promising. Several important actions for mainstreaming biodiversity into the most relevant cross-sectoral strategies are defined in the Natural Capital Agenda.

Q9. How fully has your national biodiversity strategy and action plan been implemented?

In 2011 the EC adopted a strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. The main goals of the EU Strategy reflect the priorities that have also been recognized by the Dutch government.

Q10: What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

The twenty Aichi Biodiversity Targets for 2015 or 2020 are organized under five strategic goals. The goals and targets form a flexible framework for the formulation of national targets. The progress on each of the twenty Aichi-targets is summarised per strategic goal.

<u>Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.</u>

Aichi-target 1. Awareness increased (by 2020).

Most people in the Netherlands are aware of biodiversity in their surrounding area and carry out low threshold activities to maintain it, for example to feed the birds during winter. The number of volunteers in nature management, in observation and monitoring, and in nature education is increasing while the number of financially contributing members of nature conservation

organisations has decreased due to the economic crisis. Dutch NGO's are very active in organising activities to increase public awareness and to involve citizens in their activities. Besides, a growing number of people realise that nature is not one of the four top priorities for the government. The economic crisis and governmental budget cuts have been at the top of public priorities for several years.

The Netherlands has always had active programmes at all levels of government for supporting awareness raising and communication about biodiversity and nature. Recently, the present government has taken new steps to increase awareness and involvement of the Dutch government and is planning to involve citizens, business and industry (Min. EZ, 2013).

Aichi-target 2. Biodiversity values integrated (by 2020).
The Dutch government has integrated biodiversity values into national and local development strategies and planning processes and these are being incorporated into national reporting systems. Regional governments have incorporated the National Ecological Network (NEN) in their spatial plans since ca. 1995. Local governments also incorporated the NEN in their spatial plans because they authorize spatial development. They use spatial information about protected species to demand mitigation and compensation measures when they allow spatial development and construction within their territories.

Aichi-target 3. Incentives reformed (by 2020).
The Netherlands gives a high priority to greening of the EU common policies on agriculture and fisheries. This will eliminate, phase out or reform incentives that are harmful to biodiversity, while positive incentives are developed and applied. Large environmentally harmful subsidies are especially found in the energy, transport (red diesel) and agricultural sectors (low VAT on meat and dairy), in 2010, in the Netherlands, representing between 5 and 10 billion euros (PBL, 2011a). The Dutch Government could abolish certain environmentally harmful subsidies at a national level, but for competition reasons this would require agreements at a European or global scale.

Aichi-target 4. Sustainable Consumption and Production (by 2020).
Governments, business and other stakeholders at all levels are taking steps to achieve sustainable production and consumption. The Dutch government cooperates with the private sector through initiatives such as the Platform Biodiversity, Ecosystems and Economics (Platform BEE; a partnership involving government, private sector and NGO's), and the Green Deals programme, for example to reduce CO2 emissions in the dairy sector and to allow temporary nature to develop on construction sites. Major steps have also been taken to keep the impacts of the use of natural resources within safe ecological limits; though concern still exists about the reform of the agricultural and fishery sector and the ecological footprint of the Netherlands, especially abroad.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.

Aichi-target 5. Habitat loss halved or reduced (by 2020).
The on-going development of the National Ecological Network (NEN) has led to defragmentation of habitat and the development of new natural areas and has turned habitat loss into a habitat increase. Habitat loss by degradation is significantly reduced, mainly due to an improvement in environmental conditions such as desiccation and nutrient enrichment. However, environmental and spatial conditions are still insufficient to meet the biodiversity target set by the European Union for the Natura 2000 network of habitat types. About two thirds of nature reserves suffer from at least one pressure and mostly from a combination of nitrogen deposition and desiccation. Ecosystems like heather and open dune areas did not improve and their habitats still degrade, but the degradation of habitats in marsh land stopped.

Aichi-target 6. Sustainable management of marine living resources (by 2020).

For most of the important commercial fish, the stocks are currently within safe biological limits. However, not all effects of unsustainable fishery have been restored. Vulnerable long lived shark and ray species are still critically endangered or threatened. The European Union is responsible for policies for management of marine living resources in Europe and countries where European fisheries operate: Common Fishery Policy (CFP). In addition to that the Netherlands Government stimulates (technical) innovations aiming at more sustainable fisheries, while management plans for marine Natura 2000-sites and a Marine Strategy Framework Directive are currently being developed in order to conserve marine biodiversity. The Wadden Sea in the North of the Netherlands is an internationally recognised UNESCO natural Heritage Site with an abundance of marine species. It is also a crucial foraging site for large numbers of migratory birds on the flyway from Scandinavia to Africa.

Aichi-target 7. Sustainable agriculture, aquaculture and forestry (by 2020).
Sustainability and biodiversity are more and more integrated within the Dutch agriculture, aquaculture and forestry sectors. Biodiversity is fully integrated within forestry and a small but growing part of Dutch agriculture is certified as biological agriculture. The 'regular' agricultural sector as a whole is moving towards sustainability in production and consumption, but developments are slow. The emissions of nitrogen and phosphates into the environment have decreased but are still above the critical limits. The population of birds on farmland is still decreasing and considerable efforts are being made to find a new system to improve biodiversity on farmland. The recent establishment of '*Veldleeuwerik*', a coalition of farmers, biological seeds breeding companies and Integrated Pest Management (IPM) specialists, farm sector organisations, agri-businesses like Heineken Beer and provincial authorities aiming to promote sustainable agriculture, is considered to be a breakthrough in terms of within sector collaboration and joined-up sustainable thinking. It is an example of what can be accomplished in a short period of time in terms of increasing production and productivity when biological sub-sector players join forces. This can also create a new export market e.g. for biological seed breeding companies and IPM specialists.

Aichi-target 8. Pollution reduced (by 2020).
The environmental conditions in the Netherlands have substantially improved since the 1990's. The acidification problem for instance has more or less been solved, while nitrogen deposition and eutrophication of surface waters has substantially decreased. However, pollution by agricultural nutrients is still above critical levels and is detrimental to ecosystem function and biodiversity. The Dutch government and the provincial governments prepare the Programmatic Approach Nitrogen (PAS) in order to reduce nitrogen pollution mainly by intensive livestock breeding. Measures will be taken to reduce nitrogen emissions on the one hand and nature restoration measures on the other hand. Also, member states of the EU are obliged to renew their action programme under the Nitrates Directive (ND; 91/676/EEG) every four years. The Nitrates Directive aims to prevent or decrease water pollution caused by nitrates from agricultural sources. The renewed (5th) Dutch action programme will become effective in the beginning of 2014. This programme aims to establish, on average, equilibrium fertilisation as regards phosphate, and aims to achieve, on average, the target value of 50 mg/l in groundwater in all areas of the country. Thus, the programme will also contribute to the achievement of Water Framework Directive (WFD) goals. However, to actually achieve these goals, an intensified effort is necessary. The WFD River Basin Management Plans which will be established in 2015 are the framework for this effort. In this respect, it is relevant that under Rural Development Program 3 (RDP3), a significant sum of money will be set aside to help achieve ND and WFD goals.

Aichi-target 9. Invasive alien species prevented and controlled (by 2020).
The number of alien plant and animal species in the Netherlands still increases. Because it is not clear when an alien species becomes invasive and it is difficult to eradicate them once settled, Dutch

policy, since 2007, is focused on prevention. Prevention is mainly achieved by agreements (e.g. on the sale of invasive water plant species), and complementary to this, the Dutch Flora and Fauna Act prohibits the release of animal and plant species in the wild which makes it possible to act if invasive alien species are introduced. In some cases eradiction actions have been undertaken. In September 2013 the European Commission published a dedicated legislative instrument (regulation) on Invasive Alien Species. The Netherlands supports this initiative and will work together with the European member states on the establishment of a list of invasive alien species of European interest.

Aichi-target 10. Pressures on vulnerable ecosystems reduced (by 2015)
The Dutch Wadden Sea is one of the most valuable and vulnerable ecosystems, with its intertidal mudflats that are among other things exposed to sea-level rise due to climate change. Millions of migratory and resident birds, thousands of seals and other species depend on this ecosystem. A nature rehabilitation programme 'Towards a healthy Wadden Sea Ecosystem for nature and man' was launched to keep the ecosystem healthy, resilient and robust to face the impacts of climate change in the future. For other vulnerable areas, the Dutch government joined forces with knowledge institutions and private enterprises and together they are seeking to 'build with nature' in order to cope with the impacts of climate change. 'Building with Nature' is an innovative Dutch design approach that takes the ecosystem as a starting point and makes use of natural processes for the sustainable management and protection of coastal, delta and riverine regions. This design approach also leads to new natural areas with rich biodiversity as is currently visible in an area close to the seaside city of The Hague. The policy survey 'Nature Ambition Great Waters 2050- 2100 ', policy options for conservation of nature around the great waters (such as estuarine ecosystems) builds to a great extent on this new concept.

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

Aichi-target 11. Protected areas increased and improved (by 2020).
With the designation of the NEN and 164 Natura 2000 sites the Netherlands have already reached the 2020 target to protect at least 17% of its terrestrial area and inland waters and 10% of its coastal and marine areas. The total protected area is still increasing with the completion of the NEN that will take place in the coming years. Implementation of management plans and further defragmentation of nature will improve nature quality, though the extent to which this will happen largely depends on the achievements in relation to decreasing the biodiversity threats.

Aichi-target 12. Extinction prevented (by 2020).
The number of species on some red lists is more or less stable or declining. The trend in population size of several of the red list species is still declining though. Overall, the conservation status of threatened species, whether listed under Natura 2000, the National or IUCN Red Lists, can be regarded unfavourable. Prevention from extinction requires species protection plans, as well as international cooperation for threatened migratory species.

Aichi-target 13. Genetic diversity maintained (by 2020).
The selection of the most productive breeds has caused rapid declines of agro-genetic diversity in both livestock and crops. To date 92% of native livestock breeds are regarded threatened. The strategy to conserve these breeds and crops can be summarised as 'use it or lose it' and their conservation nowadays largely depends on hobbyist breeders and garden keepers. Crop diversity is maintained in gardens and in-garden maintenance of traditional varieties has been shown to represent a robust conservation system. The genetic diversity of crops is largely maintained in ex situ collections in the country and abroad.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Aichi-target 14. Ecosystems and essential services safeguarded (by 2020).
Despite the current focus on essential ecosystem services in the Netherlands their analysis and valuation is still at an early stage, as is the process towards their restoration and safeguarding.

Aichi-target 15. Ecosystems restored and resilience enhanced (by 2020).
Further reduction of biodiversity threats and completion and sound ecological management of the NEN, including all Natura 2000-sites, will enhance the resilience of ecosystems and contribute to the mitigation of climate change.

Aichi-target 16. Nagoya Protocol in force and operational (by 2015).
The Netherlands signed the Nagoya Protocol in 2011 and negotiations on implementing legislation within the EU will have to result in EU and national implementation in the years to come. Also, the Dutch government supports initiatives in relation to Access and Benefit Sharing cooperation with third countries. The Nagoya protocol is expected to be in force and operational by 2015.

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

Aichi-target 17. National biodiversity strategy and action plans adopted as policy instrument (by 2015).
The *'Natural Capital Agenda 2013*' is the most current biodiversity agenda, sent to the Dutch parliament in June 2013, that addresses the key challenges of the 2020 biodiversity targets. In 2013 the national government and the provinces agreed upon the ambitions towards 2027 concerning the development and management of nature in the Netherlands in the Nature Pact. A nature vision will become available in April 2014. The 2015 Aichi-target will therefore be achieved.

Aichi-target 18. Traditional knowledge respected (by 2020).
The Netherlands has no indigenous peoples or local communities as defined by the CBD within its borders. In development cooperation and climate related programmes the use of traditional knowledge about biodiversity is often integrated.

Aichi-target 19. Knowledge improved, shared and applied (by 2020).
The Netherlands has a long history of environmental research and biodiversity monitoring. The task to report about the results is set out within the legal framework of the Nature Conservation Act. Dutch nature policy is largely based on the outcome of these reports. The information is widely available at the website www.compendiumvoordeleefomgeving.nl which includes some 2000 indicators. An overall indicator of ecosystem services or availability of natural capital is still under construction.

Aichi-target 20. Financial resources from all sources increased (by 2020).
The Netherlands has compiled data on biodiversity related Official Development Assistance ODA spending for the period 2006-2010 for the EU Monterrey Accountability Report. These figures can also be used to calculate the ODA component of the Dutch baseline for the CBD agreement on resource mobilization to support poor countries for the protection and sustainable use of their biodiversity. Other financial resources for biodiversity come from Ministries, NGO's for nature conservation like WWF-Netherlands with ca 2.2 million contributing members and from Dutch companies. Currently no reliable estimates are available for these financial streams.
The Hyderabad commitments, for doubling total biodiversity-related international financial resource flows to developing countries in 2015 compared to the baseline 2006-2010, was agreed as a global collective target during the 11th Conference of the Parties to the Convention on Biological Diversity (COP 11, Hyderabad 2012). Current actions by the Netherlands are in line with the agreements made

at COP 11 in terms of stabilising the level of spending for global biodiversity. In the coming years The Netherlands will develop a methodology to estimate the contributions of Dutch non-governmental players to the accomplishment of the Aichi targets.

Q11: What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?

The environment as a component of sustainable development is integrated in most policies and interventions of the Directorate General for International Cooperation (DGIS) such as: attention for environment-related services, "greening" of all relevant development sectors and sustainable management of the worlds' ecosystems. The Netherlands particularly aims to contribute to achieving the Millennium Development Goals MDG1, MDG7 and MDG8: linking poverty alleviation to the sustainable use of natural resources, creating a better environment and facilitating sustainable and equitable growth (in clean and green trade chains).

The PROFORIS database contains information on Netherlands Government funded programmes and projects in the areas of international nature, forest, water and biological diversity. The multi-annual plan Climate, Energy, Environment and Water as well as the Natural Capital Agenda 2013 describes several actions in developing countries, that are to be supported by the Netherlands in the coming years, and which are in line with the MDG targets. A conference on food and biodiversity will be organised by the NL Ministry of Economic Affairs in 2014 to generate practical recommendations for a better synergy between biodiversity and food production. These will also be applied in Dutch supported projects on integrated land use planning in (sub) tropical developing countries. Some of these projects will be conducted in areas with high biodiversity potential. Where possible they will be linked to food security or water programmes that are funded by the Ministry of Foreign Affairs and Dutch Embassies. In cooperation with Dutch multinational businesses and other potential funders at least two projects will be implemented to restore degraded ecosystems. These pilots have to prove that businesses understand their long term interests in a sustainable supply of biotic products and raw materials can and will contribute to ecosystem restoration and that degraded areas can be converted into productive and biodiverse systems.

Q12: What lessons have been learned from the implementation of the Convention in your country?

The Dutch government installed a Taskforce on Biodiversity and Natural Resources in order to evaluate the current situation and to look for the best ways and methods to protect biodiversity and to use biodiversity sustainably. The Taskforce's composition reflected this broad challenge. Its members came from different groups in society: trade and industry, science, social organisations and the government. The following recommendations were presented to the government on December 13th 2011:

- Raising awareness for a sound understanding of the relevance of biodiversity and natural resources for our economy and wellbeing;
- Efficient land use, meaning that agriculture should take place in the areas most suitable for it and that nature is preserved in coherent ecological networks;
- Greening the economy to reduce the pressure from Dutch production and consumption patterns on biodiversity;
- Coherent government policy by all relevant policy areas, including agriculture and fisheries, international cooperation, environmental policy, industry policy and trade policy;
- Establishing public-private partnerships.

The policy document 'Natural Capital Agenda' (Min. EZ & Min. I&M, 2013) is based on the recommendations provided by the Dutch Taskforce on Biodiversity and Natural Resources. Actions in this agenda aim to create (more) synergy between the main goals of the Convention on Biodiversity:

1. The conservation of biological diversity.

2. The sustainable use of the components of biological diversity.

3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Caribbean Netherlands

After 10-10-2010 the Netherlands was requested to take direct responsibility for the biodiversity on and around the Caribbean islands of Bonaire, Saba and Saint Eustatius following their choice to become Dutch municipalities. These are part of the 'Caribbean biodiversity hotspot' which consists of hundreds of endemics, several globally threatened species and ecosystems like the Saba Bank, with 2200 km² of Caribbean's largest sub-marine coral atoll. The biodiversity is vulnerable due the generally small island species populations and substantial threats from climate change, invasive alien species, overgrazing, nutrient loads and overfishing.

The first Nature Policy Plan (2013-2017; Min EZ, 2013a) for the Caribbean Netherlands has been developed for the 5-year period 2013-2017. Since then, the ministry has been supporting the island governments and NGO partners in policy development and implementation, particularly in terms of capacity. Mainstreaming of nature conservation and sustainable use in all sectors of society is one of two main targets of the Nature Policy Plan and concerns 17 strategic actions in the field of international, national and juridical affairs. The other policy target concerns the actual conservation of biodiversity and includes 15 strategic actions, like improved planning and management of protected areas, research and monitoring, communication, education and public awareness (CEPA) activities and restoration of degraded ecosystems. The increased involvement of the Netherlands supports the work of local governments and NGO's and seeks to ensure that progress could and will be achieved on most of the Aichi-targets in the coming years. The small islands however are generally more vulnerable to external influences, such as from climate change, than larger countries. The extent to which Aichi-targets can be achieved therefore greatly depends on achievements on a regional and/or global scale.

Aruba, Curacao and Saint Maarten

The autonomous Kingdom partners of Aruba, Curacao and Saint Maarten have also made progress. These islands are larger, more pluralistic and more industrialized. Fortunately, on these three islands NGO activity and public awareness around ecosystems and biodiversity is rather high. However, there are important differences in terms of state, direction and rate of change of biodiversity policy development and implementation between Aruba, Curacao, and Saint Maarten. It is important to place the biodiversity related analysis in a regional context, as most Dutch Caribbean islands cope with the same kinds of issues that are faced by all the other Caribbean SIDS (Small Island Developing States) (IUCN 2010). An assessment of progress towards the Aichi-targets for the three island countries was made by experts. They concluded that the three islands still need to improve a lot in order to reach the Aichi-targets and that certain biodiversity aspects are worsening on these islands.

Aruba

The 10/10/10 Kingdom constitutional changes have not affected Aruba, as Aruba has been a separate country since 1986. Aruba is the most arid of the Dutch Caribbean islands and therefore most vulnerable to overgrazing and erosion, two problems which have not yet been properly addressed. Therefore, and adding continued urbanization and development, actual and potential risks of extinction and biodiversity loss remain very high with many tree and plant species expected to disappear in the coming decades. While progress has been made in terms of sustainable energy ambitions and development, biodiversity management remains fragmented and embattled, with no recent structural policy advances to report since 2000 when the Arikok National Park was legally

installed by Ministerial decree. The newly established Directorate of Nature and Environment (2012) has the task and challenge to develop policy that will steer the development of Aruba in a more sustainable direction and that will strengthen emerging elements of a green economy. Various draft bills have been prepared, e.g. to protect endangered and iconic species, to protect Aruba's RAMSAR site, Spanish Lagoon and to protect the Lago key's for the nesting terns.

Biodiversity knowledge is still limited and basic resource assessments, habitat inventories and maps with important biodiversity areas are lacking. The Directorate of Nature and Environment is currently striving to initiate resource assessments and habitat inventories and to draft nature policy, including a multi annual research and monitoring programme. Some biodiversity millennium goals have already been included in the (draft) integrated Nature and Environment Policy document 2014-2018, while the Physical Development Policy (2009) aims to address Aruba's land-use planning, safeguarding its internationally recognized critical habitats. However, implementation of this policy remains pending. Consequently, internationally recognized critical habitats (for instance for breeding tern populations) remain without legal or management protection despite their recent international recognition as Important Bird Areas, mainly as a result of the persistent advocacy work from the NGO conservation sector on the island. Largely uncontrolled tourism related recreational pressure and disturbance are a growing threat to Aruba's nature and archaeological sites all of which could be considered as major long term tourism assets.

There are, nevertheless, various biodiversity related initiatives, which have been in place for some time. Most important among these is the "Ruimtelijke Ordeningsplan Voorschriften" (ROPV), which aims to provide a land-use zoning for the island and cooperation with other Kingdom partners to develop and implement a plan for the management of the (offshore) biological resources of the Dutch Caribbean EEZ. Civil society and private sector players actively participate in the development of these policies.

Curacao

As the largest and most populous island, Curacao has always benefitted from its stronger institutional tradition and capacity both in terms of government departments and capable NGOs. Curacao is the only Dutch Caribbean island to have a legally-instituted land-use and urban zoning plan in place which allows full legal designation of conservation areas. There is still heavy pressure due to continued urbanization in the framework of large-scale touristic development. However, there are several failed or struggling, often big tourism projects across the island and it has been suggested that large scale development for tourism should be limited. The island possesses the largest, least disturbed and most resilient ecosystems of the leeward Dutch Caribbean and its biodiversity state (e.g. vegetation, endangered species) has improved significantly in recent decades. However, institutional capacity around biodiversity management on Curacao could be strengthened, for example by clustering and pooling human resources. A worthy policy advance since 10/10/10 has been the legal designation of four RAMSAR wetlands on the island, but the management of these sites is still weak. Curacao is also participating in discussions with other Kingdom partners for the purpose of developing a comprehensive plan for the management of the (offshore) biological resources of the Dutch Caribbean EEZ as a whole.

Saint Maarten

Of the three independent Kingdom partners in the Dutch Caribbean, Saint Maarten is the island facing the greatest imminent threat to nature in terms of habitat destruction, which is proceeding at an alarming pace. Nevertheless, institutional capacity and expertise has grown recently, not only on

the part of government ministries, but also in the NGO sector. Important policy trajectories are currently on track among the most important of which is the planned implementation of a land-use zoning law. Government financing of NGO management has improved slightly as well as application of the “user pays” principle, where park user fees help defray nature management costs. Key recent policy decisions have been the legal institution of a Saint Maarten Marine Park and a shark fishing moratorium to protect these apex predators. These developments signal a new dynamism in the biodiversity decision making and implementation on the island of Saint Maarten.

Introduction

The fifth national report is used by the Conference of the Parties to assess the status of implementation of the Convention on Biological Diversity. It will provide information for a mid-term review of progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and progress towards the Aichi Biodiversity Targets. The fifth national reports will also contribute to the development of the fourth edition of the Global Biodiversity Outlook. Further, the fifth national report guidelines request Parties to report on contributions to the relevant 2015 Targets of the Millennium Development Goals.

The Convention on Biological Diversity (CBD) entered into force on 29 December 1993 has 3 main objectives:

1.The conservation of biological diversity.
2.The sustainable use of the components of biological diversity.
3.The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

This report shows the contribution of the Netherlands to achieve these objectives.

Structure

The guidelines of the fifth National Report request that the structure of the fifth national report consists of headings according to three main parts and the sub-sections of each part according to the questions set out in the guidelines. Hence, the main structure is fixed. Information and findings on status, trends and threats from part I and the actions taken at national level described in part II are used to assess how those actions have contributed to progress towards the 2020 Aichi Biodiversity Targets and to the achievements of the relevant targets of the Millennium Development Goals.

The Kingdom of the Netherlands

The Kingdom of the Netherlands has its territory in Europe and in the Caribbean, and consist of four countries: The Netherlands, Aruba, Curaçao and Saint Maarten. The latter three are located in the Caribbean. The Netherlands is located in Western Europe except for the municipalities, Bonaire, Saint Eustatius, and Saba that are located in the Caribbean. The Netherlands consist of roughly 98% of the kingdom's land area and population. Biodiversity in the Caribbean is very different from biodiversity in Western Europe. If data availably allows a distinction, the countries are discussed separately.

I - Update on biodiversity status, trends, and threats and implications for human well-being

1.1 Importance of biodiversity for the Kingdom of the Netherlands[1]

Human well-being and socio-economic development is based more or less directly on the delivery of ecosystem services, such as food, shelter, water supply, the control of natural hazards (MEA 2005). While we have come a long way in gaining our independence from the limits of our physical environment, a sound understanding of the relevance of biodiversity and natural resources for our economy and wellbeing is necessary to achieve sustainable use of biodiversity and ecosystem services and to make a lasting turn towards green growth (Taskforce biodiversiteit en natuurlijke hulpbronnen, 2011). This section will highlight the current status and trends concerning public awareness about the importance of biodiversity and participation of citizens in its conservation (§1.1.1); and the efforts made to assess the economic, social and cultural values of biodiversity and ecosystem services. Some results to date will be presented in §1.1.2. This section ends with a presentation of exceptional biodiversity and ecosystems within the Kingdom of the Netherlands (§1.1.3).

1.1.1 Awareness on the importance of biodiversity and participation in conservation

Netherlands

In the Netherlands the awareness of the importance of biodiversity is limited but increases, especially among youngsters. More than half (54%) of the Dutch population knows about biodiversity in terms of biodiversity loss, against 49% in 2007. Only a limited group (around 10%) rejects the need for nature protection (McKinsey & Company, 2010; Gallup Organisation, 2010). In 2013 a survey was carried out by TNS Political & Social network in the 27 Member States of the European Union about attitudes towards biodiversity (Flash Eurobarometer 379). Compared to the average respondents in Europe, the Dutch are less familiar with the term 'biodiversity' however, they are also more likely to say that they feel informed about biodiversity loss than respondents in other EU countries. About 75 % of the Dutch respondents think biodiversity loss is a fairly or a very serious problem, but this proportion is less than in most other European countries.

Most Dutch citizens show medium to high awareness of the importance of nature protection. This is among others reflected in the popularity of the webcam project 'Enjoy Spring' (Box 1) or the cinema production Nieuwe Wildernis (New Wilderness), about the Oostvaardersplassen protected area, which received almost 500.000 visitors in the first month after its release in September 2013.

The level of awareness is reflected in the number of people who financially support non-governmental nature conservation organisations, such as Natuurmonumenten and the World Wide Fund for Nature, which both have around 800.000 members (see fig 1). In total however a decreasing trend can be observed which might be due to the economic crisis. In 2012 Natuurmonumenten set up the Oerr club for children. The club aims to stimulate children up to 12 years to play outside and discover nature. Oerr had 150.000 new members in 2013.

[1] Where 'Netherlands' is mentioned in this report, it refers to the Western European part. Information from the Caribbean islands will be referred to by their name or 'Caribbean Netherlands'.

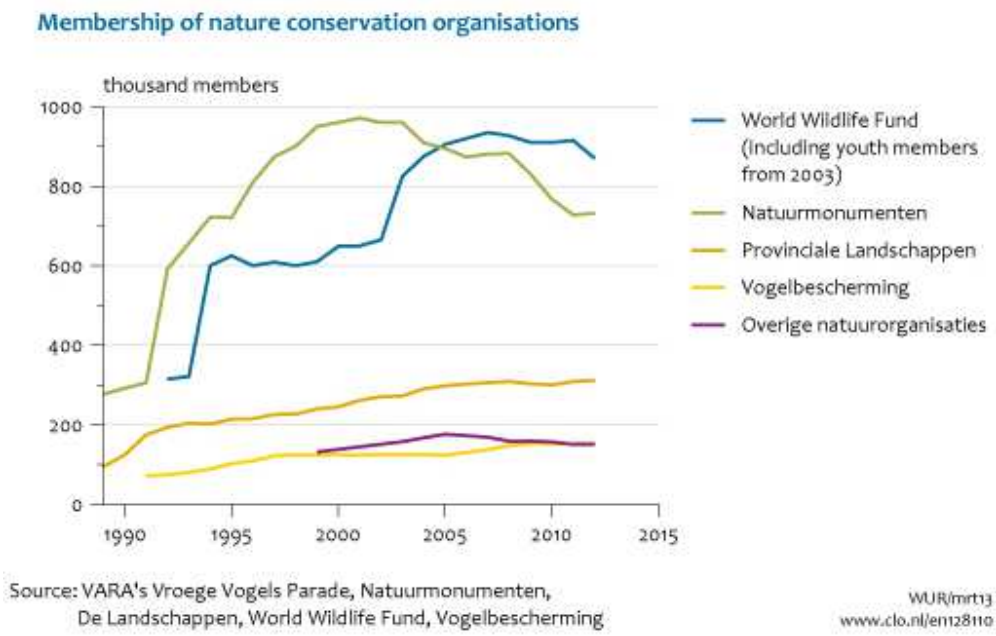


Figure 1. Trend for the number of (passive) members of nature management organisations (CBS et al., 2013j).

Box 1. Webcam project 'Enjoy Spring'

'Enjoy Spring' (Beleef de Lente) is a webcam project of the Netherlands Association for the Protection of Birds (Vogelbescherming Nederland). Since 2007 this organisation has been installing webcams near the nests of several breeding bird species such as eagle owl (*Bubo bubo*), white stork (*Ciconia ciconia*), peregrine falcon (*Falco peregrinus*) and blackbird (*Turdus merula*). It allows the public to enjoy birdlife through internet from the beginning of March till the end of June.

The project is a big success. In 2012 the project received 900.000 unique visitors, which increased to 1.1 million unique visitors originating from some 150 different countries in 2013. Over four months the website was visited 49 million times. It's a kind of 'real life soap opera' of the species concerned. Happy events like the hatching of eggs are alternated with 'cruel' events, like a stork eating one of its own chicks and pushing another one out of the nest.

Other organisations like the Dutch Forestry Service (Staatsbosbeheer) contributed to the success with webcams in and near a fox hole (*Vulpes vulpes*) and a beaver lodge (*Castor fiber*).

Every five years since 1997 the Netherlands Environmental Assessment Agency has ordered public support surveys to study public opinion on nature conservation issues (De Boer et al, in prep.). In 2013, a large majority of the respondents valued the protection of wildlife areas (92%), and the protection of rare plant and animal species (85%). Public opinion on these matters had hardly changed since 1996, 2001 and 2006. A major change in the 2013 survey is that the public now attaches much lower priority (from 77% down to 65%) to the development of new nature areas than before. In 2001, 56% of the respondents mentioned 'nature conservation' as one of the four top priorities for the government, compared to only 21% in the 2006 survey. Since 2006 this percentage is 19% in 2013 and thus more or less stable since then. Apparently, in times of crisis and financial cuts, citizens change their views on priorities for national policy. Since 2001 employment as a policy

theme became more important. Answers to questions on people's considerations about dilemmas surrounding socio-economic and ecological interests show that the public tend to give preference to nature.

Active participation

The public support survey ordered by the Netherlands Environmental Assessment Agency, also studied active public participation. Compared to 2006 the percentage of citizens visiting nature areas in 2013 increased from 54% to 62%. Most popular low-threshold activities close to home are: placing nesting boxes (37%) and to clear garbage in natural areas (20%). Of all respondents, 10% is active in landscape and nature management and 3% is active in a nature-related citizen initiative. Six national organisations receive subsidy of the Ministry of Economic Affairs in 2012 and 2013 through the programme 'Green and Do' (www.groenendoen.nu) to support volunteers. The programme also supports volunteers from other organisations through vouchers for courses and training and organises a contest to honour promising projects.

Dutch NGO's are very active in organising activities to increase public awareness and to involve citizens in their activities. Public participation in scientific research such as inventories for ecological monitoring is a kind of 'citizen science', now also known as 'crowd science'. Formally, citizen science was defined as "the systematic collection and analysis of data; development of technology; testing of natural phenomena; and the dissemination of these activities by researchers on a primarily vocational basis". In this case, the citizens gather the data that is processed and analysed by professional researchers and used to make essential indicators like Red list Species etc.; the main indicator for biodiversity trends used in this report. To date ten specialised private data managing organisations (PGOs) coordinate field survey, train the citizens and control the standardised field forms. About 23.000 citizens are affiliated with the PGOs and this number increased over the last 5 years by ca. 1000 citizens a year and is still increasing (oral communication secretary VOFF). Citizens, scientists, policy makers of local, regional and national government, companies and business use this information on a daily basis.

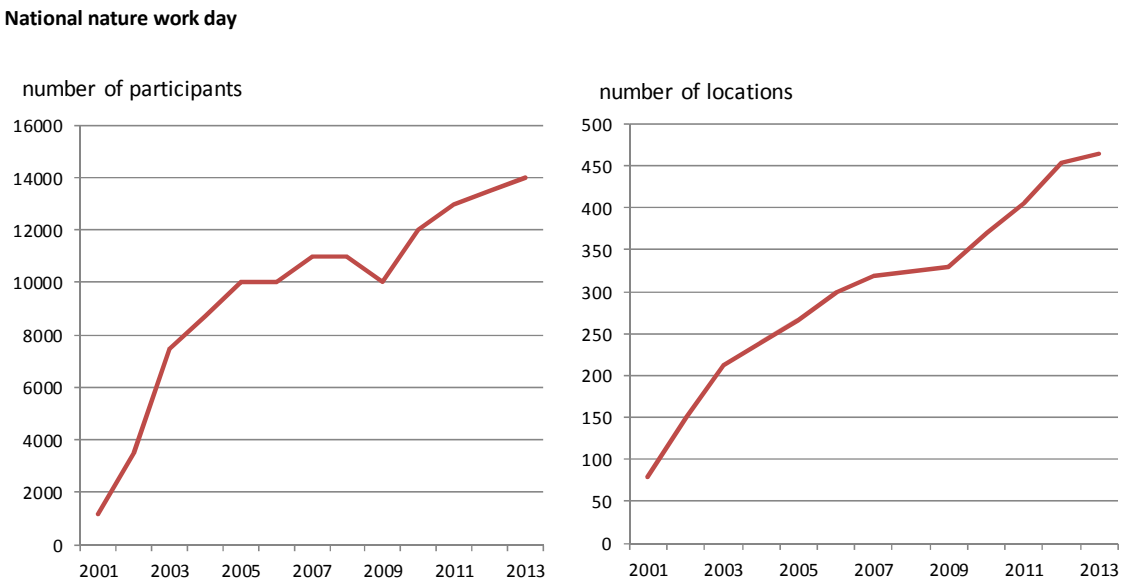


Figure 2. Trend for the number of participants in and locations for the 'National Nature Work Day' (source: Landschapsbeheer Nederland).

Another example is the increasing participation of citizens at an increasing number of locations (fig. 2) during 'National Nature Work Day', organised by Landscape Management Netherlands and nature management organisations. It allows people to be actively involved in nature management close to their place of residence and to meet people with similar interests in their neighbourhood. The number of volunteers active in Landscape Management Netherlands increased in 2012 from 62.000 to 66.000.Those volunteers together worked 1,4 million hours. Many of them maintain trees, hedgerows and paths. About 6000 volunteers protect flora and fauna, mainly nests of meadow birds. They protected 43.000 nests on 130.000 ha farmland [2].
The number of members of Nature and Environment Education (IVN) increased from 19.568 in 2010 to 20.688 in 2012. These volunteers of IVN organise educational activities such as excursions, courses and campaigns at schools to promote sustainability and nature activities.

Caribbean Netherlands

Environmental issues in the Caribbean Netherlands receive a great deal of media attention through the operations of the many NGOs. The material produced is readily published and televised. Access to and cooperation with the media is excellent. In addition, the public is relatively well educated and well informed.

Awareness about nature conservation issues in the Dutch Caribbean is generally considered high though indicators do not exist. Protected area management organisations have well organised education and outreach programmes as well as strong after school programmes for local school age children. Protected area management organisations also work, mainly overseas, with volunteers to

[2] Source: news of Landscape Management Netherlands on 25-april-2013 (www.landschapsbeheer.nl)

support them in their basic management such as maintaining trails as well as for the execution of their monitoring programmes.

Sea Turtle Conservation Bonaire (STCB) has had over 20 years of experience protecting the sea turtles on Bonaire with the help of volunteers. A dedicated volunteer programme for beach patrols during the nesting season with training courses for the volunteers and a website on which they can keep track of the status of each nest adds an awareness and scientific component to these conservation efforts.

On Bonaire there is also a strong volunteer involvement in bird conservation activities. For at least 10 years volunteers have participated in a yearly parrot count, at first coordinated by the island government and the National Park Foundation, and subsequently by the Echo foundation, an NGO fully dedicated to parrot conservation on the island. Similarly, the signature flamingo population on Bonaire has been monitored with the help of volunteers since the nineteen eighties. However, the majority of the volunteers involved in nature conservation are expatriates from Europe and the United States. Participation by the local island community is somewhat less developed.

1.1.2 Economic, social and cultural values of biodiversity and ecosystem services

Netherlands

The Millennium Ecosystem Assessment (www.maweb.org) defined Ecosystem Services as "the benefits people derive from ecosystems". Besides provisioning services or goods like food, wood and other raw materials, many ecosystems also provide essential regulating services. Some of these are quite well-known like the services for water purification and recreation. The active use of coastal dunes for water purification for instance dates back to mid-19th century. To date 15% of total drinking water in the Netherlands is purified by 11.000 hectares of coastal dunes, which equals a turnover of more than 0.5 billion per year (KPMG, 2012b). Even more substantial is the value of natural areas for recreational use and human wellbeing. Hiking and cycling, the most popular outdoor recreation activities, for instance bring to date an estimated annual 1.8 billion and 0.5 billion respectively to the Dutch economy (NRIT Media, 2012).

The awareness that ecosystems and biodiversity also provide services 'for free' to society other than the ones mentioned above is less well known. Since 2011 six TEEB studies (The Economics of Ecosystems and Biodiversity) have therefore been commissioned by the Dutch Government. These aim to show the economic value of ecosystem services to government, business and civil society and by that to support the decision-making process for policy-making and large investment projects. The results of the TEEB-study 'Green, healthy and productive'(Groen, gezond en productief) among others indicate that investing in green spaces, particularly in urban areas, reduces health care costs and absenteeism, which may represent an economic value of hundreds of millions of euros (KPMG, 2012a). In addition the TEEB-study 'Green pays off with TEEB city' (Groen loont met TEEB stad) indicated that integration of green-blue developments within spatial plans provides large net social returns, such as savings on health care costs, increased value of real estate, savings on energy costs and savings in disposal and purification costs of rainwater. The benefits are about 1.5 to 2 times higher than the costs for investment and maintenance. These are relevant outcomes in light of the fact that humans are increasingly living and working in urban areas (van Wetten et al., 2012). TEEB for businesses (TEEB voor het Nederlandse bedrijfsleven) indicated that businesses must quickly analyse their risks and opportunities in relation to biodiversity and assess its financial impact in order to outperform their competitors. "First movers are tomorrow's winners" (KPMG, 2012b). These TEEB studies will be followed-up by TEEB for Physical Netherlands (2013) and TEEB for Dutch trade chains (2014).

Caribbean Netherlands

In 2012 a TEEB-study was conducted for the island of Bonaire (Wolfs & van Beukering, 2012). Healthy ecosystems such as coral reefs and mangroves are critical to the society of this Caribbean island. In the last decades, various local and global developments have resulted in serious threats to these fragile ecosystems, thereby jeopardizing the foundations of the island's economy. It is therefore crucial to understand how nature contributes to Bonaire's economy and its wellbeing in order to make well-founded decisions when managing the economy and nature of this tropical island. The research aims to determine the economic value of the main ecosystem services that are provided by the natural resources of Bonaire and their overall importance to society. In total, more than ten different ecosystem services provided by the marine and terrestrial ecosystems have been valued in monetary terms. The total economic value (TEV) of these services is $105 million per year just for Bonaire. This TEV and its underlying components will be used to build a strategy for effective conservation measures on Bonaire. After extensively analysing different scenarios for future ecosystem services values, one result becomes very clear: 'an ounce of prevention is worth a pound of cure'. In other words, it is more efficient to prevent extensive environmental damage than trying to revitalize the environment while there are still threats at hand. With the current threats unmanaged, the TEV of Bonairian nature will decrease from $105 million today to around $60 million in ten years of time and to less than $40 million in 30 years (Wolfs & van Beukering, 2012). Similar TEEB studies for the islands of Saba and Siant Eustatius are planned for completion in 2014.

1.1.3 Examples of exceptional biodiversity

Netherlands

About half of the Netherlands lies below sea level, while most of the other half is hardly one metre above. This illustrates the on-going battle of the Netherlands against the threat of flooding by the North Sea or the large rivers Rhine, Waal, Meuse and Schelde.

Water management strategies increasingly focus on the use of natural processes to build with nature. This has resulted in relatively large areas of coastal dunes, salt marshes and mudflats, river floodplains, peat bogs and fresh water lakes bordered by reed marshes.

This great variety of wetlands, in combination with the temperate climate (mild winters), the highly productive agricultural landscape and the position of the Netherlands in a cross-road of bird migration routes, largely explains why this small sized country ranks 5th worldwide for the number of designated Ramsar sites (behind the UK, Mexico, Spain and Australia[3]). Altogether the Dutch part of the Wadden Sea World Heritage Site and the other internationally important wetlands, attract up to five million waterbirds per year, of which two million are geese. For several species this involves major parts of their flyway populations (fig. 3).

The importance for biodiversity can also be explained in terms of the European Habitats and Birds Directives. A small densely populated country like the Netherlands still holds 22% of the total of 231 European habitat types, 24% of the total of 193 bird species of Annex I Birds Directive. No less than 164 terrestrials and marine Natura 2000 sites have been designated for its conservation.

[3] Source: Ramsar Secretariat (12 February 2013). The total number of 53 Ramsar-sites for the Kingdom of the Netherlands also includes 10 sites on the Caribbean islands of Aruba (1), Bonaire (5) and Curacao (4).

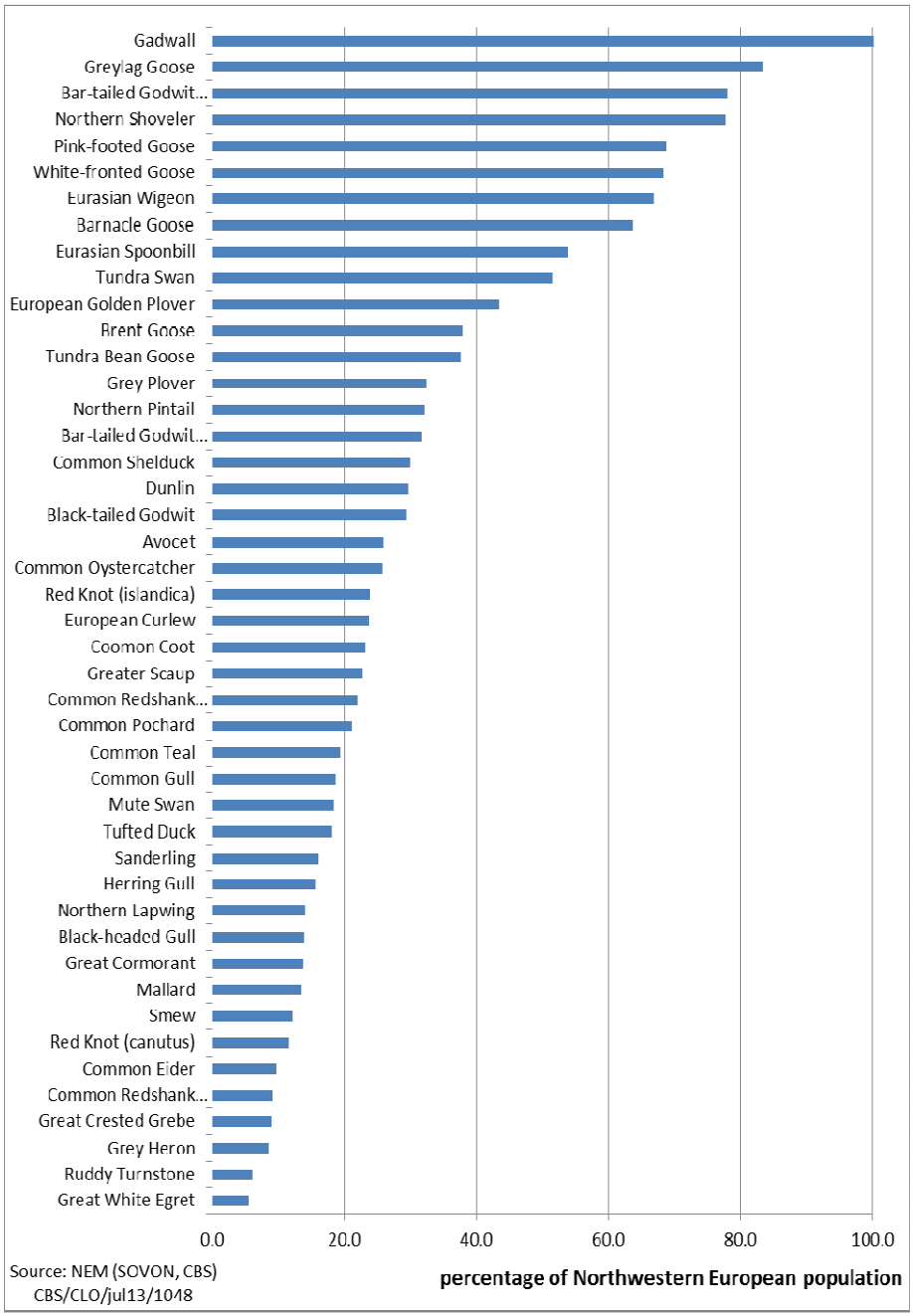


Figure 3. Importance of the Netherlands for North-western European populations of water bird species (CBS et al., 2013k).

Caribbean Netherlands

After 10-10-2010 the Netherlands gained direct responsibility over a significant amount of new biodiversity in the islands of the Caribbean Netherlands. This includes marine pelagic habitat, coral reefs, seagrass beds, mangroves, saliñas, primary and secondary rain forest, cactus scrub and various types of coastal woodlands. The islands of the Caribbean Netherlands form part of the larger Caribbean biodiversity hotspot on the basis of their species richness and high level of endemism. An

estimated 10 to 15,000 species occur on and around these three tiny islands, including some 200 endemic species and sub-species and more than 35 internationally endangered species (Debrot et al., 2011a). In comparison, the Netherlands are home to some 47.800 species (Noordijk & Achterberg, 2010) of which only 3 are endemic subspecies.

Figure 4. The Saba Bank is a true example of exceptional biodiversity in the Caribbean Netherlands.

The Saba Bank (fig. 4) is an example of exceptional biodiversity, with approximately 2200 km² of the largest sub-marine atoll in the Atlantic Ocean. Average depth of the Bank is about 80 feet, and there are extensive coral reefs on the eastern and south-eastern edges. New species of fish, gorgonians and seaweeds have been discovered on the Bank which has been found to be among the richest areas of the Caribbean in seaweed diversity. Much of the area and its biodiversity still remain to be explored. The Bank is suspected to be an important foraging area for sea turtles and may be important to various shark species and marine mammals such as Humpback whales. The Saba Bank was declared a marine protected area by the Dutch government on 21 December 2010 and in October 2012 it was declared a Particularly Sensitive Sea Area (PSSA) by the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO), giving it the same status as the Great Barrier Reef in Australia.

In addition, the coral reefs of Bonaire and Curacao, though subject to on-going global deterioration and decline in live coral cover, have been found to be among the best reef systems left in the Caribbean with some of the highest live coral reef cover still to be found in the region (IUCN, 2012; Report of the Tropical Americas Coral Reef Resilience Workshop).

1.2 Major changes that have taken place in the status and trends of biodiversity.

This section shows the status and trends of biodiversity; i.e. within species, between species and from ecosystems. The species trends are united in functional groups, such as 'red list species' or 'birds'. The trends of these functional groups are described in §1.2.1. National trends change slowly, however successes can be illustrated by specific groups or species. Where possible analysis is made of how actions taken (described in part II) influence the changes in biodiversity. The diversity within species or genetic diversity refers mainly to cultivated plants and farmed and domesticated animals, and is described in §1.2.2.

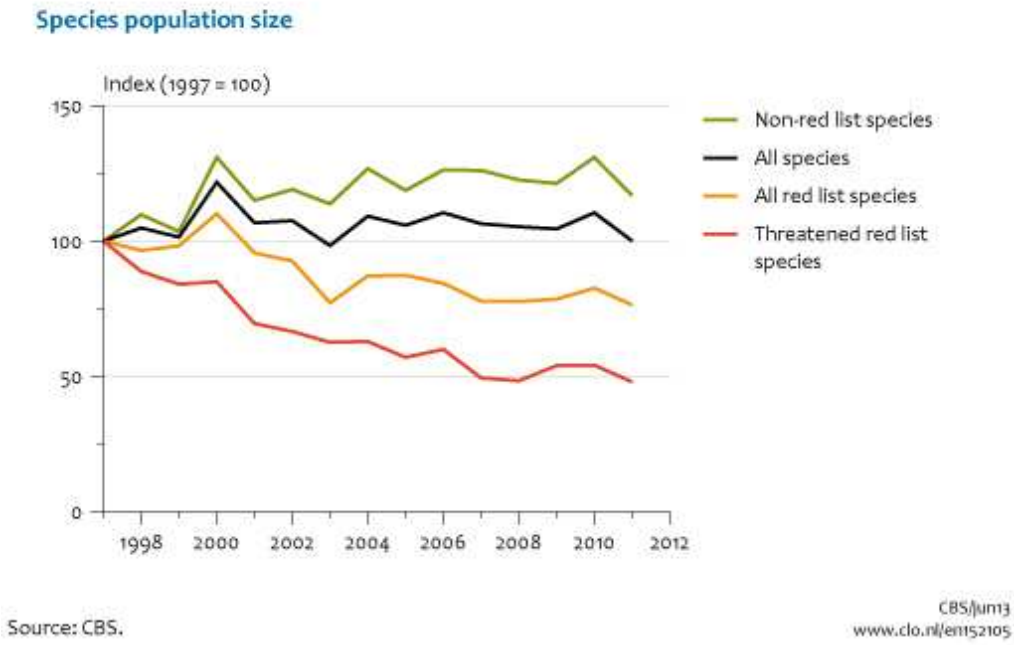


Figure 5. Trends for national red list and non-red list species excl. wintering and migratory species (CBS et al., 2013).

1.2.1 Trends in species and ecosystem extent

Netherlands

General and red-list species

The national red lists date back to 2004 and are generally revised every 10 years. Figure 5 gives the current status and trends for red-list species, non red-list species and all species combined. It's an aggregation of monitoring data on mammals, reptiles, amphibians, breeding birds, mushrooms, dragonflies and butterflies.

Recent data show that the population size of total red-list species has more or less stabilised (yellow line). The category of threatened red list species (red line) still however shows a negative trend. In 2011 the population size of this category was only 44% compared to the reference year 1997. Against the decline of threatened, mostly rare species, is the positive trend for non-red list and mostly general species (green line). The population size for all species combined therefore remains more or less stable (blue line).

Also the population size per specific species group remains more or less stable, with some species doing better than others. Some profit from high productivity grassland (geese), climate change (dragonflies), aging of forest stands (woodpeckers) and protection of habitat (bats), while others suffer from vanishing small scale agricultural landscapes (birds), an increase of grasses and trees and a decrease of flowers (butterflies).

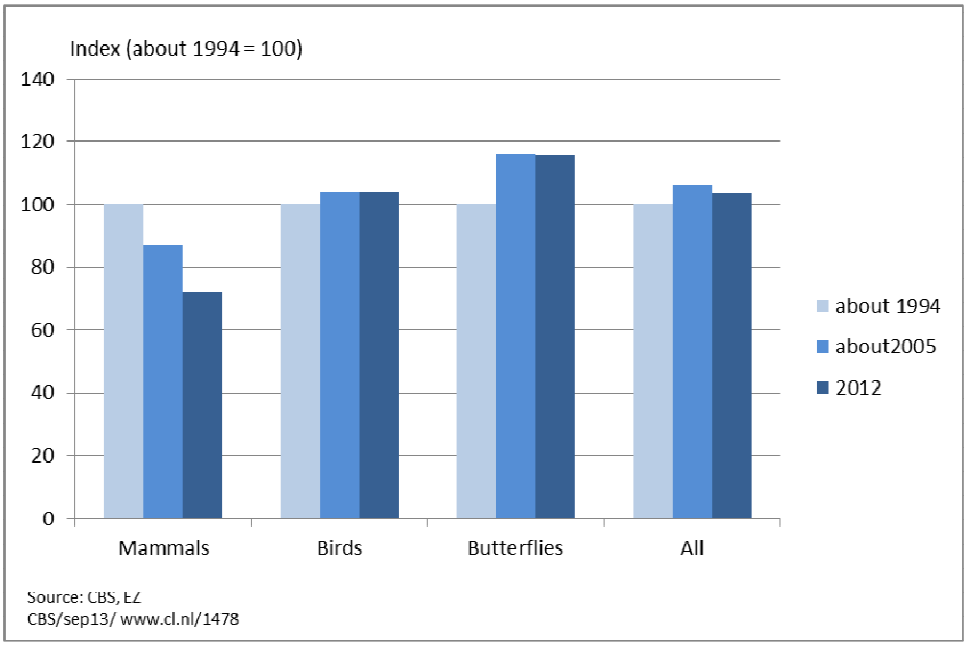


Figure 6. Relative changes in the number of Red list species (CBS et al., 2013l).

Over the past 10 years the red list for plants has declined by 2% (Sparrius et al., 2013). Three plant species became extinct while six other species were found again. Several plant species have no red list status anymore. Species of wet heath in particular gained from nature development and restoration measures taken by the nature management organisations. The red list of mammals also decreased, birds did not change and the list of butterflies is stable compared to the last period (fig. 6).

The group that shows an overall strong positive population trend are the wintering and migrating birds, which almost doubled over the past 30 years, showing most rapid increases in the 1990s and around 2000. Several goose species, Mute Swan (*Cygnus olor*) and Great Cormorant (*Phalacrocorax carbo*) dominate this increase, whereas ducks only slightly increased and waders fluctuated without a clear common trend (fig. 7). During the past decade, 31% of the water bird species were still increasing, whereas 25% remained stable and 25% declined (Hornman et al., 2012).

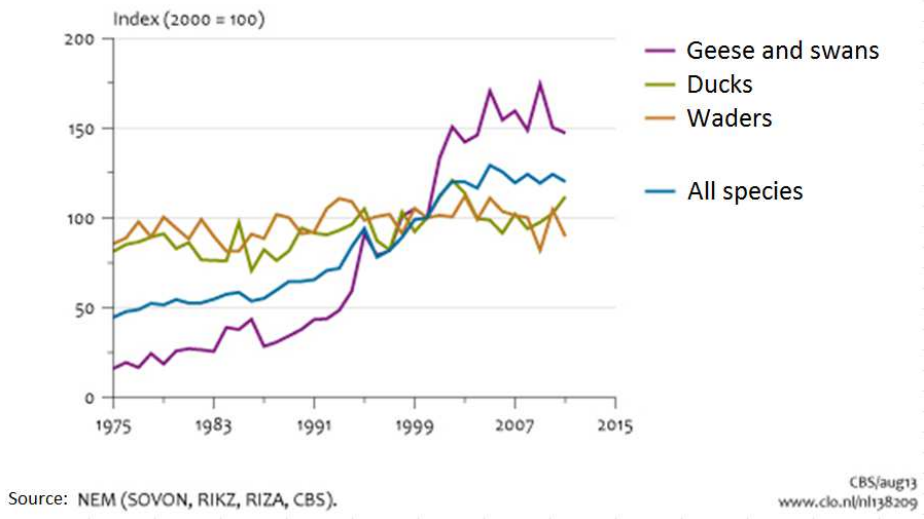


Figure 7. Trend in total numbers since 1975/76 of all water birds and of ducks, geese & swans and waders separately (CBS et al., 2013m).

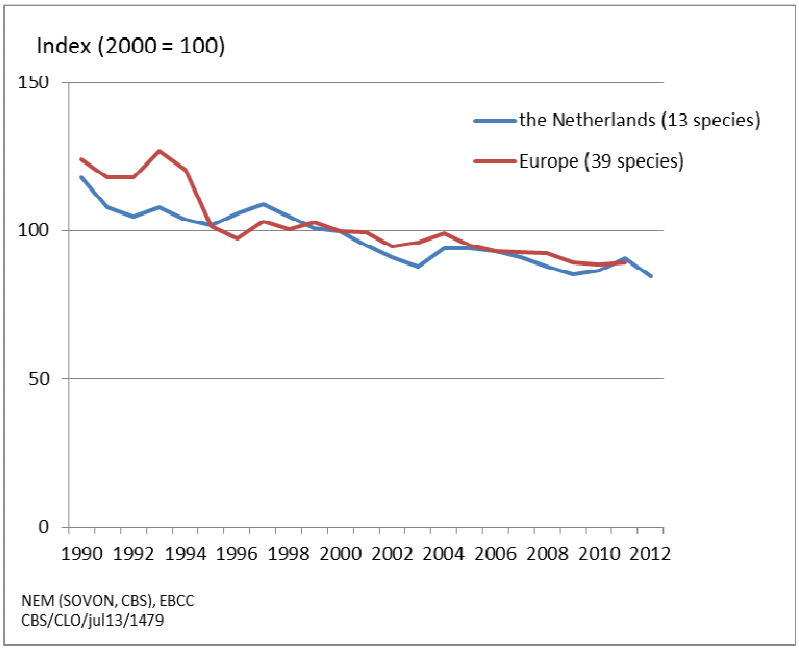


Figure 8. Trend of farmland birds in the Netherlands and Europe(CBS et al., 2013n).

One of the groups most contrasting to the wintering and migrating birds are the breeding birds of agricultural land (fig. 8). This group shows a dramatic on-going population decline of 75% average since 1960. Many formerly abundant species like the Skylark (*Alauda arvensis*) and the Partridge (*Perdix perdix*) are now on the national red list after population declines of 96% and 93% (since 1960) respectively (SOVON, 2012). If conservation measures are not taken this may eventually lead to their extinction from the Netherlands. Over the past century this has happened to approximately 5% of the birds and vascular plants, 25% of butterflies and 45% of stoneflies (CBS et al., 2013c).

For some species (formerly extinct in the Netherlands) however the tide has turned, mainly due to the efforts in relation to the realisation of the national ecological network, decreasing environmental pressures and, probably, also climate change and the overall wildlife comeback in Europe (Deinet et al. 2013). Over the past 35 years at least 25 species have returned to the Netherlands on their own. Most were still observed after 2010, though some only accidently (CBS et al. 2013d). Among the returned species are charismatic ones like the gradually increasing breeding numbers of Little Egret (*Egretta garzetta*), Common Crane (*Grus grus*), Eagle Owl (*Bubo bubo*) and White-tailed Eagle (*Haliaeetus albicilla*). These all returned after decades or even several centuries of absence from the Netherlands. Other formerly extinct species were reintroduced like the Beaver (*Castor fiber*) in 1988 and Otter (*Lutra lutra*) in 2002. Both species populations are still increasing, and their reintroduction is generally regarded a success. The improved water quality and defragmentation of rivers and streams also led to the reintroduction of migratory fish species like the Atlantic Salmon (*Salmo salar*) and the Atlantic Sturgeon (*Acipenser oxyrhynchus*). In May 2012 the first Atlantic Sturgeons were released in the Netherlands. A similar reintroduction project has also been started for the Noble Crayfish (*Astacus astacus*), which only occurred in a single isolated location. Despite all efforts some species have disappeared or tend to disappear, such as the Black Grouse (*Tetrao tetrix*).

The trends for a group of target species characteristic for a type of terrestrial ecosystem (fig. 9), show that the biodiversity of heather and open dunes are declining, while the biodiversity of forests, semi-natural grasslands and marshlands is stable or even shows slight improvements.

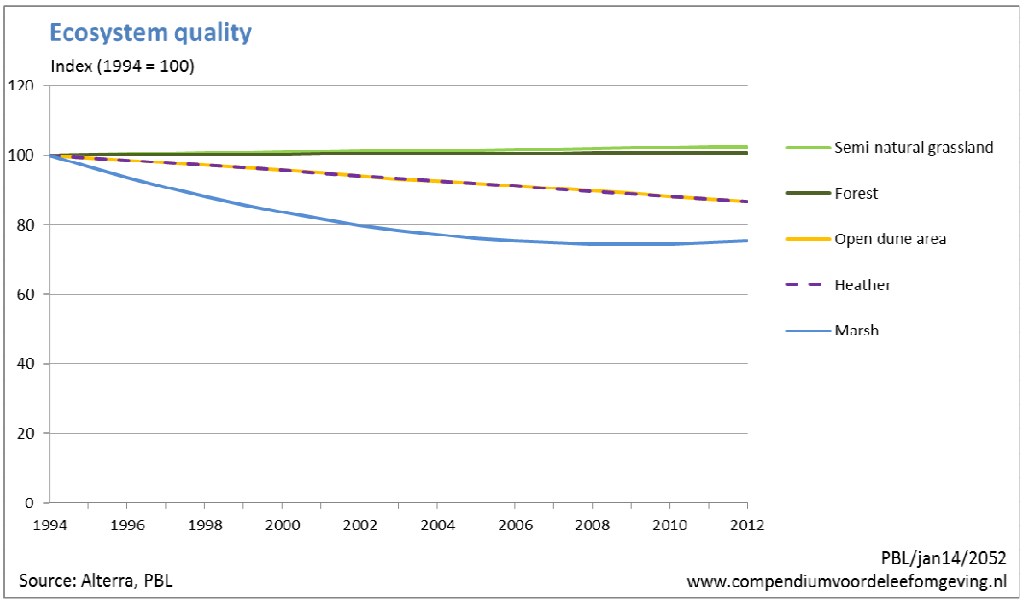


Figure 9. Trends for target species in terrestrial ecosystems (CBS et al., 2014).

With the designation of the 164 Natura 2000 sites, the Netherlands aim to conserve 52 habitat types, 97 bird species and 35 other animal and plant species of European importance. The EU requires periodic reporting on the national status and trends of these species and habitat types. The monitoring results of the Habitat Directive reported in 2013 reveal that about 95% of habitat types still have a more or less unfavourable conservation status (fig. 10) while 75% of the Habitat Directive species have a more or less unfavourable conservation status. The changes in conservation status

between the reporting in 2007 and 2013 are mainly explained by methodological changes instead of genuine changes. However the number of increasing trends observed in habitats (10 %) is less than the number of increasing trends of species (55%); and for habitats, the number of habitats with a still decreasing trend and an unfavourable conservation status is 30%.

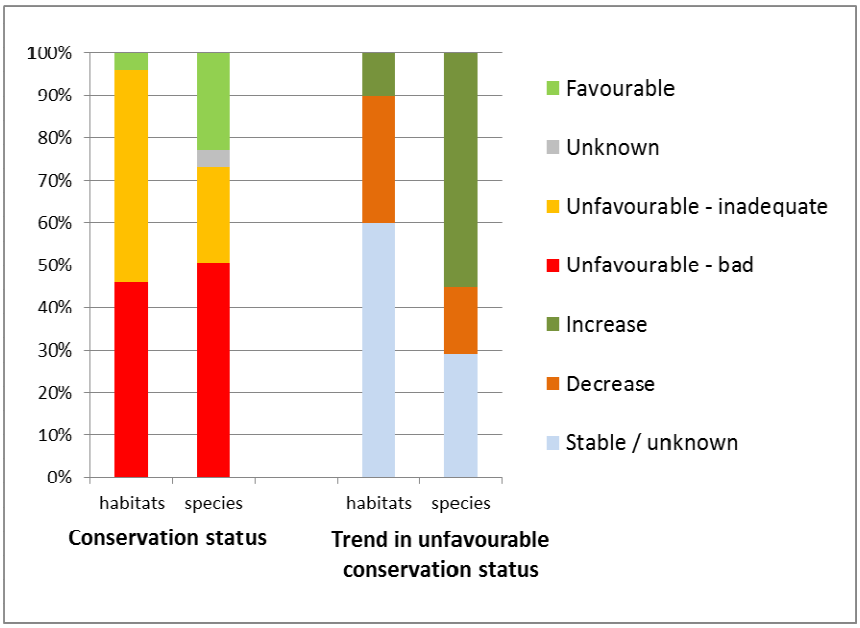


Figure 10. Conservation status of habitat types and species (Annex II of the Habitat Directive) reported in 2013.

The status and trends in biodiversity can be mainly attributed to the terrestrial biodiversity of the Netherlands. Biodiversity values of the North Sea are still not fully explored. 2011 and 2012 scientific expeditions to the submarine Natura 2000-sites of Doggerbank and Klaverbank revealed rare and new species for the Netherlands (Bos et al., 2011).

Caribbean Netherlands

The Caribbean biodiversity has not been monitored as systematically (yet) as the terrestrial part of the Netherlands. Indicators for species or ecosystem trends are therefore less available.
Expert qualitative assessments reveal that all natural habitats show signs of degradation. Considering the fact that many endemic and other species depend on the small island habitats it's obvious that the current status of biodiversity on the islands is much threatened.

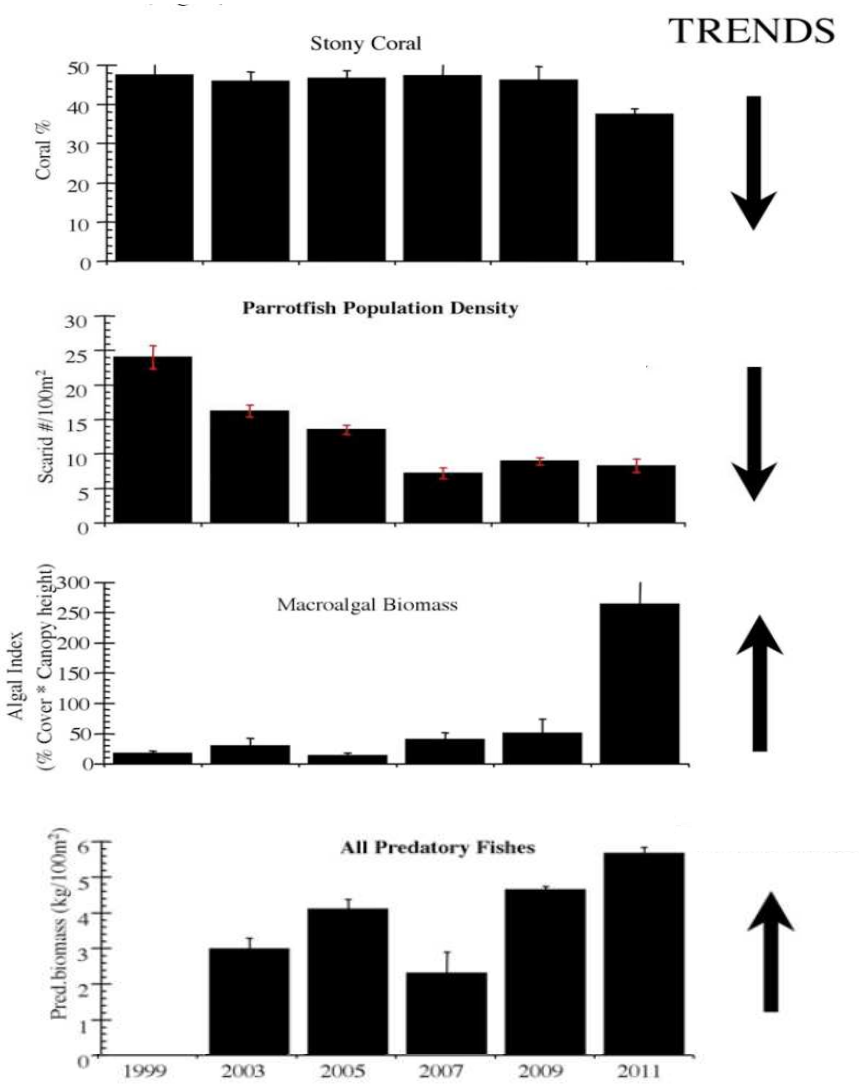


Figure 11. Monitoring results on Bonaire's reefs between 1999 and 2011 for stony coral, parrotfish, macro-algae and predatory fish (Steneck et al., 2011).

Bonaire's coral reefs for instance, though generally regarded among the healthiest in the Caribbean (Carmabi Foundation, 2011), are today more seriously threatened with collapse than at any time since monitoring began in 1999 (Steneck et al., 2011). Unusually warm ocean temperatures during the late summer and fall of 2010 caused coral bleaching, which persisted long enough to kill about 10 to 20% of the corals within six months. Live coral declined from a consistent average 48% between 1999 and 2009 to 38% in 2011. This increase in non-coral substrate increased the area of macro algae, which unfortunately could not be controlled by the declining populations and biomass of important herbivores like the Parrotfish (fig. 11). Whether the reef can recover from the bleaching event is doubtful, as all research to date indicates that coral health and recruitment declines directly with increases in algal abundance (Arnold and Steneck, 2010).

On the other hand, predatory fishes are increasing in abundance in general (fig. 11) but increasing most strongly in Fish Protection Areas (FPAs). Typically, responses to closed areas take 3-5 years to begin to manifest themselves. Predators of damselfishes have increased significantly in FPA sites and there damselfish abundances are trending downward. These trends are the first encouraging signs of changes in the FPAs (Steneck et al., 2011).

IUCN and the Global Coral Reef Monitoring Network (GCRMN) of the International Coral Reef Initiative (ICRI) have been working on an extensive analysis of all available data on coral reefs in the Caribbean, resulting in an unique synthesis of 40 years of scientific data. The final report "Status and Trends of Caribbean Coral Reefs 1970-2012" was published in November 2013 (Jackson et al., 2013). This report identifies the reefs of Bonaire, Curaçao and the Flower Garden Banks as retaining the highest percentage of coral cover in all of the Caribbean, as well as showing the least decrease of coral cover over 40 years. The report found a strong correlation between the health of the coral reefs and the populations of grazing fish such as parrotfish. Bonaire has listed parrotfish as a protected species.

1.2.2 Genetic diversity of cultivated plants and domesticated animals

Genetic diversity of cultivated plants and domesticated animals is the result of natural selection processes and the careful selection and inventive developments of farmers, herders and fishers over millennia. This biodiversity has or had a huge socio-economically important impact. Many people's food and livelihood security depend on the sustained management of various biological resources that are important for food and agriculture. Nowadays only a few highly productive breeds are used in agriculture, which might be a risk when conditions change dramatically or a new disease becomes invasive. For increasing the resilience of agricultural systems and for adaptation to changing conditions, the genetic diversity in cultivated plants and domesticated animals needs to be maintained and the current erosion of genetic diversity needs to be minimized (see Aichi target 13). This section describes the situation concerning livestock and crops within the Kingdom of the Netherlands.

Netherlands

Livestock diversity

The position of the Netherlands as an innovative livestock breeding country for pig, cattle, poultry and horses is known worldwide. A few highly productive international breeds increasingly dominate the production of farm animal products across the world, like the Holstein Friesian (USA) for milk production (fig. 12). As a result of this global trend, many local breeds are endangered. Essentially, this homogenisation process is similar to the replacement of the original species in wild biodiversity. One globally dominant breed of sheep for meat production is of Dutch origin: 'Texelaar'. Other products such as milk from cattle, pig meat, chicken meat and eggs are only by a fraction produced by native Dutch breeds. The amount of sheep and goat milk is relatively low.

To date there are 113 registered rare Dutch breeds of 11 species (Hoving et al., 2013). Figure 13 shows the 2012 status of these rare breeds and an additional five non-rare Dutch breeds (one sheep, goat, horse and two pig species). Some 27% of these are regarded as critical, 55% endangered and 10% vulnerable (source SZH[4]). The population size of 8% of the breeds is regarded normal, though

[4] Source: Dutch Rare Breed Survival Trust (SZH): www.szh.nl

inbreeding even threatens half of them. If we specifically look at the trend for rare breeds of cattle (trend from 2002-2011), horse (2002-2009), sheep and goat (both 2002-2012), it shows that 39% is increasing, 29% is stable and 32% is decreasing (Jansen et al., 2013).

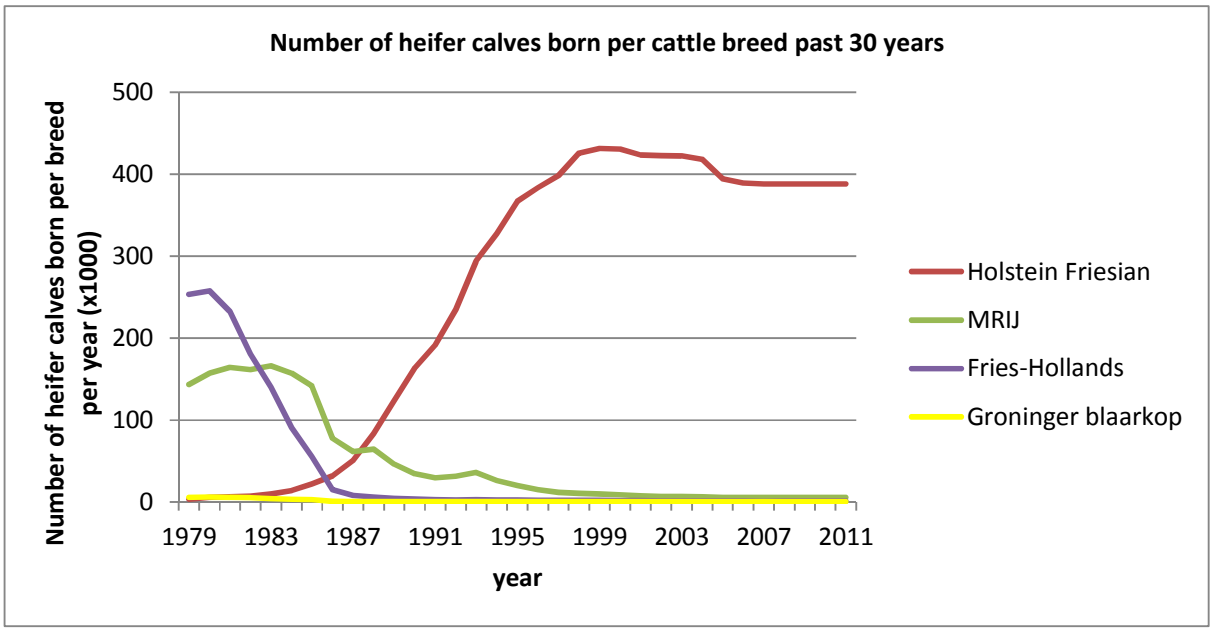


Figure 12. The Holstein Frisian cattle (USA) started to dominate the milk production in the Netherlands some 30 years ago, causing native breeds like MRIJ, Fries-Hollands and Groninger Blaarkop to become rare (no data available for the period 2008-2010).The latter species has however always been rare. Source CGN.

Many native Dutch farm animal breeds generally became rare as they lost their production function in agriculture to other commercial breeds. Nowadays, their status and trend increasingly depend on their popularity with hobbyists. Unfortunately the number of (commercial) breed keepers is also small. One important strategy to prevent further declines is to come up with new functions for the breeds. For instance the current slow-food movement using regional products gives the opportunity to rehabilitate some of the breeds' former agricultural function. 'Rarely tasty' is a contradictory sounding but popular slogan of the Dutch Rare Breed Survival Trust (www.szh.nl). Also the grazing of nature reserves by native breeds of cattle, horses, sheep and goats is sometimes a 'newly' created function. Native breeds are important from a cultural-historical point of view and are often less vulnerable for less optimal circumstances because they were not only bred to increase production. This makes them better adapted to specific natural terrains and their grazing behaviour is important for achieving specific biodiversity targets in nature and landscape management. In the past 25 years approximately 500 nature reserves in the Netherlands have made use of semi-wild breeds for grazing, including rare Dutch farm animal breeds.

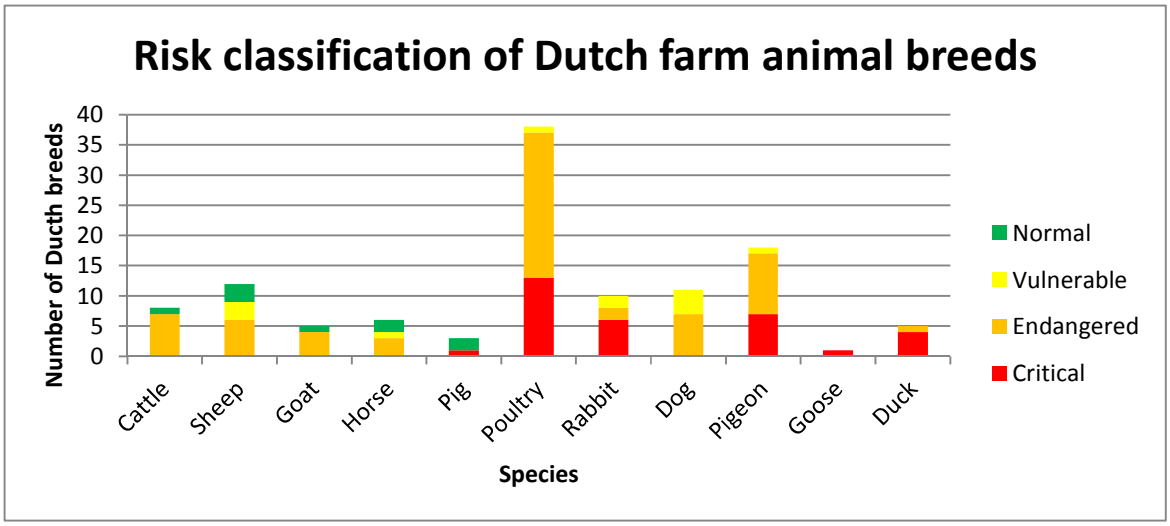


Figure 13. Status of Dutch native farm animal breeds (Endangerment categories are based on FAO 2012 Guidelines for In Vivo Conservation of Farm Animal Genetic Resources). Source: SZH

Crop Diversity

As for livestock a few commercial crops dominate the production process. While five commodities (wheat, barley, maize, sugar beet and potato) show land coverage of over 25.000 ha, more than 41 additional food and feed crops are cultivated over an area of just over 100 ha. Since 1970, a small number of crops have almost disappeared from production systems, including rye, oats, pulses, caraway, and fodder beets. The number of farms cultivating these crops and the number of varieties offered in the market has decreased to a similar extent. Whereas this trend commenced in the 1970s, a final reduction has taken place over the last decade. Substantial traditional crop diversity is however maintained in gardens, rather than on farms, and in-garden maintenance of traditional varieties has been shown to represent a robust conservation system. The genetic diversity of crops that have almost completely disappeared form the Dutch farming systems, is largely maintained in *ex situ* collections in the country and abroad (Min. LNV, 2008b).

Caribbean Netherlands

The conservation of native breeds is not an issue of concern in the Caribbean Netherlands. The European Farm Animal Information System (EFABIS[5]) only shows three breeds for the Dutch Antilles. A cow (Puerto Rican), a sheep (Barbados Black Belly) and a goat (Creole). Data on status and trends are not available, but none of these breeds are considered to be threatened.

1.3 Main threats to biodiversity

The anthropogenic impacts on biodiversity are complex, diverse and interrelated. Main threats to biodiversity in the Netherlands and/or the Caribbean are however quite well understood and are

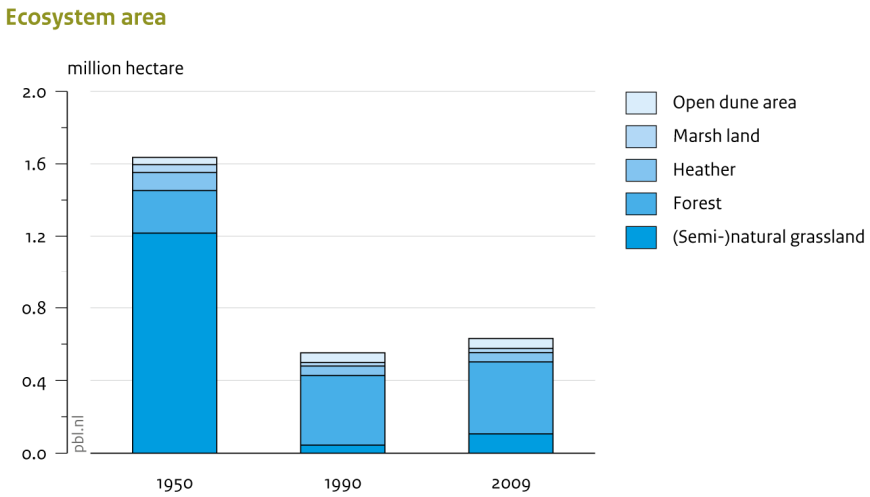
[5] http://efabis.cgn.wur.nl/

described below as: habitat loss and fragmentation (§1.3.1), environmental pressures (§1.3.2), invasive species (§1.3.3), overgrazing (§1.3.4), climate change (§1.3.5) and overfishing (§1.3.6).

1.3.1 Habitat loss and fragmentation

Netherlands

Habitat loss in the Netherlands stopped (fig. 14) around 1990 with the introduction of the National Ecological Network (NEN). This has resulted in the transition of agricultural land into nature areas and the defragmentation of nature.



Source: PBL Netherlands Environmental Agency, CBS

Figure 14. The size of ecosystems increases since the implementation of the National Ecological Network in the 1990's (van Veen et al., 2010).

Habitat loss and fragmentation of habitat have impacted on the spatial conditions for a large number of species. By 1990, the spatial requirements for 50% of the Natura 2000 fauna species were, possibly, not met. Though the NEN slowly counters this situation it's expected that the spatial requirements for 15-45% of the species will still not be met after completion of the NEN (PBL, 2010a). Fragmentation is most serious in marshes, moist grasslands, streams and lakes. Parts of the dunes and heathlands are fragmented too, and do not fit the needs of the target species. The progress on the defragmentation of habitat through the construction of ecoducts and ecological corridors advances slowly. By the end of 2012 32% of all 215 indicated bottlenecks caused by national infrastructure was solved, 39% was partly solved and for 29% the defragmentation process still had to get started (fig. 15). The defragmentation program runs until 2018, and the expectation is that finally 78% of bottlenecks will be solved. The other 22% are robust corridors which were cancelled by the government in 2011 (Min. EZ & Min. I&M, 2013a). Many waters and rivers in the Netherlands remain isolated for migratory fish (fig. 16).

Opportunities for biodiversity are highest in large nature reserves. Many small areas have been enlarged through the acquisition of neighbouring land. Sometimes a large(r) nature reserve was created through the acquisition of land between two nature reserves or the construction of ecoducts across roads. The potential to create ecological corridors like these is substantial as many nature reserves within the NEN are close to each other (Lammers et al., 2005).

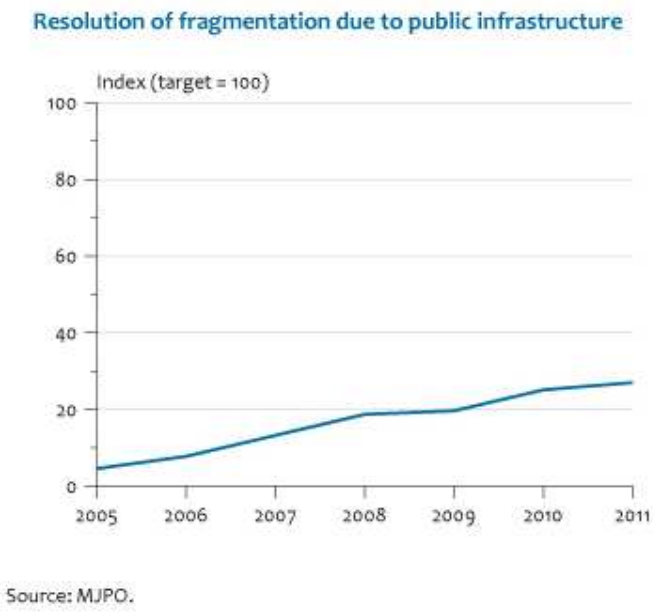


Figure 15. Trend for the percentage of bottlenecks solved that were caused by national infrastructure (CBS et al., 2013f).

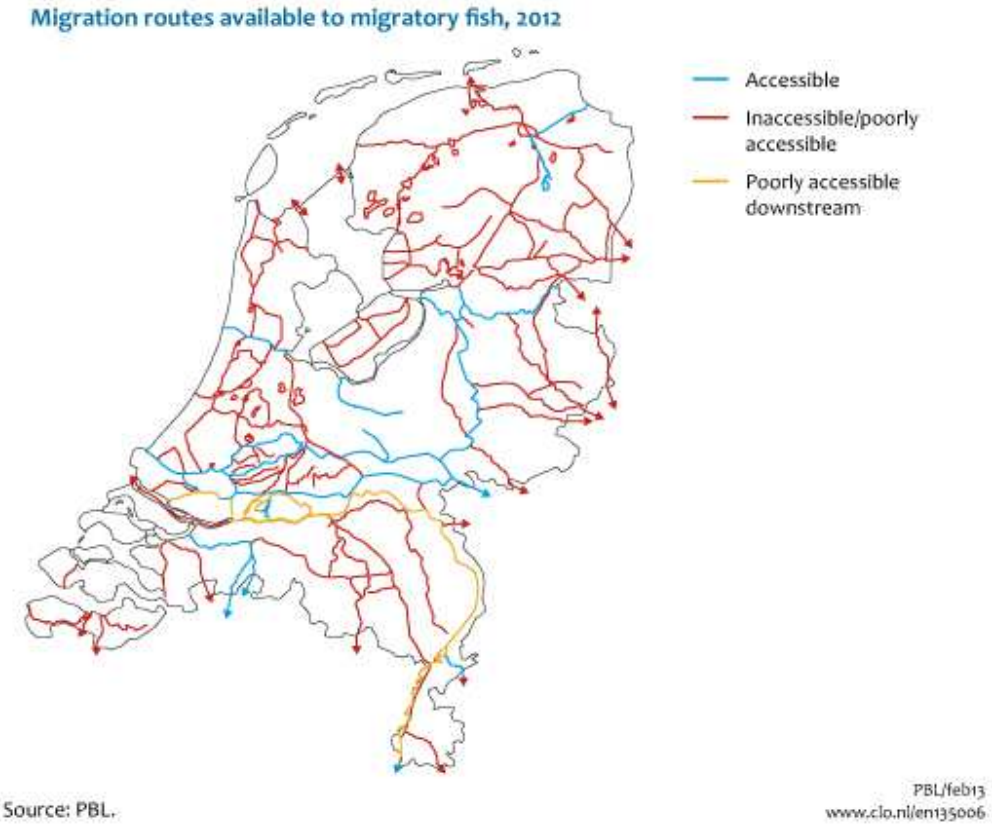


Figure 16. Accessibility of waters and rivers for migratory fish species in the Netherlands. (CBS et al., 2013b).

Caribbean Netherlands

The relatively small island habitats are still more or less interconnected and interdependent, and protection through an interconnected protected areas network with corridors and buffer zones, analogous to the Dutch NEN, is therefore not required.

1.3.2 Environmental pressures

Netherlands

Substantial efforts to decrease environmental pressures (fig. 17) have made a significant contribution to slowing down the rate of biodiversity loss in the Netherlands. However, a further decrease is needed in order to be able to stop biodiversity loss. The level for sustainable nature conservation has not yet been reached.

The main threats for (terrestrial) biodiversity in the Netherlands are atmospheric nitrogen deposition, acidification, desiccation and habitat fragmentation (Wamelink et al., 2013). For two thirds of the natural surface the critical load for nitrogen deposition has been exceeded, while desiccation is present in over 90% of the area of groundwater dependent nature. Problems with acidification are less pronounced. Fragmentation (see §1.3.1) is presently causing regional problems for up to six species (out of 80 species tested). When the four pressures are combined, about two thirds of the areas suffer from at least one pressure. Many areas suffer from a combination of nitrogen deposition and desiccation. However, no areas suffer four pressures (fig. 18). Wamelink et al. (2013) conclude that environmental and spatial conditions are insufficient to halt biodiversity loss.

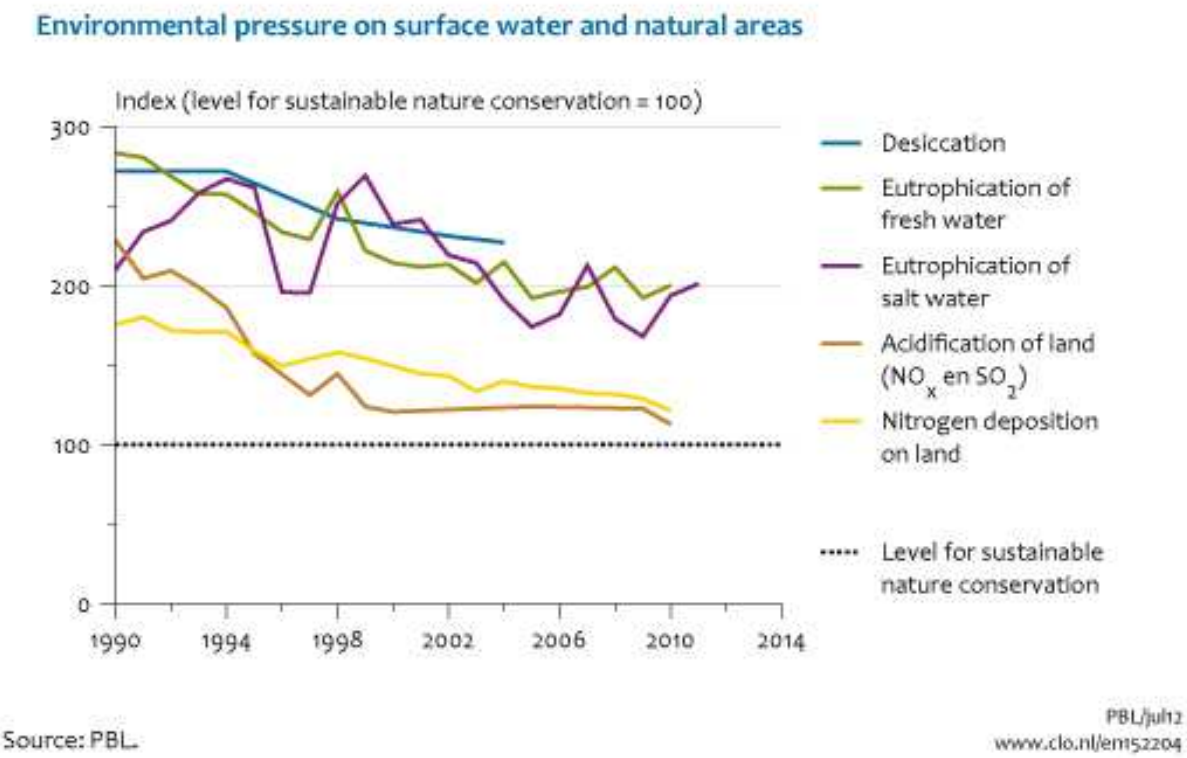


Figure 17. Environmental pressures in the Netherlands (CBS et al., 2012).

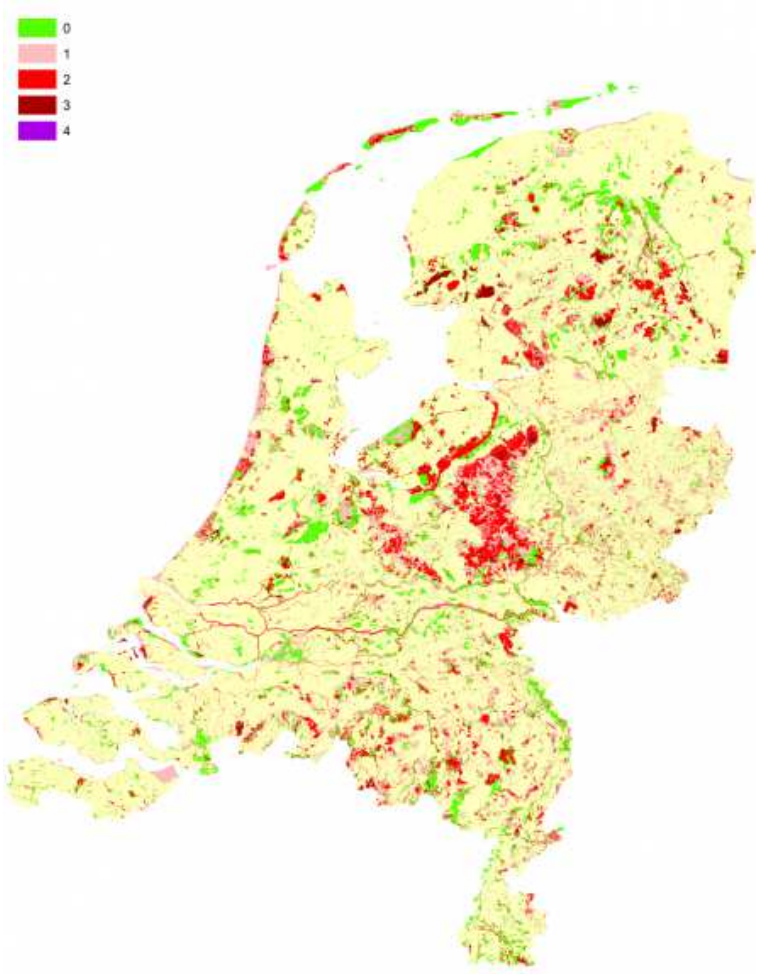


Figure 18. The number of bottlenecks that negatively affect protected areas for nitrogen deposition, soil acidity, groundwater and spatial coherence for 80 species (Wamelink et al., 2013).

Caribbean Netherlands

Nutrients: Notwithstanding all management successes, the reefs of Bonaire are under high pressure and have been undergoing a steady decline since the 1970's. Aside from overfishing it's clear that nutrients of anthropogenic origin are maybe the single greatest problem that local nature that coral reefs face, including those of Bonaire. As coastal development continues and the use of septic tanks is widespread, the problem is far from over. This problem is probably much less acute on the islands of Saint Eustatius and Saba due to the smaller scale of development and differences in geology (Debrot et al., 2011a).

Overgrazing by (feral) livestock, such as goats, cows and pigs also has a large effect on the eutrophication of the island's coastal waters and sedimentation of the coral reefs. Due to consistent overgrazing over the years, in the case of Bonaire for more than 30 years already (Coblentz, 1980), the seedlings of the native vegetation stand no chance of growing to a size at which they will contribute to the containment of the topsoil and can independently withstand the effect of overgrazing. On top of that, the hooves of the goats trample and loosen the topsoil. During heavy rains all this nutrient rich topsoil will wash down into the catchment areas (saliñas) and from there into the ocean, where nutrients and sediment are spread out over a large part of the coral reefs. The

corals are covered in a thin layer of sediment, reducing penetration of sunlight and photosynthesis. This effect is amplified by the influx of extremely nutrient rich water, stimulating algal growth. On fragile ecosystems such as coral reefs, which are already under stress, these additional stressors have the potential to cause great harm. Overgrazing by roaming and/or feral livestock is not only a major cause of erosion and nutrients ending up in the sea, it also causes desertification by preventing regeneration of the vegetation and recruitment of trees that are essential as food sources for the endemic parrot and parakeet as well as other birds.

Oil: The oil industry is an important industrial stakeholder in the Caribbean Netherlands. Oil transshipment facilities are found on Bonaire and Saint Eustatius and represent economically important industries. At the same time these industries entail a major risk to the environment as well as to the tourism industries on which the islands also depend heavily. Cleanups may be expensive or impossible, whereas oil spills are frequent, and soils and beaches are contaminated with highly persistent oil and tar.

1.3.3 Invasive species

Netherlands

New water connections, international transport and trade cause the introduction of new species in the Netherlands. The Danube-Rhine canal for instance connected the Danube and Rhine flora and fauna. Nowadays, alien species outnumber the native species in the large Dutch rivers. Native species still occur, and it is not clear yet to what extent alien species are invasive and replace native ones. On land, at least 145 plant species have settled in the Netherlands since 1900, most in urban regions (fig. 19). Climate change is one of the factors which enable species to settle in the Netherlands.

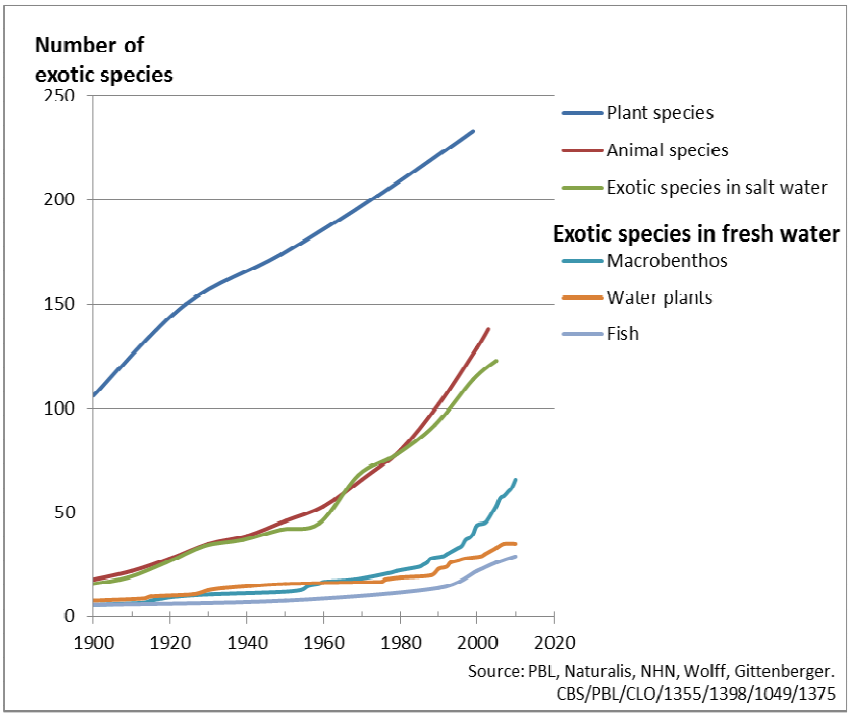


Figure 19. Exotic species in the Netherlands (CBS, et al., 2008ab, 2013gh).

Caribbean Netherlands

Invasive species are one of the biggest threats to the fragile biodiversity of the Caribbean Netherlands, both on land and at sea (Burg et al., 2012; Debrot et al., 2011b; Buurt en Debrot, 2011a; Buurt en Debrot, 2011b; Jongman et al., 2010). Some of the obvious problematic species are Corallita (*Antigonon leptopus*) and Donnagrass on Saint Eustatius and Saba and Rubber Vine (*Cryptostegia grandiflora)* and Neem Tree (*Azadirachta indica*) on Bonaire (Debrot et al., 2011a). Burg et al. (2012) lists another 80 potentially invasive flora species.

Most detrimental fauna species are mammals like goat, Mongoose, cat and Black Rat. But small invasive species can also have a big impact. The native White Cedar (*Tabebuia heterophylla*) of Saba has become all but extinct due to a plague of invasive insects (Debrot en Sybesma, 2000). Less is known about exotic marine species, of which many reach the area in the ballast water of ships. To date only 27 species are known to occur in the waters around the Caribbean Netherlands, of which some can be called invasive. Another 76 exotic species are known to occur in the Wider Caribbean region and may reach the Caribbean Netherlands in time through the sea currents (Debrot et al., 2011b). One of the most problematic species is the invasive Lionfish (*Pterois volitans miles*) from the Indo-Pacific region. This species predates on young native reef fishes and as there are no natural predators of the Lionfish it can have a big impact on the natural populations of herbivore fish and indirectly on the presence of algae on the coral reefs. When the first Lionfish arrived in the waters of Bonaire, STINAPA Bonaire, the local nature management organisation put a control programme into place. Volunteers are trained to become certified hunters and Lionfish may only be culled with a special, spring-loaded device, called an ELF (Eliminate Lionfish). On other Dutch Caribbean islands the regulations are less strict, but working just as well. The control programmes that were put into action on Bonaire and Curaçao seem to have had an effect (León et al., in prep.). Lionfish numbers are going down on both islands. However, control efforts have to be continuous from now on, since complete eradication of this invasive is out of the question.

1.3.4 Overgrazing

Netherlands

In the Netherlands semi-wild livestock breeds have been introduced to nature reserves for grazing purposes. Overgrazing is no serious threat in the Netherlands as the grazing populations are well controlled.

Caribbean Netherlands

Grazing by feral or free roaming animals (goats, sheep and cattle) is a serious problem on all islands of the Caribbean Netherlands. Even though it is illegal to let livestock roam freely, this has become the accepted practice on all islands. Aside from invasive species, overgrazing by livestock is the single greatest threat to terrestrial biodiversity in the Caribbean Netherlands. It has been known to be an issue for a long time. Overgrazing takes place in conservation areas managed by the national parks organizations as well as in the public domain. It is easier to address in the areas managed by the national park organizations than on public lands. It has been effectively addressed on Curaçao in the Christoffel park as well as on the islands of Klein Curaçao and Klein Bonaire.

1.3.5 Climate change

Netherlands

About half of the Netherlands lies below sea level. Though the Netherlands are well known for their water management, climate change induced sea level rise and increasing peak rainfall patterns will (theoretically) increase the chances of flooding. The opportunities to control water outside of the dikes is much more limited and sea level might cause the 'drowning' of intertidal areas if the sedimentation processes cannot keep up with the sea level rise (Kabat et al., 2009). This would threaten millions of water birds for which these areas are crucial for foraging during the migration, wintering and breeding periods.

Climate change already causes shifts in species distribution and enlarges the growing season of plants. Distribution shifts are noticeable even in a country as small as the Netherlands. For a selection of species in the Netherlands, the trends show that populations of species with a preference for a cool environment decrease, while species that prefer warmth increase (fig. 20). The impact of climate change strengthens the importance for defragmented nature reserves within an ecological network, which allows species to migrate depending on the climate preferred.

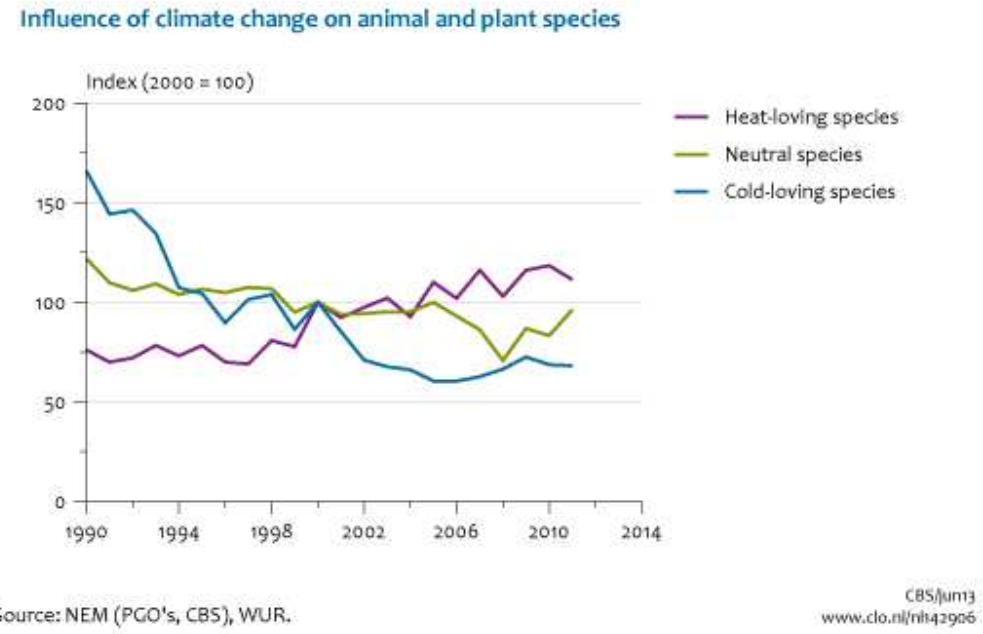


Figure 20. Development of species populations in the Netherlands with a preference for warm or cool climate (CBS et al., 2013p).

Caribbean Netherlands

The Caribbean islands are in the front lines of vulnerability to climate change. The Intergovernmental Panel on Climate Change (IPCC) predicts hotter air and sea surface temperatures, sea-level rise, ocean acidity increase, precipitation changes, increased tropical storms, hurricanes and other extreme weather events. This all poses severe threats to the ecosystems and ecosystem services of the islands. Consider for instance the impact of coral bleaching on the diving industry. If measures are not taken, sooner or later the islands will pay a high environmental and economic price. In this respect, Saba and Saint Eustatius are better prepared, as these islands have more practice in coping with and recovering from hurricanes, which are much more frequent in the Windward than in the Leeward islands of the Dutch Caribbean. Since it is impossible to counter the effects of climate

change from a small island perspective, the only way to deal with it is to increase the resilience of the ecosystems in order to make sure that they can better withstand the impacts and to decrease the negative impacts on the ecosystems.

1.3.6 Overfishing

Netherlands

Commercial fishing takes place in the North Sea and Wadden Sea and to a small extent on inland waters. The main fishing area is the central and southern North Sea. Important commercial stocks in the North Sea (herring, plaice, sole) have recovered or are recovering after a period of overfishing in the 1980s and 90s. Not only have spawning stocks increased, fishing pressure has decreased. Some unregulated species such as Sea bass (*Dicentrarchus labrax)* give rise to concern and call for urgent measures.

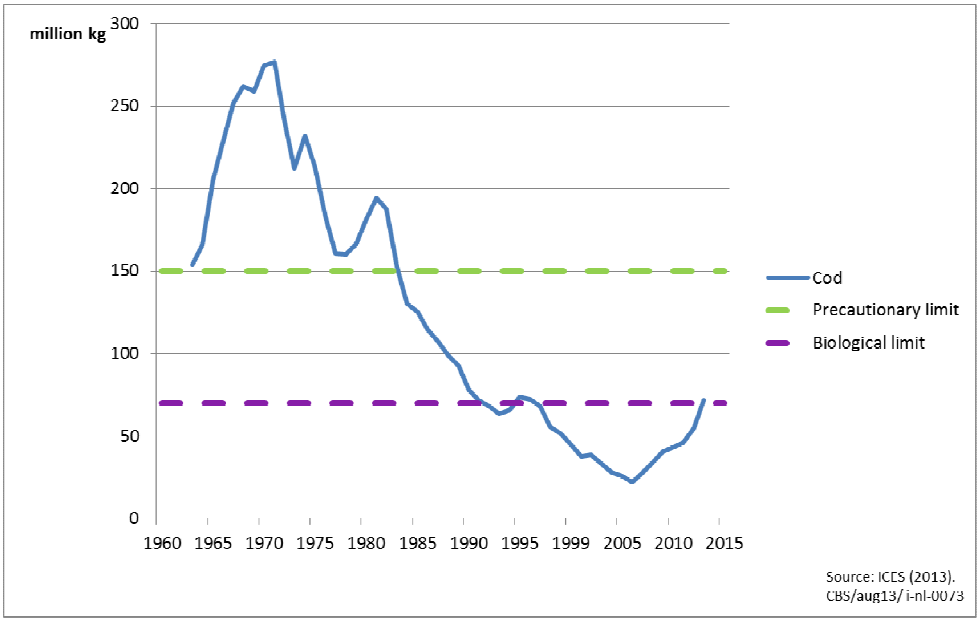


Figure 21. Status and trend for the Cod stock (CBS et al., 2013q).

Another stock of concern is the North Sea cod (fig. 21), which is currently just above the biological limit and recovering quickly, but still requires strict measures. Long living and slow reproducing shark and ray species are also vulnerable; they are a by-catch of sea bottom fishery and their stocks been diminished.

The fact that commercial fish stocks show positive trends does not automatically implicate that the fishing industry is environmentally acceptable. Certain bottom trawls have a severe impact on vulnerable bottom fauna. Management measures are taken in marine Natura 2000-sites to reduce this impact, where necessary. Meanwhile continued innovation is required in order to reduce the footprint on the marine environment, also outside the Natura 2000 areas.

Caribbean Netherlands

In the Caribbean Netherlands the impacts of overfishing are mainly within the Territorial waters close to the coast and often within the marine protected area boundaries. Within the EEZ overfishing is a problem on the Saba Bank where traditional fishing targets breeding aggregations of groupers (Meesters et al., 2010), but a large part of the fishing occurs within the Territorial waters of Saba.

Coral reef ecosystems are prone to overfishing and stock collapse. Such stock collapse of large commercial reef fish stocks has taken place throughout the Caribbean Netherlands (e.g Meesters et al., 2010; Debrot and Criens, 2005). Studies by IUCN on the reefs of Bonaire also point to overfishing as a key threat to the reef ecosystem (IUCN, 2011), especially since coral reef fish populations also face a combination of other serious threats. These include the deterioration of the coral reef habitat itself, particularly in shallow waters where nursing areas among branching corals have completely disappeared.

1.4 Impacts of the changes in biodiversity for ecosystem services and the socio-economic and cultural implications of these impacts

The policy and research on ecosystem services and the impacts of declining biodiversity for society are quite new in the Netherlands. Substantial efforts have been carried out to better understand its impact. TEEB studies have been carried out (see §1.1.2) and an indicator of the status and trends of the main ecosystem services is currently being developed by the Environmental Assessment Agency and partners. It is expected to be published mid-2014.

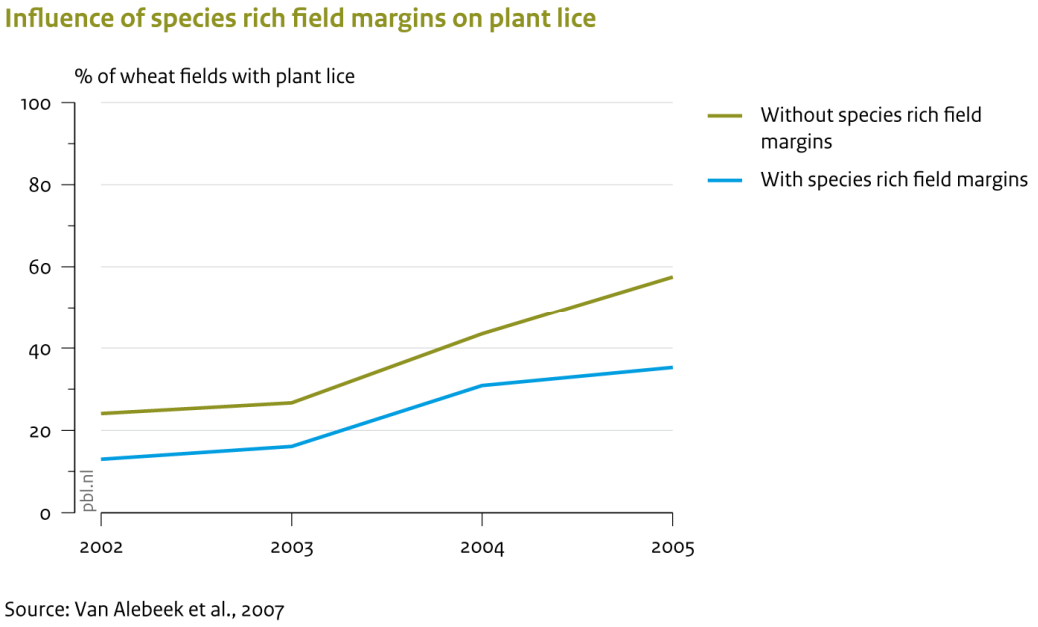


Figure 22. Influence of field margins on pest insects.

Several separate studies on the services are available; such as the influence of species rich field margins on pest insects. The use of pesticides in the last century increased productivity and decreased the risks of crop failure to a level ecosystem services alone cannot sustain. However, the use of pesticides carries health risks and leads to a less attractive homogenisation of the agricultural landscape. Pilots were carried out to study the possibilities for reversing the situation.
Scientific research in various pilots, such as at Hoekschewaard and through the Functional Agrobiodiversity project in Zeeland, show that functional agrobiodiversity can be used in farm management. In Hoekschewaard, the predatory insects and spiders within species rich field margins in two consecutive years controlled pest insects to the extent that the use of pesticides was not necessary (Scheele et al, 2007). The benefits of a more sustainable approach to cultivation are

therefore in sight (Vosman et al, 2007). A review of the pilot studies show that the practice of this type of pest control is difficult. The knowledge is still not applicable enough for various practical situations. Whilst species rich field margins around arable land are able to improve natural pollination of crops and to enhance their disease and pest resistance (fig. 22; CREM and NovioConsult, 2008) they are not enough to deliver crops that are as productive and have as low a risk of crop failure as those in which pesticides are used. In order to increase the effectiveness of the use of agro-biodiversity instead of pesticides, customization and a regional approach are needed (Vosman et al, 2007). Furthermore, the investments and risks have to be taken by farmer and the full profit does not end up at the farm. The recreation sector profits from a more attractive landscape, the health sector from less pesticide residues and organisations that use and manage water from cleaner water.

1.5 Possible future changes for biodiversity and their impacts (optional)

This paragraph describes future scenarios for biodiversity in terms of policy choices, pressures, impacts on biodiversity and implications for human well-being. They show what might happen with different policy choices and different investments in biodiversity and use of ecosystem services. These scenarios may have been the inspiration for the survey of policy options to develop a 'Nature Ambition Great Waters 2050-2100' (Min. EZ, 2013g), which is described briefly below and which will be further developed in 2014.

Netherlands

With the Nature Outlook 2010–2040 (PBL 2011) the PBL Netherlands Environmental Assessment Agency aims to provide a source of inspiration to support government authorities and societal organisations in formulating the future policy for nature and the landscape. This was done on the basis of four ideal-typical nature perspectives which are the basis for PBL's suggestions towards nature and landscape policy reform. Starting points for creating the four 2040 nature perspectives were people's widely varying motives for occupying themselves with nature and the landscape:

1. Vital nature: in this perspective every effort is made to address the current spatial and environmental pressures that drive biodiversity loss.
2. Experiential nature: in this perspective nature development and management are focused on recreational use.
3. Functional nature: this perspective is about provisioning and regulating ecosystem services with a real economic worth and value to society.
4. Tailored nature: in this perspective people live and work surrounded by nature and enjoy their leisure time there. Improvement of environmental conditions is unnecessary.

These four visions of the future show that the Netherlands could look quite different in 2040, depending on which policy is pursued; the perspectives for nature can also be quite different. Figure 23 shows that the perspectives for nature will improve within the 2040 visions 'Vital Nature', 'Experiential Nature' and 'Functional Nature' if compared to 2010. Only for 'Tailored Nature' it will get slightly worse (de Knegt et al., 2011). These nature perspectives are however one-dimensional, ideal-typical visions of the future, intended to widen the scope of thinking about nature and the landscape. In practice, combinations will often be seen.

The Nature Outlook 2010–2040 may be seen as a source of inspiration for the survey on policy options for the development of the Nature Ambition Great Waters 2050-2100 in 2014 (Min. EZ, 2013g). The core of this policy survey is that natural processes get as much space as possible. This

will lead to resilient and robust nature, which best conserves biodiversity. In many cases, this will be in synergy with measures for flood protection as well as providing opportunities for recreational experience and utilization. Plausible future scenarios are: more space for the big rivers, restored tidal systems and fresh water-salt water gradients in the Southwestern Delta, dynamic coastal management and gradual transition zones from land to water in the IJsselmeer area.

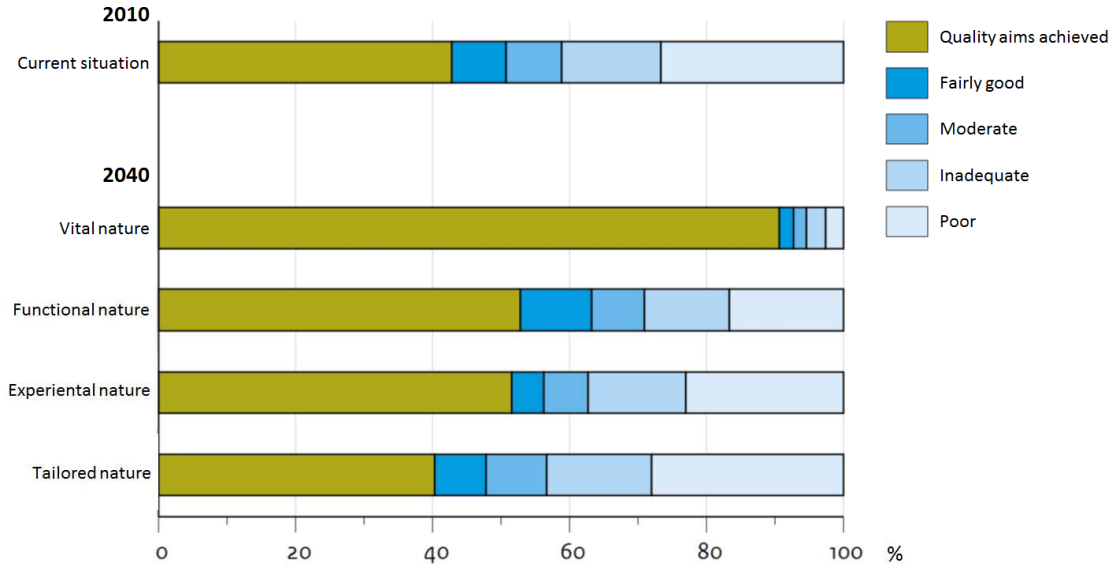


Figure 23. The perspectives for nature in the four 2040 visions if compared to 2010 (de Knegt, et al. 2011).

II - The national biodiversity strategy and action plan (NBSAP), its implementation, and the mainstreaming of biodiversity

2.1 Biodiversity targets set by the Netherlands

This section describes the Dutch contribution to the CBD targets and the EU biodiversity strategy. The most important biodiversity strategy plans, their targets and actions are described in section 2.2.

Netherlands

The Convention on Biological Diversity provides the basis for the EU Biodiversity Strategy to 2020. Dutch biodiversity policy is in line with the EU strategy and CBD. In 2011 the EC adopted a new and ambitious strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. This strategy covers six main targets and 20 actions to help Europe reach its goal. The six targets concern:

1. Full implementation of EU nature legislation to protect biodiversity.
2. Better protection for ecosystems, and more use of green infrastructure.
3. More sustainable agriculture and forestry.
4. Better management of fish stocks.
5. Tighter controls on invasive alien species.
6. A bigger EU contribution to averting global biodiversity loss.

The focus of biodiversity protection in the Netherlands lies on the implementation and management of the EU Natura 2000-sites and the conservation of its Natura 2000-habitat types and species. These sites are part of the National Ecological Network (NEN) which is due to be completed in 2027. Within this network, the focus lies on the implementation of the ecosystem approach, as the protection of habitat is essential for the conservation of biodiversity as a whole. Outside the NEN, the government sets targets to increase the conservation status of species and habitats that depend on or are affected by agriculture. The national targets are presented in the Nature pact (Min. EL&I, 2013) and they are directly related to target 1-3 from the above strategy. The Nature Pact refers to an agreement between the national government with the provinces, and the provinces have translated this into agreements with social partners. A measurable target is for example that 'between 2011 and 2027 80.000 hectares new nature is developed to realise the NEN'.

The focus of ecosystem services protection lies on the implementation and management of Natural Capital and sustainable production and consumption of fishery, forestry and agriculture mostly outside the Netherlands. The national targets of this focus are presented in the Natural Capital Agenda (Min. EZ & Min. I&M, 2013) and they are directly related to target 3, 4 and 6 from the above strategy. A target of this strategy is: 'By 2020, agricultural management is sustainable in a such a way that biodiversity is preserved'.

The control of invasive species relies on the implementation of the Dutch Policy Memorandum Invasive Alien Species that was published and sent to the Parliament in 2007. The policy, with the emphasis on prevention, is in line with agreements made in the framework of the Convention of Biological Diversity and is directly related to target 5.

Caribbean Netherlands

The biodiversity targets for the Caribbean Netherlands are in line with the international treaties, conventions and regional agreements which the Kingdom committed itself to, as well as national laws in the field of nature and biodiversity in the Caribbean Netherlands.

The National Biodiversity Strategy and Action Plan (NBSAP) for the Caribbean Netherlands only focus on those areas and species that are part of these international agreements. The NPP-2017 aims for a sustainable use of nature in the Caribbean islands, so that ecological systems and ecosystem services are conserved. The two targets concern:

- Mainstreaming of nature conservation and sustainable use in all sectors of society.
- Conservation of biodiversity through improved planning and management of protected areas and species.

2.2 Update of the NBSAP to incorporate these targets and to serve as an effective instrument for mainstreaming biodiversity

This section provides a brief description of the targets and actions in the most important national biodiversity strategy and action plans.

Netherlands

The Netherlands have had a national biodiversity strategy and action plans for many decades. Important policy plans were the Nature Policy Plan (Min. LNV, 1990) and “Nature for people, people for nature: a policy document for nature, forest and landscape in the 21st century” (Min. LNV, 2000). Additional biodiversity initiatives have been addressed by specific priority programmes such as "Biodiversity works: for nature, for people, for ever: the biodiversity policy programme of the Netherlands 2008-2011”. A Dutch vision for nature is still under construction and will be presented to the public in April 2014. Meanwhile the parliament is informed about the progress of the vision and the main targets by the policy letter ‘Forward with nature policy - midterm review’ (Min. EZ, 2013d). These targets are:

1. To create a robust National Ecological Network (NEN).
2. Improve environmental conditions for species protection.
3. Regional approach to Agri-environmental management.
4. Nature integrated in economic growth.
5. To make use of the self-organizing abilities of citizens, companies and organizations.

In the last three years the Dutch government decentralised responsibilities of realization and management of nature to the provinces. Due to the economic crises, budget cuts were made by the government on several policy areas, naure and biodiversity being one of them. Ambitions on nature and biodiversity therefore have been revised and in 2013 the ambitions towards 2027 were agreed upon in the so called Nature Pact between the national government and the provinces. The ambitions agreed upon include:

- extension of the NEN with ca. 80.000 hectares, including realisation of important ecological connections;
- management of nature an environmental conditions aiming to meet the goals set by the EU Birds and Habitats Directives;
- improving the system of nature management by farmers aiming to be more efficient and more effective;
- more cross-sectoral strategies to integrate nature management with other spatial functions, like water management and recreation.

Developing a nature-inclusive economy, securing international biodiversity and the conservation of nature in the Netherlands are important elements of nature and biodiversity policy. Where policy instruments such as nature legislation, the National Ecological Network (NEN) and Natura 2000 and the nature policy plan for the Caribbean Netherlands (Parliamentary paper 30 825, no. 191) are specifically focused on the conservation and strengthening of the Dutch nature, the Natural Capital Agenda focuses – both nationally and internationally – on conservation and sustainable use of biodiversity.

The biodiversity policy document of the Netherlands named *'Natural Capital Agenda. Preservation and sustainable use of biodiversity' (*Min. EZ & Min. I&M, 2013*)* is based on the international agreements on biodiversity in the Convention on Biological Diversity. The strategy's objective is to secure resilient ecosystems and ecosystem services that contribute to biodiversity, water and food security, welfare and combating poverty. The agenda is also based on the recommendations in «Groene Groei» (*green growth*), provided by the Dutch Taskforce on Biodiversity and Natural Resources (Taskforce biodiversiteit en natuurlijke hulpbronnen, 2011).
The Natural Capital Agenda aims at:

I. An international approach to meet the criteria for sustainable trade for the most important agricultural commodities with large impact on biodiversity by 2020. Actions focus on wood, genetic plant material and biomass for energy, and farming practices mainly produced and carried out in other parts of the world.
II. Production and consumption of fisheries meet the criteria for sustainable fisheries. Marine biodiversity is restored, overfishing in EU waters is stopped, protected areas are established and pollution is reduced and cleaned up by 2020. Actions focus on protection of Caribbean coral, protection of the Sargasso Sea, clean-up of marine litter and restoration of the sea bed of the North Sea.
III. Sustainable agriculture by 2020. To contribute to a sustainable balance between food production, biodiversity and ecosystem restoration mainly in other parts of the world. Actions focus on pesticide and herbicide use, restoration of degraded ecosystems, and 2 pilot projects related to rural development in developing countries.
IV. Ecosystem services in the Netherlands are mapped, and are integrated in decisions made by government, business and industry. Actions are to make a digital map of the services, to apply TEEB studies and to create a system for Natural Capital Accounting.

The actions of the national capital agenda contribute directly to EU strategy targets 'more sustainable agriculture and forestry', 'Better management of fish stocks', and 'a bigger EU contribution to averting global biodiversity loss'. The targets and actions presented in the policy letter 'Forward with nature policy' contribute directly to 'a full implementation of EU nature legislation to protect biodiversity', 'a better protection for ecosystems, and more use of green infrastructure' and 'a more sustainable agriculture and forestry'.

The national strategy continues to contribute to protection and sustainable use of biodiversity and ecosystems but differs from the former strategies by the following aspects:

- Citizens, companies and social organisations have an increasing responsibility to contribute to nature protection
- The consequences of climate change for the ability to preserve nature
- The advantages of combining nature protection with other social interests

Also in international development cooperation biodiversity has been integrated. This is monitored via the Rio Markers for biodiversity. The Dutch Ministry of Foreign Affairs also contributes to (programmes of) relevant international organisations like the Global Environment Fund (GEF), the

International Union for the Conservation of Nature (IUCN), UNEP, etc. and international NGO's like the World Resources Institute (WRI) .

Caribbean Netherlands

The first synoptic review of environmental management for the coast and sea of the Dutch Caribbean was written in 2000 as part of a Millennium initiative by Elsevier (Debrot and Sybesma 2000). More recently (van Buurt and van der Berg, 2010) conducted a full review of the status of implementation of the CBD in the Dutch Caribbean, while Debrot et al. (2011a) did an evaluation of the National Nature Policy Plan 2001-2005 (NPP-2005) for the former Netherlands Antilles. This was used as a starting point for developing a Nature Policy Plan for the Caribbean Netherlands. The evaluation revealed that limited capacity, funding and political support were the main bottlenecks for implementation of NPP-2005.

The first Nature Policy Plan for the Caribbean Netherlands was published in May 2013 (Min. EZ, 2013a) and covers the period 2013 – 2017 (NPP-2017). It is intended to be updated every 5 years. The NPP-2017 has been developed with all relevant stakeholders, while essential budgets will be reserved. Nature management in the protected areas of all six Caribbean islands within the Kingdom will be funded from a trust fund, set-up by Dutch Caribbean Nature Alliance (DCNA). This trust fund is financially supported by the Dutch Government.

The ambitious NPP-2017 covers two main targets and 32 strategic actions. Mainstreaming of nature conservation and sustainable use in all sectors of society is the first target. It concerns 17 strategic actions in the field of international, economic and juridical affairs, such as the development of guidelines and best practises for sustainable agriculture and fisheries; it also covers sustainable use of biodiversity according to the CBD-Access and Benefit Sharing. The other target concerns the actual conservation of biodiversity through improved planning and management of protected areas and species. It concerns 15 actions in the field of management of protected areas and species; research and monitoring to be able to assess the status and trends of biodiversity; CEPA (communication, education and public awareness); and recovery and/or improvement of degraded ecosystems. It concerns actions like management of the Saba Bank, implementation of a marine reserve for marine mammals and sharks and evaluation of the management of Ramsar sites.

The National Biodiversity Strategy and Action Plan (NBSAP) for the Caribbean Netherlands is contained in the Nature Policy Plan Caribbean Netherlands, which covers the period 2013-2017 (NPP-2017). The NPP-2017 aims for a sustainable use of nature on the Caribbean islands, so that ecological systems and ecosystem services are conserved.

2.3 Actions taken to implement the Convention since the fourth report and outcomes of these actions

This section describes the most important policies, actions, funding and legislation taken to protect and preserve biodiversity.

Netherlands

The Aichi biodiversity targets have been elaborated by the European Union in the EU Biodiversity Strategy for 2020. The Netherlands is committed to the implementation of this strategy and uses it as a framework for its national biodiversity work. The main goals of the EU Strategy reflect the priorities that have also been recognized by the Dutch government: implementation of the Natura2000 network for protected areas, restoration of ecosystem services, greening of agriculture

and forestry, sustainable fisheries, management of invasive alien species, integration of biodiversity and trade and development cooperation.

Based on the global and European commitments the Netherlands has recently adopted a new priority agenda for biodiversity, the 'Natural Capital Agenda 2013' ('Uitvoeringsagenda Natuurlijk Kapitaal'; Min. EZ & Min. I&M, 2013). The agenda intends to facilitate new and existing initiatives that relate to greening of consumption and production patters, mapping the value of ecosystem services, and developing additional financial investments in biodiversity. Concrete schemes and initiatives include the Platform Biodiversity, Ecosystems and Economics (a partnership between government, private sector and NGO's), TEEB studies and Green Deals. In this way the Netherlands will contribute to addressing some of the key drivers of biodiversity loss and further integrate biodiversity goals into economic activities.

The Dutch government has already taken several actions that are summarised in the policy letter 'State of affairs biodiversity policy'(Min EL&I, 2012a), for example:

- The Dutch government, several organisations of farmers, small and medium enterprises (LTO, MKB, VNO-NCW) and the Dutch Butterfly Conservation organisation, at the beginning of 2011, signed some 150 Green Deals relating to energy, climate, water, raw materials, mobility, biodiversity, bio-based economy, construction and food.
- TEEB studies (The Economics of Ecosystems and Biodiversity) have been commissioned to understand the economic value of ecosystem services to government, business and civil society and by that to support the decision-making process for policy-making and large investment projects; guidelines for citizens, trade and industry for working with biodiversity are available on the website www.biodiversity.nl.
- Initiative fair trade (Initiatief Duurzame Handel).

2.3.1 Raising awareness

During the International Year of Biodiversity 2010, a 'Coalition 2010' gathering over 200 companies, NGOs and local governments engaged in massive awareness-raising actions, in order to increase public awareness of the importance of nature and their willingness to share responsibility for its preservation. The over-all theme was twofold: 'The Garden and The Fridge', addressing care for nature as well as consumption and lifestyle. Ten regional and two nationwide projects received government co-funding, the rest – over 200 projects and initiatives - was supported by the initiators. The Coalition organised the nationwide celebrations of World Biodiversity Day 2010 and 2011 involving national celebrities including HRH Princess Irene. Since then, Coalition partners continued awareness-raising activities with various funding sources. The annual celebration of World Biodiversity Day was combined with 'Fête de la Nature' Holland for the first time in 2013. For the wider continuation of this event in 2014 and on a foundation was established with funding by the Nationaal Groenfonds (Dutch National Fund for Rural Areas) and other organisations. In addition, the National Tree Planting Day has been celebrated annually under a variety of sub-themes involving thousands of school children.

Numerous CEPA activities have been implemented under the governmental nature education programmes. Highlights are:

- Training of intermediaries in Local Biodiversity Action Plans;
- Establishment of Communities of Practice; e.g. of companies integrating biodiversity into their management;

- Establishment of approx. 20 local ‘arrangements’ around the re-greening of school premises;
- Integrating biodiversity into curriculum updates, such as the new concept approach in the subject area of biology in secondary education.
- Support to extension and education activities by local NME groups, nature guides, visitor centres and National Parks.
- In a massive event titled ’The 24 Hours of Nature’ (De 24 uur van de Natuur) on 22 June 2013, i the Ministry of Economic Affairs encouraged some 330 nature management organisations, youth and educational organisations, local governments and companies to present their nature activities to the public, both in the Netherlands and in the Caribbean, An estimated 10,000 people attended this ‘open day’ for nature. Some 2600 of them participated in nature data collection which resulted in over 24,000 sightings of plants and animals for storage in the National Flora en Fauna Databank (see 3.1.19).
- At the same date, the Secretary of State for Nature, Sharon Dijksma, presided on a “Nature Summit” on 22 June 2013, as a kick-off for improving the involvement of all layers of society in nature and biodiversity policy formulation. This was preceded as well as followed by a series of ‘Green Tables’ in which specific issues were discussed and fed into the government’s new ‘Nature Vision’ (to be completed in spring 2014).

Recently, the present government has taken several new steps to increase awareness and involvement of the Dutch government:

- The completion of two major governmental programmes for awareness raising that were operational till the end of 2012: ‘Learning for Sustainable Development (LvDO)’ and ‘Nature and Environmental Education’ (NME). They were merged into a follow-up programme: ‘Progress in Sustainability by Social Innovation for a Green Economy’ (’Duurzaam Door: Sociale innovatie voor een groene economie, 2013-2016’; Min. EZ, 2013e).
- In 2014 the themes of the ‘Natural Capital Agenda 2013’ (Min. EZ & Min. I&M, 2013) and its effects will be integrated in the awareness raising program ’Progress in Sustainability’ (Min. EZ, 2013e).

The programme ’Progress in Sustainability’ (Min. EZ, 2013e) is intended to increase knowledge, awareness and attitude for sustainable economy and green economic growth. The programme has a budget of 4 million per year and other parties are supposed to contribute financially. The programme consists of five themes: biodiversity, energy, food, water and materials. These themes are bound to transition processes like sustainable production and consumption, socially accepted enterprise, educational issues and integral development.

2.3.2 Ecosystems and essential services safeguarded

The ‘Natural Capital Agenda 2013’ (Min. EZ & Min. I&M, 2013) foresees several concrete actions related to safeguarding ecosystems and essential services:

- The Netherlands carry out a National Ecosystem Assessment and the results on the functioning of ecosystems and the (potential) services provided will be gathered in the Digital Atlas Natural Capital (“DANK”). Governments, businesses and others can use it for calculating the total stocks and flows of natural resources and services in a given ecosystem or region, the so-called Natural Capital Accounts. A first operational version of “DANK” is due to be completed by the end of 2014 and will be expanded towards 2020.

- A two-year program will be started by the Netherlands Environmental Assessment Agency (PBL) as a follow-up to the completed and on-going TEEB-studies (see §1.1.2). This program aims to apply knowledge from the TEEB-studies in the decision making process for the Common Agricultural Policy (CAP) and the Delta-program. As far as possible concrete products like manuals and training will be developed within the PBL-program.
- The Netherlands will take part in the UN-pilot to apply Natural Capital Accounting in the Netherlands.
- The government supports initiatives that stimulate Dutch industries to assess and respect the true value of Natural Capital, like: initiatives that increase the visibility of the impacts of businesses on biodiversity and weigh them in business processes; initiatives that implement True Pricing; and initiatives which integrate Natural Capital into business accounts (for example, by supporting the set-up of a system in biodiversity benchmarking between companies and industries in 2014).

2.3.3 Reduce pollution form nitrogen deposition by a national programmatic approach

The 'Programmatic Approach to Nitrogen' ('Programmatische Aanpak Stikstof, PAS) is the most important strategy to improve environmental conditions necessary for biodiversity protection in the Netherlands. The PAS is foreseen to be implemented in 2014 (Min. EZ, 2013f).
A number of national and regional governments cooperate in the PAS to achieve two goals near Natura 2000-sites. Halting the loss of biodiversity due to nitrogen deposition, as well as ensuring its recovery. On one hand this will be achieved by minimising nitrogen emissions, for instance by tightening the rules for building stables. On the other hand, this will be achieved by implementing nature restoration measures such as additional vegetation management or improvement of the hydrology. As long as the overall nitrogen emissions decrease and the conservation status of species and habitats increases, there will be room for economic development. The restoration measures per site are assessed on its expected effectiveness and are obliged to be implemented after that.

2.3.4 Legislation

The main laws for nature conservation in the Netherlands are the 1998 Nature Conservation Act ('Natuurbeschermingswet') and the Flora and Fauna Act ('Flora en fauna wet'). Both are the Dutch interpretation of the European Birds and Habitats Directives. The 1998 Nature Conservation Act focuses on the preservation of nature areas, while the Flora and Fauna Act focuses on the protection of plant and animal species.

The Nature Conservation Act provides for the designation of nature areas of national or international importance (Natura 2000 sites). The Act regulates which activities are allowed in protected nature areas and under which conditions. A permit must be obtained for activities that may damage natural values and measures to mitigate or compensate the damage are obliged. The act also sets out requirements for national reporting on nature and biodiversity and its policy, which is published once every two years by the Environmental Assessment Agency in the 'Assessment of the Living Environment' ('Balans van de Leefomgeving').

Table 1. Organisations and sectors with a Code of Conduct.

Present Codes of conduct
Nature Management
Responsible Forest Management

Association of Regional Water Authorities
Drinking water companies
Leisure Industry
Construction and Development sector
Foundation Pipelines route Southwest Netherlands
Groningen Seaports
Port of Rotterdam
Provincial Infrastructure
Spatial planning and organisation of Municipalities
Municipal Greening
Federation of Surface Mining Industries
Rijkswaterstaat (manager main infrastructure facilities)
Foundation Soil management Krimpenerwaard
Provincial Infrastructure
Prorail (manager railroad system)
Tennet (electricity transmission operator)

Flora and Fauna Act and Codes of conduct

The Dutch Flora and Fauna Act became active in 2002 and it protects about 500 plants and animals living in the wild. The international treaties, conventions etc. are translated into this law. Dispensation from the Flora and Fauna Act or an All-in one Permit for Physical Aspects (Omgevingsvergunning) is often necessary to carry out work which may influence protected species. Activities are eligible for an exemption in certain circumstances. Two types of exemption exist: a general exemption for common species and an exemption on condition that activities are carried out in accordance with an approved code of conduct (for rarer species). When activities may influence protected species or their nesting, rest or feeding places, compensation might be in order before dispensation is given. The code of conduct states how to prevent or minimize damage to protected plants and animals during the course of recurring management work. Sectors, organizations or trade associations may draw up a code of conduct themselves, which must then be approved by the Minister of Economic Affairs (*EZ*). To date codes of conduct have been approved for around 20 municipalities and a wide range of organizations and sectors (table 1).

Article 7 of the Flora and Fauna Act says that the government should make red lists of species that are threatened in the Netherlands. These red lists are an instrument for species protection. Government has to take action to protect these red-list species.

A new bill containing rules to protect nature, that will replace the aforementioned laws, is under discussion by the Dutch parliament. This bill covers the implementation of the Birds and Habitats Directives and other European legislation and international treaties, and thus the protection of nature areas and wild birds, flora and fauna. It connects ecology and economy. This new bill will possibly enter into force at the end of 2014.

Caribbean Netherlands

The development of the NPP-2017 was largely based on the objectives of the Convention and its regional implementation in the Wider Caribbean through the Specially Protected Areas and Wildlife (SPAW) Protocol. Many of the actions included in the NPP-2017 were thus designed to help implement the Convention. Actions already undertaken or on-going include*:*

- Designation of Saba Bank as a protected area with active management.

- Establishment of a Committee for management of Marine Biodiversity and Fisheries in the waters surrounding the islands.
- Commissioning of targeted research and monitoring of endangered species and ecosystems, including sea turtles, mangroves, coral reefs, conch, marine mammals, and threatened endemic species.
- TEEB study of Bonaire, Saint Eustatius, and Saba.

2.4 Effectiveness of mainstreaming biodiversity into relevant sectoral and cross-sectoral strategies, plans and programmes

In relevant cross-sectoral policy strategies and plans the government points out the problems around biodiversity and natural resources. Until now, there have been no clear biodiversity targets included in these strategies and plans (Taskforce biodiversiteit en natuurlijke hulpbronnen, 2011). Indirectly these strategies and plans contribute to biodiversity and natural resources by increasing sustainable production and consumption. They are in line with EU strategy target 3, 4 and 6 (§2.1). Unsustainable production and consumption or overexploitation of resources is one of the main threats to biodiversity and therefore the subject of three Aichi-targets: 4. Sustainable production and consumption (§2.4.5); 6 Sustainable management of marine living resources (§2.4.3) and 7. Sustainable agriculture (§2.4.1), aquaculture (§2.4.4) and forestry (§2.4.2).

2.4.1 Agriculture

The Common Agricultural Policy (CAP) is an EU policy that was established in 1962. The goals of the CAP range from contribution to farm incomes to sustainable management of natural resources. Around 20% of the 96.3 billion EUR for the 2007-13 period was spent on the Rural Development Programmes, one of the two pillars of the CAP (EC, 2013). In the Netherlands, the agri-environmental schemes are part of these programmes. The current CAP ends in 2013 and a revised policy will therefore be effective from 2014 onwards.

Production

With 60% of land-use, the agricultural sector dominates the landscape in the Netherlands (CBS et al. 2009). It is a highly mechanised and productive sector. In terms of the value of agri- and food product exports the relatively small country of the Netherlands ranks second in the world a position it would like to keep (PBL, 2013). The high productivity is however accompanied by high levels of external inputs like mineral fertilizer, manure, pesticides and energy, which also rank among the highest in the world (Wageningen UR, 2008). As such the agricultural sector is mainly responsible for the loss of natural habitat and decrease of environmental conditions in the Netherlands.

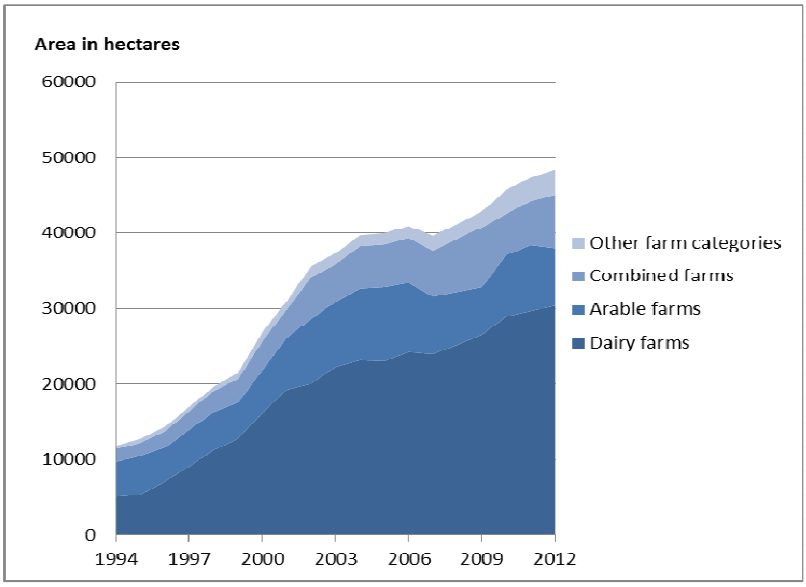


Figure 24. Increasing area used for organic farming in the Netherlands (source CBS et al., 2013e).

Since 1975 the Dutch government has supported biodiversity protection on agricultural land ('relatienota') and agricultural nature management remains an important part of the Dutch nature policy (Min. EZ & Min. I&M, 2013). The agri-environmental schemes are however currently being reconsidered. The policy to actively integrate nature management with intensive farming turned out to be not effective enough (Rli, 2013). Biodiversity on intensive farmland decreased dramatically, despite the efforts taken by many stakeholders involved to improve the situation (Rli, 2013). The Dutch Government generally acknowledged the conclusions from the RLi and, anticipating the forthcoming 2014 Nature Vision, it introduced five tracks, including one for agricultural nature conservation (2.5). The Ministry of Economic Affairs and the Association of the Provinces of the Netherlands (IPO) are working on a nationwide target framework for the agricultural area based on international obligations.

Several organisations consider the implementation of core areas for meadow birds as the only way to stop the dramatic population decline (Teunissen et al., 2012). Loss of biodiversity on farmland is a trend that can also be observed throughout Europe (fig. 8) and the EU CAP for 2014 – 2020 has therefore shifted its focus on animal and environmental care.

Over the past three decades Dutch society has become more and more critical about the impact of the increasingly-intensified agriculture on landscapes, natural habitats and biodiversity. The Dutch generally not only expect the agricultural sector to produce sufficient and healthy food at acceptable prices, but this also has to be done in attractive rural area that allow people to enjoy recreate pursuits and to value nature (Wageningen UR, 2008). This changing attitude is among others reflected in an increasing demand for organic food products and consequently an increasing area of land used for organic farming (fig. 24).

The Dutch government regards organic agriculture as a good example of sustainable production and it is actively stimulating the growth of a professional organic agriculture sector (Wageningen UR, 2008). The Ministry of Economic Affairs assigned the Skal foundation as the certification and inspection body for organic production. The European logo for organic products was introduced in July 2010. In 2012 48.4 thousand hectares of land were used for organic farming which

is still only 2.6% of the total land used within the agricultural sector (CBS et al., 2013e). As yet the principles of organic farming (SKAL eco label) include no targets or measures to support biodiversity conservation, in contrast to other labels like that of the Forest Stewardship Council (FSC[6]). Organic farming on average shows small positive effects on a number of individual flora and fauna species but the results are ambiguous. So, for example, more Lapwing nests could for instance be observed in organic farmland, but the frequent weeding subsequently destroyed a large proportion of them (Kragten & de Snoo, 2007).

The recent establishment of 'Veldleeuwerik', a coalition of farmers, biological seeds breeding companies and Integrated Pest Management (IPM) specialists, farm sector organisations, agri-businesses like Heineken Beer and provincial authorities aiming to promote sustainable agriculture, is considered a break through and an example of what can be accomplished in a short period of time in terms of increasing production and productivity when biological sub-sector players join forces. This can also create a new export market e.g. for biological seed breeding companies and IPM specialists.

Consumption

Changing the consumption pattern is the best solution to decrease the land-use needed for the average Dutch person's diet. Halving the consumption of meat and dairy products and less wastage of food in combination with more efficient food production (and improved animal welfare) would for instance result in > 30% less land-use compared to 2010 (PBL, 2013). The recent vision of the government in cooperation with the agrifood sector is the Agenda for Food Sustainability for the period 2013 - 2016 (Min EZ, 2013j). There are four distinct aims set out in the agenda:

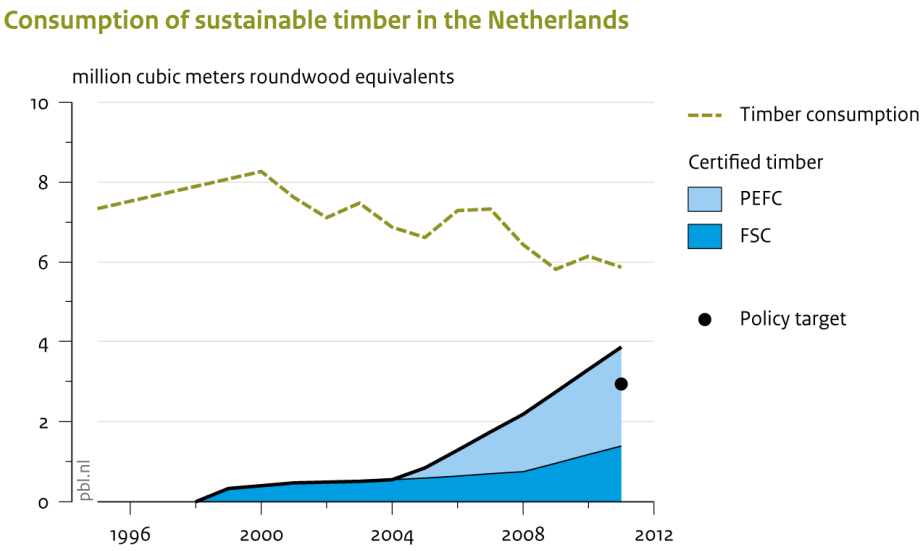
1) Increasing the level of sustainability in the large Dutch commodities and product chains in a broad sense and with special attention to.
2) The sustainability of the meat chain.
3) Reducing food waste and optimization of waste flows.
4) Improving transparency and communication.

2.4.2 Forestry

Production

On June 20th 2013 the Green Deal 'Promoting Sustainable Forest Management' ("Bevorderen Duurzaam Bosbeheer") was signed. As many as 27 public and private parties have collaborated in order to increase the proportion of wood from sustainably managed forests sold within the Dutch market.

[6] FSC principle 6: "Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest."



Source: Probos, 2013; FSC, 2013; PEFC, 2013

Figure25. Forest area (ha) in the Netherlands with a FSC-label (PBL, 2013b).

The Ministry of Infrastructure and Environment (Min. I&M) regards timber products as being sustainably produced if they carry a certification label approved by the Timber Procurement Assessment Committee (TPAC). To date the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification schemes (PEFC), Malaysian Timber Certification Scheme (MTCS) and Timber Legality & Traceability Verification (TLTV) are the only TPAC approved certification systems in the Netherlands. The forest area with a FSC label has been steadily increasing in the Netherlands from 35% in 2004 to 48% in 2011 (fig. 25). In 2011, 171.176 hectares of Dutch forests were being managed according to the FSC-standard[7], including all forests managed by Staatsbosbeheer.

Consumption

The self-sufficiency of Dutch forestry is rather low with only 8.0% of timber products coming from Dutch forests (Probos, 2012); meaning that the remaining 92% needs to be imported. The share of imported timber from sustainably managed forests is increasing. The government aimed for a 50% share of sustainably produced timber products (native and imported) within the Dutch market from 2011 onwards. This target was achieved; in 2011 65.7% of timber products available on the Dutch market was certified (23.7% FSC, 42% PEFC; Oldenburger et al., 2013). Most of it however originates from non-tropical forests. The tropical forests are generally regarded as biodiversity hotspots that can benefit from proper certification, while the amount of certified timber products from them is relatively low. However, the amount of certified timber products from tropical forests increased form 15 % in 2008 up to 39% in 2011 (Oldenburger et al., 2013). Tropical non-certified timber products often originate from illegally logged forests.

[7] Source FSC Netherlands

The EU represents a critical export market for many countries where illegal logging is common. In order to stop the circulation of illegally logged wood in the European Union the EU Timber Regulation (EUTR) came into effect. In March 2013 the EU Timber Regulation (EUTR) came into effect, which prohibits placing illegally harvested timber (products) on the EU market. Both timber and timber products produced in the EU and those imported from outside are covered by this legislation. The Food and Consumer product safety authority coordinates the application of the EUTR in the Netherlands. The Netherlands still needs to ensure at national and EU level that imported FSC and PEFC certified timber can enter a 'green lane' under the EUTR to prevent that timber harvesting and trading companies have to go through elaborate protocols twice. The round tables for soy and palm oil, initiated by the Dutch Trade Initiative, have contributed to a decreasing rate of deforestation in tropical countries, but a lot still needs to be done in order to prevent massive conversion of tropical forests and peat land.

Furthermore the Netherlands support the EU FLEGT action plan. A study will be conducted on the effect of pricing of the EU wood regulation on certified and non-certified sustainable wood. The government also explores the option for a sustainable wood chain with important suppliers of wood outside the EU (Malaysia, Indonesia, Brazil, Russia). The European Sustainable Tropical Timber Coalition has been initiated as a prelude to a global Round Table that will be implemented by 2016 at the latest (Min EZ & Min. I&M, 2013).

In the last four years the Netherlands also played an important role in debates around the negative environmental and social effects, particularly in (sub-) tropical countries, of the EU climate mitigation policies to blend fossil fuels and biofuels. One effect is further land use change resulting in more damage to forest ecosystems and more loss of biodiversity. The allocation of large stretches of land to biofuel investors also had negative social effects and in several countries land allocated to investors for the production of (for example) Jatropha was located at least partially in national parks. Dutch and local NGO's and knowledge institutes were also supported by the Dutch government to conduct research in the field of biofuels, to pilot new biofuel production options and related technology such as cooking devices based on biofuels, and to raise awareness around positive and negative effects of biofuels.

2.4.3 Fisheries

Coastal and inland bivalve, lobster, shrimp and fresh water species fisheries are managed nationally, whilst marine fisheries fall under the EU Common Fisheries Policy (CFP).

Production

The CFP in 2002 was based on the precautionary principle and the ecosystem approach. It was developed with the aim of preventing overfishing and to ensure healthy fish stocks with sufficient offspring. Central to this fishery management scheme are the so-called precautionary reference points and biological limits and Maximum Sustainable Yield (MSY). The catches by the major marine fisheries are regulated with multi annual plans, detailing what objectives should be achieved and providing harvest control rules. Most of the commercial stocks in the North Sea have recovered or are recovering after a period of overfishing in the 1980s and 90s, due to restrictions in catching opportunities (Total Allowable Catches and effort), reduction in fleet capacity, technical measures and innovation. Not only have spawning stocks increased, fishing pressure has decreased dramatically. However, there are some unregulated species such as Seabass that give cause for concern and which call for urgent measures. Vulnerable long lived shark and ray species, a by-catch

of sea bottom fishery, have declined and their stocks have been diminished. They were a by-catch of sea bottom fishery.

The next CFP will come into force in 2014 and it builds on the measures already taken under the former CFP. New elements have been introduced such as a more regionalized approach to management and an obligation to land all catches of regulated fish species. Furthermore, the objective is to achieve the Maximum Sustainable Yield (MSY) by 2015 where possible, but not later than 2020 for all other stocks. This is in accordance with, and even more ambitious than the commitment from the UN World Summit on Sustainable Development (Johannesburg 2002). Forbidding of discards and the landing requirement will be one of the pillars of the new sustainable fisheries policy in the Netherlands. The landing obligation should stimulate fishermen to fish more selectively and avoid unwanted by-catches as much as possible. In addition, the Dutch Government stimulates innovations which are aimed at making the fishing industry more sustainable. Development of fishing with pulse beams for instance, compared to chain beams is one of those innovations.

The Marine Strategy Framework Directive obliges EU member states to adopt a marine strategy aimed at the protection, conservation and restoration of the marine environment, thereby guaranteeing its sustainable use. The target of the framework is to reach good environmental status by 2020.

Consumption

Supermarkets have an important contribution to make in relation to increasing the sustainability of fisheries. to The aim was for them to only sell fish having a MSC label by 2011 (van Oostrum, 2010). This target has not been met, but the consumer spending on MSC fish increased by 17,3 % between 2010 and 2011 (Fig. 26 ; Min. EL&I 2012).

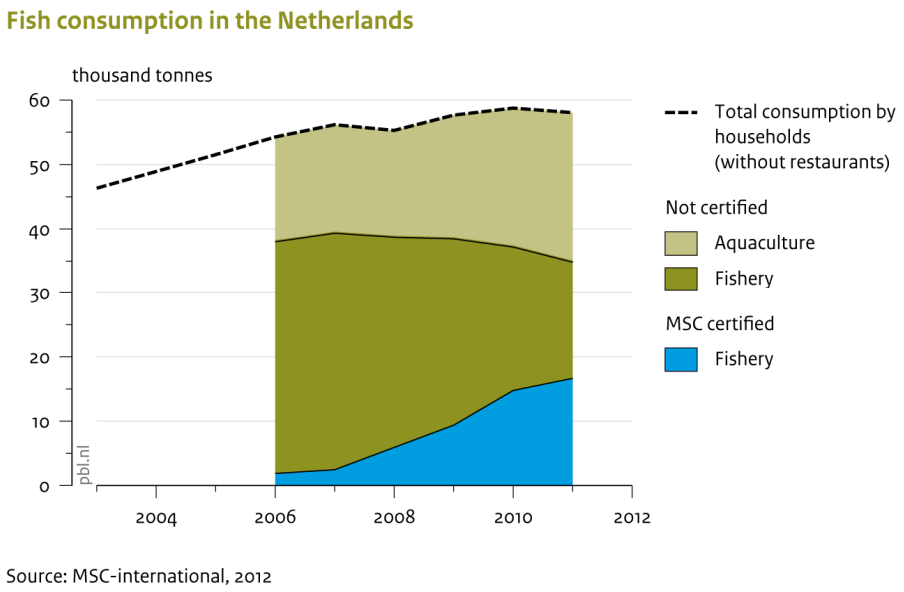


Figure 26. Fish consumption in the Netherlands (PBL, 2013b).

2.4.4 Aquaculture

The Blue Shell Mussel (*Mytilus edulis*) culture is, with 56.6 million kilograms of total landings in 2010/2011, the main representative of the aquaculture sector. Mussel seeds are fished in the

Wadden Sea in the North and are re-laid in bottom cultivation parcels in the Oosterschelde, in the Southwest province of Zeeland. The Wadden Sea and Oosterschelde are protected Natura 2000-sites and the mussel seed dredging in the Wadden Sea was considered unsustainable and therefore unacceptable. By signing a covenant between the Nature NGO's, the mussel fishery sector and the responsible Ministry, all parties agreed upon a transition phase for the sector. Since 2008 the fishermen have only been allowed small scale mussel seed fishing, under the condition that innovation of the sector will lead to a sustainable harvesting method by 2020 (e.g. suspended mussel seed collection).

On land the aquaculture sector is mainly represented by Eel (*Anguilla anguilla*), and to a lesser extent by Catfish and Trout. Sea fish are only a minor part of the aquaculture sector in the Netherlands. In May 2011 the Sustainable Eel Standard was introduced which has led to much higher survival rates of Elvers (young Eel) and which minimised the by-catch. Besides that the Eel sector in cooperation with DUPAN[8] undertakes activities that contribute to a sustainable recovery of the Eel stocks in the Dutch and European inland waterways. DUPAN is also working on sustainable solutions for the catch and farming of Eel, for environmental and animal-friendly processing, and is stimulating scientific research for Eels. Reproduction of Eel in captivity is still hardly possible. The Netherlands therefore also take part in the "Coalition of the Willing for a High Seas Marine Protected Area" which aims to give the Caribbean Sargasso Sea (the nursery ground of the European Eel) the status of Marine Protected Area (Min. EZ &Min. I&M, 2013).

Besides these activities the Aquaculture Stewardship Council (ASC) was founded in 2010 by WWF and IDH (Dutch Sustainable Trade Initiative), aiming to manage the global standards for responsible aquaculture. These were developed by the Aquaculture Dialogues, a program of roundtables initiated and coordinated by WWF. The ASC aims to be the world's leading certification and labelling programme for responsibly farmed seafood. It is a global organisation working with aquaculture producers, seafood processors, retail and foodservice companies, scientists, conservation groups and the public to promote the best environmental and social choice in seafood. Only 4.6% of world aquaculture production is currently certified, however scientist think it has a limited contribution to sustainable aquaculture (Bush et al., 2013).

[8] DUPAN is the Dutch Association of Eel traders, fish farmers and the organisation of professional fishermen

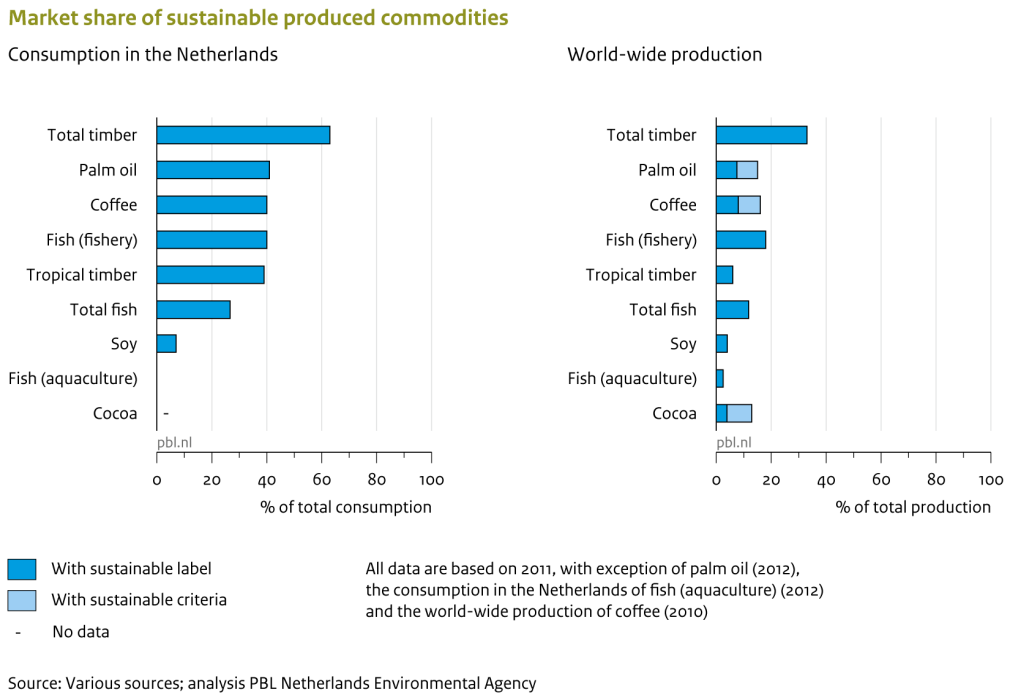


Figure 27. Import, export and consumption of wood and fish products and raw materials in the Netherlands (PB,L 2013b).

2.4.5 Ecological footprint and sustainable trade chains

The Netherlands is a trading country. Import and export of raw materials and products are much larger than the internal consumption, as illustrated by wood and fish (fig. 27). Through sustainability of trade chains – including the production of raw materials – an important contribution is given to the sustainable use of biodiversity and the reduction of the Dutch Ecological Footprint. This footprint is about three times the size of the Netherlands (Van Oorschot et al. 2012). The policy of the Dutch government is committed to reduce the ecological effects and to stimulate a more efficient production. Although it will be difficult for a strongly urbanised country like the Netherlands to bring down its footprint, serious efforts are underway to limit it as much as possible. This happens through the Sustainable Trade Initiative (IDH) together with the International Finance Corporation (IFC), but also through direct agreements between businesses and social organisations. Impacts on local ecosystems will be integrated within such agreements. The use of certification, such as those for fair trade coffee and FSC timber products, and the effectiveness of ecosystem use receives specific attention, which is also one the priorities of the Natural Capital Agenda (Min. EZ & Min. I&M, 2013).

The Dutch Max Havelaar Foundation, that started Fairtrade labelling 25 years ago on a container of coffee, is now working with Dutch coffee roasters to limit their CO2 emissions. This is done via greater energy efficiency and shifts to renewable energy sources. In addition, the companies are off setting their remaining emissions within their coffee value chain, enabling an Ethiopian coffee farmers cooperative to provide loans to households that want to buy a fuel wood saving stove. This can lead to more shadow trees in small scale coffee plantations, which can have a positive effect on biodiversity. The development of a climate neutral fair coffee value chain is supported by the Dutch Ministry of Foreign Affairs, ICCO ('Interkerkelijke Organisatie voor

Ontwikkelingssamenwerking') Fair Climate and by the Horn of Africa Regional Environment Centre in Addis Ababa, Ethiopia.

Chances for entrepreneurs and individuals
The Platform Biodiversiteit, Ecosystemen en Economie (BEE) drafted an implementation agenda aiming at the stimulation of innovative projects and to develop a knowledge and innovation agenda. The government provides resources for this, among others for a subsidy scheme. The goal of the scheme is to stimulate businesses to incorporate No Net Loss in their strategy and their management. This means concrete management adjustments which aim at conservation, good management and recovery of ecosystems. The government supports the initiatives of nature managers, entrepreneurs and individuals through investment in profitable function combinations with nature management by the facilitation of innovation with knowledge development and knowledge distribution and the acceleration of permit procedures. The government makes Green Deals with entrepreneurs for this purpose.

Caribbean Netherlands
The mainstreaming of nature conservation and sustainable use in society is one of the key targets for the new NPP-2017 for the Caribbean Netherlands.

2.5 The extent to which the NBSAP has been implemented

This section describes the extent to which the national biodiversity strategy and action plan has been implemented by describing the main activities that have been carried out and the remaining challenges for implementation.

Netherlands
From 1990 onwards, an important strategy of the Dutch Government (Min. LNV, 1990; Min LNV, 2000; Min EL&I, 2013) was to protect and restore biodiversity by realizing a National Ecological Network (NEN). Many hectares of agricultural land were bought for nature development purposes (fig. 28) and handed over to nature management organizations. Although the NEN is not ready yet, it has proven a very successful instrument since its introduction in the nineties to halt the loss of biodiversity (see § 1.2).

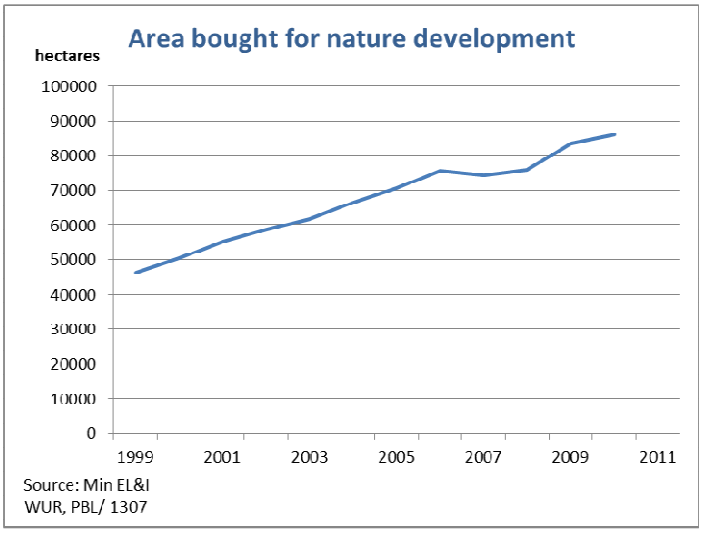


Figure 28. The purchase of land and conversion to nature which is needed to complete the National Ecological Network (CBS et al., 2013r).

Since 2007 the responsibility for the implementation of nature policy has been passed to the regional (provincial) authorities. The new nature act is to be simplified and integrated with general environmental legislation. The opportunities offered by European legislation will be fully exploited. Support of private landowners will be sought by giving them greater direct responsibility, and by increasing investment in nature development. The strategy to buy agricultural land has changed over the years and thus private landowners and farmers have been given a greater role in nature management. In the Nature Pact (Min. EL&I, 2013), the targets are made more specific. For example, 80.000 hectares of new nature should be developed in order to complete the NEN by 2027. It addresses the responsibilities of the National government and the Regional governments are addressed and it provides the framework for making financial arrangements.

In order to increase the possibilities for fish migration, water managers in the Netherlands construct facilities to allow fish to pass barriers such as dams in rivers and canals. Between 2000 and 2008 27 fish migration facilities were constructed each year; between 2008 and 2011 the number increased to 50 facilities a year. It is planned to construct up to 80 facilities a year from 2012 -2015. By 2012 more than 20% of the problems with barriers in rivers and canals had been solved (Wanningen et al., 2012).

Remaining challenges for implementation

The advisory report of the Council for the Environment and Infrastructure (Rli) was presented in May 2013 (Rli, 2013). The Rli is the primary strategic advisory board for the Dutch government and parliament in matters relating to the physical environment and infrastructure. The Rli concluded that the implementation of nature policy is not ambitious enough and insufficiently equipped to achieve the nature targets set. Nature policy is too technocratic and complicated and therefore loses social support. The Rli places the emphasis on effectiveness and community involvement.

The Dutch Government generally acknowledged the conclusions from the RLi and, anticipating the forthcoming 2014 Nature Vision, it introduced five tracks (Min. EZ, 2013d) along which to strengthen nature as well as the 'natural power' in society.

1. Realisation of a robust nature network: In this track the ambition is to realize a robust and financially affordable nature network in synergy with sectors like agriculture, water, recreation, well-being and health. Major steps are planned leading up to 2027. This means acquisition of additional nature hectares, ecosystem restoration and improvement of hydrological conditions and decline of environmental pressures; for instance with the implementation in 2014 of the Programmatic Approach to Nitrogen (Min. EZ, 2013f). In the longer term robustness will be secured by the development of large nature areas which also contribute to societal issues such as climate change and protection from flooding. An elaboration of this strategy is the policy survey 'Nature ambitions for the Great Waters' (Min. EZ, 2013g) which describes the policy options leading up to 2050.
2. Species conservation through improvement of living conditions: In this track the main ambition is to allow and give room to natural processes as this will ensure the long term preservation and development of landscapes and ecosystems. Target species will eventually return once their needs for aspects like space, water and environmental conditions have been met. The recent return of breeding White-tailed eagles indicates that this also works in a densely populated country like the Netherlands. The policy document 'Nature ambitions for the big waters' (Min. EZ, 2013g) can again be seen as an elaboration of this strategy.
3. Agricultural nature conservation: regions become responsible for a more natural agriculture: In this track the need for a drastic revision of agricultural nature management will be delivered through the introduction of collectives of farmers and other stakeholders in the area. The combination of ecosystem services such as pest control, climate adaptation, water purification or an aesthetically improved landscape for recreation and tourism will be supported.
4. Mainstreaming nature for the benefit of society and the economy: In this track the continuity of nature policy will be achieved through a more emphatic public responsibility for nature, new social arrangements and a better connection between costs and benefits of nature. Nature and the economy need each other; a fact which provides the basis for policy documents like the Natural Capital Agenda (Min. EZ & Min. I&M, 2013) and Green growth (Min. EZ, 2013c). Many initiatives have already been implemented, like the so-called Green tables in which multi-stakeholder dialogues result in new investments, intentions and action plans for nature conservation.
5. Utilising the self-organising ability of society: In this track government aims to make better use and support initiatives in society. Examples are the policy programs Doing Green (Groen Doen, Min. EL&I, 2012b), Nature and Environmental Education, Duurzaam Door (Min. EZ, 2013e), Sustainable Trading Initiative ("IDH, Initiatief Duurzame Handel) and Green Deals with businesses.

Caribbean Netherlands

The National Nature Policy Plan 2001-2005 (NPP-2005) and its level of implementation was assessed as a first step towards a new Nature Policy Plan for the Caribbean Netherlands (NPP-2017). The purpose of this evaluation was to determine which action points were still current after 10 years and to identify new developments to be aware of when setting goals and strategies for the new NPP-2017. The NPP-2005 was the first formal nature policy plan of the Netherlands Antilles. It listed a total of 47 policy goals and 61 action points for the period 2001-2005. Of these 31 were achieved to a high degree of completion between 2001 and 2010, notwithstanding the serious and chronic lack of both funds and manpower. While much has been achieved in terms of policy development and legal frameworks in those 10 years, rapid global change has meant that nature management during

the planning period 2013-2017 would have to confront an increasingly rapid succession of major ecological problems such as coral bleaching, hurricane impacts, and invasive species.

The evaluation showed that policy development during the past 10 years had suffered significantly from challenges in terms of both capacity and funding, as well as in decision-making. For less controversial action points such as “reporting”, drawing up “plans”, doing “research” and “education”, it was the lack of capacity and funding that were indicated in particular as the main problems. In contrast, the more controversial topics regarding “rules and regulations”, “cooperation”, and “financial instruments” largely failed to be achieved due to problems in the decision making process.

Several main topics that needed attention were identified in the new NPP-2017. This plan needs to meet standard and basic policy, information and management needs and also has to accommodate the latest conceptual developments and the pressing realities of global change and alien species invasions. Notable is that a large number of new and serious threats have come to the forefront since the NPP-2005 was set out 10 years before.

Because the diverse, colourful and unique natural ecosystems of the Caribbean Netherlands also represent the single most important local economic resource on which to build long-term prosperity of the inhabitants of these islands, the NPP-2017 needs to be recognized as much more than simply a way to protect nature and to avert ecological crisis. It is in fact a key policy tool by which to actively safeguard and create economic well-being and opportunity for these islands (Debrot et al., 2011a).

III. Progress towards the 2015 and 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 targets of the MDGs

3.1 Progress made towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and it's Aichi Biodiversity Targets?

This chapter analyses the progress made towards each of the 2020 targets of the Strategic Plan for Biodiversity 2011-2020 by using the information from part I, status and trends in biodiversity, and main threats, and part II, the national biodiversity strategy and action plan and the mainstreaming of biodiversity. This chapter refers to the quantitative indicators presented in part I and II and the national policies described in part II. An overview table of goals, targets, action plans, indicators, the progress made and their reference in the text can be found in the appendix. The Conference of the Parties (COP) hasn't formulated indicators yet for the Aichi Biodiversity targets. This will probably happen at COP 12 in October 2014 or at a later stage. In order to give as much consideration as possible to the future indicators, we selected those possible indicators proposed by the Quick guides to the Aichi Biodiversity Targets (CBD 2012) of which sufficient data was available and presented them in part I and II. Although there are officially no indicators yet linked specifically to the Aichi targets, the indicators selected show that Dutch biodiversity policy is active in relation to all of the targets.

3.1.1 Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Four Aichi targets have been formulated to achieve strategic goal A:

1. Awareness increased.
2. Biodiversity values integrated.
3. Incentives reformed.
4. Sustainable consumption and production.

Aichi target 1. Awareness increased

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Netherlands

Many Communication, Education and Public Awareness (CEPA) activities in relation to the awareness of biodiversity values, its conservation and sustainable use have been initiated and are on-going (www.biodiversiteit.nl). The Government increasingly delegates the responsibility for awareness raising to NGOs, private parties and businesses. Businesses take more and more responsibility for this matter, for instance through the initiative 'Leaders for Nature'. This is the IUCN NL business network of twenty multinationals and major Dutch enterprises working together on greening the global economy. The network focuses on biodiversity and ecosystems as part of wider sustainability and business policies. In addition, the Platform on Business, Ecosystems and Economy founded by IUCN and the Confederation of Netherlands Industry and Employers (VNO-NCW) also implements an awareness-raising program to stimulate companies to take action. The list of action perspectives is expanding and more and more economic sectors become involved (including e.g. the fashion and building industry).

Most people in the Netherlands are aware of biodiversity in their surrounding area and carry out low threshold activities to maintain it (like feeding the birds during winter). Dutch NGO's are very successful in organising activities to increase public awareness and to involve citizens in their activities. The number of volunteers in nature management, surveys and monitoring, and education is increasing. However, the number of passive members contributing financially is decreasing, probably due to the economic crisis. In addition, the information provided under §1.1.1 illustrates the increasing awareness of biodiversity conservation in the Netherlands. On the other hand, a growing number of people think that nature should not be among the four top priorities for the Dutch government. The economic crisis and the governmental financial cuts are at the top of public priorities.

The Netherlands has always had active programmes at all levels of government to support awareness raising and communication on biodiversity and nature. Recently, the present government has taken several new steps to increase the awareness and involvement of the Dutch government (see §2.3.1) and is planning to involve citizens, business and industry (§2.1; Min EZ, 2013d; Min. EZ, 2013e). It is difficult to assess whether Aichi-target 1 has been achieved as SMART goals were not formulated. Based on the current status and positive trend of biodiversity awareness in the Netherlands (see §1.1.1) and the on-going initiatives in relation to this matter, it can at least be concluded that the awareness is relatively high and still increasing.

Caribbean Netherlands

On each of the islands of the Caribbean Netherlands the Protected Areas management organizations have dedicated CEPA staff and active programs to educate in particular youth about nature of the island. Other non-governmental not-for-profit organisations specifically address sea turtles and the endemic Bonairean parrot. On Saba and on Bonaire in particular there is a general awareness among the population of the importance of natural resources and the need to use them sustainably. There is still a need however, to show what sustainability entails and to promote sustainable projects. The Dutch Ministry of Economic Affairs is working with WNF on a Sustainable Bonaire project, organizing sustainability fairs to showcase various sustainability efforts and initiatives, both from the private and the public sector. For these on-going efforts reasonable progress has been made on this target.

Aruba, Curacao and Saint Maarten

Aruba: The NGOs of the island are very active and provide regular information on a variety of topics. Active NGOs include Arikok National Park Foundation, Aruba Marine Park Foundation, Aruba Birdlife Conservation, Aruba Marine Mammal Foundation, and TurtugAruba. Curason berde' public awareness program 2009-2011. There was also a Boa Taskforce (now largely inactive) which involves the broad public and a community-wide NosAruba2025 process which also is inactive (DEZHI Aruba 2010) but which involved many people across all sectors in developing a joint vision for the island. Hotels and the public support the Blue Flag and lionfish control projects of the Aruba Marine Park Foundation. It can be concluded that reasonable progress on environmental awareness and public involvement has been made.

Curacao: The NGOs of the island are very active and provide regular information on a variety of topics. Active NGOs include Amigoe di Tera, Defensa Ambiental, Carmabi, and Uniek Curacao. These organizations actively engage the public. Carmabi runs a government funded school education program reaching 1000s of school children annually. Hotels and the public support the lionfish control project and biodiversity information in the native language of Papiamento regularly appears in the newspapers and on national TV. Reasonable progress has been achieved on environmental

awareness and public involvement. Nevertheless, the legal land-use plan (Eilandelijke Ontwikkelings Plan "EOP"), which is the only legal basis for designation of conservation areas, remains poorly understood and appreciated, and hence very vulnerable to the unrelenting land-owner lobby.
Saint Maarten: The NGOs of the island are very active and provide regular information on a variety of topics. Active NGOs include the nature foundation, the Historical Foundation and EPIC. These organizations actively engage the public. Hotels and divers support the lionfish control project and the marine park. It can be concluded that reasonable progress on environmental awareness and public involvement has been made.

Aichi target 2. Biodiversity values integrated
By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Netherlands
In the National Policy Strategy for Infrastructure and Spatial Planning (SVIR), the Dutch government identifies conservation and protection of species as an important national interest. The government continues to develop the National Ecological Network (NEN) as the most important remedy to stop biodiversity loss. This Strategy gives the NEN a spatial regime called 'no, unless', protecting nature within the network against harmful spatial development plans. The NEN should be complete in 2027 (see §2.5 Nature Pact). The national government is responsible for international obligations and the regional governments are responsible for the implementation of the NEN. Regional governments have incorporated the NEN in their spatial plans since ca. 1995, have organised financial compensation for nature management since 2007 and have developed a monitoring system to evaluate the efforts made. Local governments have also incorporated the NEN in their spatial plans. Local governments authorize spatial development. They have to weigh the economic and social values against ecological values within the development plans. They use spatial information on protected species to demand mitigation and compensation measures when spatial development and construction is allowed. A growing number of (currently ca. 20%; source GAN) the local governments is using the National Database Flora and Fauna (see §3.1.19) when they consider these developments. Accurate and up to date data needs constant attention.

In addition biodiversity has been integrated in the relevant sectors concerned (see §2.4). Currently much effort is placed on the valuation of ecosystem services to show their socio-economic value to government, business and civil society and by that to support the decision-making process for policy-making and large investment projects (see §2.3.2).

National accounting and reporting systems
In the environmental assessments of spatial plans the Commission for Environmental Assessment (Cie MER) inspects the quality of these assessments. In 2012 they inspected 121 assessments and they found that in many spatial plans of rural areas the description of the effects of agriculture on nature could be improved. The commission organised several meetings to advise planners on the subject (annual report, 2012). Between 2007 and 2012 the Dutch Parliament was informed once a year about the progress of the NEN ('Groot Project Ecologische Hoofdstructuur'). Once every two years, the Environmental Assessment Agency (PBL) reports on the state of the environment and evaluates policy progress including biodiversity and nature policy (Balans van de Leefomgeving).

With the completed, on-going and foreseen initiatives the progress made on Aichi-target 2 at the policy level can be considered to be relatively high.

Aruba, Curacao and Saint Maarten

Aruba: So far there are no studies that quantify or give insight into the diverse ecosystem and economic significance of nature to Aruban society and economy.
Curacao: A few small studies provide partial assessments of the economic value of biodiversity and parks but no integrated assessment has been made.
Saint Maarten: Some preliminary assessments of the economic value of biodiversity are available (Bervoets, 2010) but no integrative or extensive studies are available. There has been little effort to integrate tourism and biodiversity, so it is a priority that this receives attention in the various policy plans that the ministries are working on at present.

Aichi target 3. Incentives reformed

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Netherlands

The Netherlands have a relatively green tax system. In 2011 green taxes contributed almost 14% to the total tax revenue of the Netherlands. The revenues from green taxes have more than doubled since the late eighties (CBS et al, 2013a).
In the policy note 'Green Growth: for a strong, sustainable economy' (Min. EZ, 2013c) the government aims for smart use of market incentives. Prices of goods and services should increasingly reflect the external impacts of production and consumption on nature and the environment. A smart combination of pricing (for example in taxation or the Emission Trading Scheme, ETS), innovation policy and selective public procurement will promote more sustainable production and will create markets for sustainable products and services.
The Netherlands give a high priority to greening of the EU common policies on agriculture and fisheries. This should eliminate, phase out or reform incentives that are harmful to biodiversity, while positive incentives are developed and applied. Time will show if this strategy has been effective. However, besides positive incentives like these there are also environmentally harmful subsidies or tax exemptions that have an unintended negative effect on nature and the environment. Abolishing these environmentally harmful subsidies could achieve substantial savings while aiding the development of a cleaner environment. In the Netherlands in 2010, large environmentally harmful subsidies were found particularly in the energy, transport and agricultural sectors, representing between 5 and 10 billion euros (PBL, 2011a). The Dutch Government could abolish certain environmentally harmful subsidies at a national level, but for competition reasons this would require agreements at a European or global scale. Examples are subsidies and tax breaks related to delivery vans, red diesel (used in forestry, agriculture, mobile machinery, railways, inland navigation and heating) and the low VAT tariffs on meat, dairy and fish (PBL 2011a). The tax break on red diesel was abolished on 1 January 2013 with the exception of ships other than recreational vessels. In addition, negative impacts from the policy on renewable energy will be minimised through the application of sustainability criteria.

Besides these existing harmful incentives there are also a few new incentives harmful for biodiversity. The European Commission and a majority of European Agriculture Ministers for instance are now looking to gradually dismantle the European milk quota system by 2015. This will further increase agricultural production in the Netherlands and because there is a negative relationship between an increase of agricultural production and biodiversity (Kleijn, 2013) it is expected to have a negative impact on biodiversity if no compensation or mitigation measures are taken. The Dutch manure policy will be strengthened to mitigate the effects of an increase of agricultural production. Considering the above, the progress in relation to the Aichi-target 3 is limited due to positive and negative developments regarding rules and regulations.

Caribbean Netherlands

There has been no concrete reform of incentives to date. However, the Nature Policy Plan for the Caribbean Netherlands 2013-2017 (Min. EZ, 2013a) aims at mainstreaming of nature conservation and sustainable use in all sectors of society, such as the support for development of sustainable agriculture on the islands. This will require the reform of incentives harmful for biodiversity.

Aruba, Curacao and Saint Maarten

Aruba: No incentives are in place to stem or halt biodiversity loss.
Curacao: No arrangements or incentives in place to help stem biodiversity loss.
Saint. Maarten: No development to report.

Aichi Target 4. Sustainable consumption and production

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Netherlands

Aichi-target 4 is fundamental for achieving other Aichi-targets, while it's also the basis for the policy strategy on biodiversity. The information under §2.4 on the mainstreaming of biodiversity illustrates that a lot has been achieved in relation to consumption and production within relevant sectors like agriculture, forestry, fisheries and aquaculture. The Natural Capital Agenda is aimed at sustainable agriculture, fisheries and forestry by 2020 (§2.1).

In addition the food retail and foodservice companies invest heavily in sustainability. A multinational company like Unilever has a Sustainable Living Plan (USLP) and one of their targets is to purchase 100% of their agricultural commodities from sustainable sources by 2020. Furthermore the Dutch Food Retail Association (CBL), representing the food retailers and foodservice companies in The Netherlands, invest heavily in sustainability. In an action plan on fish the supermarkets agreed to sell only sustainable fresh and frozen fish by 2011. This means that all fish caught from 2011 had to comply with the standards of the MSC or equivalent. According to CBL about 85% of the freshly caught fish offered in the Dutch market is now MSC certified (or equivalent). Sufficient MSC certification is not available for all fish species. A number of fisheries are currently still working on obtaining the MSC certificate. Another aim is that by 2016 all farmed fish in the grocery stores meet the sustainability standard of the Aquaculture Stewardship Council (ASC) or equivalent. Farmed aquatic species like salmon, pangasius and tilapia and shrimp are popular with consumers and are widely bought in the supermarket.

Besides fish and other seafood, CBL has also formulated sustainability criteria for the generic pork and poultry meat assortment for the Dutch market. There is still a long way to go however before all meat offered in the Dutch market complies with sustainability standards.

Governments, business and stakeholders at all levels are taking steps to achieve sustainable production and consumption. The Dutch government cooperates with the private sector through initiatives such as the Platform Biodiversity, Ecosystems and Economics (Platform BEE; a partnership involving government, companies and NGO's), and the Green Deals programme.
Major steps have also been taken to keep the impacts of use of natural resources within safe ecological limits, though concern still exists about the reform of the agricultural sector and the ecological footprint of the Netherlands, especially abroad.
The Dutch Ministry of Foreign Affairs also supports the Fair Green Global Alliance (with Both ENDS , SOMO, Milieudefensie and others) contributing to poverty alleviation, advocating at various levels for more sustainable consumption and production and strengthening civil society organisations in (sub-)tropical developing countries.

The path to sustainability is long. Reasonable progress has been made on Aichi-target 4 but the agricultural and agro-processing sector is still a particular concern.

Caribbean Netherlands
Monitoring of fisheries has recently started on Bonaire, Saba and Saint Eustatius in order to enable sustainable management of the fisheries in particular of the Saba Bank.
Together with WNF a program has started on Bonaire in order to bring together the various initiatives to strengthen and stimulate them towards sustainability.

Caribbean Netherlands
Several studies have been carried out on aspects of some of the bigger issues in order to find out whether, for example, sustainable production of livestock fodder on Bonaire can be achieved through optimising the compost mixture for maximum production and a pilot agriculture project has been conducted. Due to the lack of (reasonably priced) fodder for the goats, the general practice is to let the goats roam free resulting in erosion and desertification of the land. The expectation is that when goat owners can feed their livestock for a reasonable price, they will be less inclined to let their goats roam free, thus decreasing the effects of overgrazing.

Aruba, Curacao and Saint Maarten
Aruba: Between 35 and 40 % of cardboard, aluminium and ferro metals are recycled; 18 % of electricity production is by wind and there has been an increase in solar energy production. Annual Green conference in September.
Curacao: No development in this area. The little agriculture that is conducted uses unsustainable technology and pesticides.
Saint Maarten: Nothing to report, no development on this front.

3.1.2 Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.

Six Aichi targets have been formulated to achieve strategic goal B:

5. Habitat loss halved or reduced.
6. Sustainable management of marine living resources.
7. Sustainable agriculture, fisheries / aquaculture and forestry.
8. Pollution reduced.

9. Invasive alien species prevented and controlled.
10. Pressures on vulnerable ecosystems reduced.

Aichi target 5. Habitat loss halved or reduced

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Netherlands

The on-going development of the National Ecological Network (NEN), including 164 Natura 2000-sites, has led to defragmentation of habitat and has reversed habitat loss and increased the area of new nature development (see §1.3.2). Since 1990 the main strategy of the Dutch government has been to realize the NEN(§2.5). Construction of fauna passages and ecoducts has led to significant defragmentation of habitat. The same is true for the aquatic life. Migratory fish species are increasingly able to migrate through seas, rivers, streams and ditches due to the construction of fish passages at barriers like dams and pumping stations. In the coming years the construction of many more fish passages is foreseen (§2.5; CBS et al., 2013b).

Habitat loss by degradation has been significantly reduced, mainly due to improvement of the environmental conditions (§1.3.3) and restoration measurements taken by nature management organisations. However, ecosystems like heath and the habitats of meadow birds, such as *Limosa limosa*, on farmland did not improve and are continuing to degrade (fig. 7). Many areas still suffer from a combination of too much nitrogen deposition and desiccation.

Reasonable progress has been made on all aspects of Aichi-target 5. Progress is on-going but significant reduction of degraded areas depends on further improvements, mainly in the agricultural sector.

Caribbean Netherlands

Bonaire and Saint Eustatius each have zoning regulations identifying conservation areas and prohibiting any development in such areas. Both islands have also embarked on plans to reduce the serious degradation from overgrazing by roaming livestock. Saba has not yet implemented a zoning plan but has limited development to a maximum altitude, safeguarding most of the natural areas from degradation. It has also embarked on a program to reduce the number of roaming goats. Fragmentation of habitat is not an issue in the Caribbean Netherlands. Reasonable progress has been made on Aichi target 5.

Aruba, Curacao and Saint Maarten

Aruba: Physical Development Policy 2009 addresses among other urban development and nature conservation areas, but the policy has yet to be implemented. The legal designation of Arikok National Park as protected habitat by Ministerial decree in 2000 represents a major achievement towards habitat protection. However, since then no additional areas have received legal protection, including several internationally recognized Important Bird Areas (Delnevo, 2008). There is also no marine park, notwithstanding the existence of a government funded Aruba Marine Park Foundation since 2010.

Curacao: This goal can be considered reached for the terrestrial ecosystem thanks to the 1997 land-use and zoning law but not in the marine or coastal environment where development and user pressures continue to grow.

Saint Maarten: Habitat loss has continued at an alarming pace. Reducing or stopping it depends on the implementation of a new zoning law. Reasonable progress has been made because several rounds of public hearings already having taken place.

Aichi target 6. Sustainable management of marine living resources
By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Netherlands
For most of the important commercial fish, the stocks are currently within safe biological limits (see §1.3.7). However, not all effects of unsustainable fishery have been restored. Vulnerable long lived shark and ray species are still critically endangered or threatened. The Netherlands are currently preparing a recovery action plan, in the light of the EU Marine Strategy Framework Directive (§2.4.3). Some fishing techniques still have a considerable environmental footprint. For instance, the impact of beam trawls with tickler chains on vulnerable habitats such as reefs. (§1.3.7 and § 2.4.3). The European Union is responsible for policies for management of marine living resources: Common Fishery Policy (CFP). The new CFP will enter into force in 2014 (§2.4.3). It applies to fishing by EU vessels in international waters and in territorial waters of third countries, unless agreements with the third country say otherwise. Furthermore, the Natural Capital Agenda is also aiming to achieve sustainable fisheries by 2020 (par 2.1).

In addition to that the Netherlands Government stimulates (technical) innovations which aim at more sustainable fisheries, while management plans for marine Natura 2000 sites are currently being developed to conserve marine biodiversity (for measures for shell fish, such as cockles and mussels, see §3.1.10). A pilot action is foreseen in 2015 to bring back shell banks in one of the protected sites, in order to restore biodiversity and the nursery function for fish species (Min. EZ & Min. I&M, 2013). In 2016 there will be a complete ban on bottom trawling in the coastal Natura 2000 sites of the North Sea Coastal Zone and Vlakte van de Raan, while shrimp fishing operations will be limited (VIBEG agreement).

Reasonable progress has been made on Aichi-target 6. Further progress depends to a great extent on the implementation of the CFP from 2014 onwards.

Caribbean Netherlands
Since 2011 the biodiversity and fisheries resources of the waters surrounding the islands of the Caribbean Netherlands, from the outer borders of the marine protected areas surrounding the islands to the outer borders of the Exclusive Economic Zone, are being jointly managed through a Memorandum of Cooperation (MoC) between the islands and the Netherlands. Fisheries monitoring programs have been initiated on the Saba Bank, Saint Eustatius and Bonaire to develop effective ecosystem-based management. Reasonable progress has been made on this target.

Aruba, Curacao and Saint Maarten
Aruba: Aruba actively contributed to a joint EEZ management plan funded and endorsed by the Ministry of Economic Affairs (Meesters et al., 2010). Aruba also has some fisheries laws in place but

no recent advances have been made in terms of measures towards sustainable management of marine resources.
Curacao: Fisheries legislation is in place to reduce or forbid some of the most destructive gear and practices; however, no effective fishery monitoring or management is in place. The sport fishermen voluntarily release bill fish during tournaments to help conserve the species. Taking of turtles is forbidden by law. Enforcement of fisheries laws by the Coastguard is effective. Curacao actively contributed to a joint EEZ management plan funded and endorsed by the Ministry of Economic Affairs (Meesters et al., 2010).
Saint Maarten: Saint Maarten has recently instituted a marine park and has declared a shark fishing moratorium to protect this important resource for tourism. Enforcement of marine fisheries law and marine park protection by Coastguard and marine park wardens is good. Saint Maarten is an active partner towards a joint EEZ management plan as funded by the Ministry of Economic Affairs (Meesters et al., 2010).

Aichi target 7. Sustainable agriculture, aquaculture and forestry
By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Netherlands
The information provided under §2.4 illustrates that sustainability and biodiversity are more and more integrated within the agriculture, aquaculture and forestry sectors. For Aichi-target 7 the forestry (§2.4.2) and aquaculture (§2.4.4) sectors made considerable progress towards 2020.
The agriculture sector is however less well developed in terms of reaching sustainability, in spite of all positive and substantial efforts such as the Common Agricultural Policy and Agri-Environmental schemes (§2.4.1).

The Netherlands Environmental Assessment Agency has drawn up the balance of progress made in the livestock sector over the past ten years. Unquestionably, the sector is moving towards greater sustainability in production and consumption, but developments are slow. The emissions of nitrogen and phosphates into the environment have decreased but are still above the critical limits (PBL, 2010b). The population of birds on farmland is still decreasing and considerable efforts are being made to find a new system to improve biodiversity on farmland. Advances have been made in reducing animal suffering and the use of sustainable stables is increasing, though farmers still use too much antibiotics. The percentage of organic products produced and consumed increases, but is still only 2.6% of the agricultural area. The success of free-range egg farming demonstrates that consumers can coerce a market into moving towards sustainability.

Substantial progress could however be made by halving the consumption of meat and dairy products and less wastage of food in combination with more efficient production and improvement of animal welfare. This would result in an expected 30% less land-use compared to 2010 (PBL, 2013). The presently dominant position of agriculture in the Dutch landscape and the associated negative impacts on biodiversity make it clear that considerable efforts are still needed towards Aichi-target 7.

Caribbean Netherlands
Bonaire alone has plans to develop a fish farm for which an environmental impact assessment will be conducted. Forestry is no issue in the Caribbean Netherlands. The Ministry of EZ is supporting the islands in developing small scale sustainable agriculture in order to reduce dependence on expensive importation of food, as well as to improve livestock management in order to reduce the numbers of

free roaming livestock and reduce the serious impacts on nature of overgrazing. These ambitions are challenging but with current efforts it's expected that reasonable progress has been made on Aichi target 7.

Aruba, Curacao and Saint Maarten

Aruba: Some limited trials and projects are being done by the Dept. Agriculture, including support to small farmers.
Curacao: Not applicable.
Saint Maarten: Not applicable. No agriculture takes place on any significant level any more.

Aichi target 8. Pollution reduced

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem functions and biodiversity.

Netherlands

The environmental conditions in the Netherlands have substantially improved since the 1990's. The acidification problem for instance has more or less been solved, while the eutrophication of surface waters has substantially decreased (§1.3.3). Altogether this provides a reason for why the rate of biodiversity loss in the Netherlands has slowed down. However, critical limits have still not been achieved like the quality of surface waters which mostly do not meet the requirements for the EU Water Directive Framework. Efforts to meet these objectives are on-going. In addition deposition is still above critical load in many terrestrial areas.
Currently the impacts of pesticides on nature, especially on bees, receive special attention. The 'Agenda Natural Capital 2013' (Min. EZ & Min. I&M, 2013) drafts some concrete actions in relation to this matter. The Dutch government stimulates farmers to create arable field margins with wild flowers specially designed to facilitate functional agro-biodiversity, stimulates the use of non-chemical methods and farmers are required to use emission reducing techniques. Together with stakeholders the Dutch government will develop and implement an action plan regarding bee health. Another focal point concerns marine litter and a range of concrete actions will be taken, in cooperation with parties like the EU Environment Council, IMO and UNEP, to reduce this problem (Min EZ, 2013). The Dutch government and the provincial governments prepare the Programmatic Approach Nitrogen (PAS) to reduce this pollution, mainly caused by agriculture (§2.3.3). On one hand measures are taken to reduce nitrogen emissions, for instance by tightening the rules for building stables. On the other hand, nature restoration measures are taken to mitigate the effects on biodiversity such as additional vegetation management or improvement of the hydrology. Also, member states of the EU are obliged to renew their action programme under the Nitrates Directive (ND; 91/676/EEG) every four years . The Nitrates Directive aims to prevent or decrease water pollution caused by nitrates from agricultural sources. The renewed (5th) Dutch action programme will become effective in the beginning of 2014. This programme aims to establish, on average, equilibrium fertilisation as regards phosphate, and aims to achieve , on average, the target value of 50 mg/l in groundwater in all areas of the country. Thus, the programme will also contribute to the achievement of Water Framework Directive (WFD) goals. However, to actually achieve these goals, an intensified effort is necessary. The WFD River Basin Management Plans which will be established in 2015 are the framework for this effort. In this respect, it is relevant that under Rural Development Plan 3 (RDP3), a significant sum of money will be set aside to help achieve ND and WFD goals.

Caribbean Netherlands

A sewerage system and a sewage treatment plant have been put in place on Bonaire that will significantly reduce nutrients from wastewater from reaching the coral reef. A newly passed environmental law will regulate small scale pollution on the islands as well as the larger scale operations of the oil transhipment industry. With these new regulations Aichi reasonable progress has been made on target 8.

Aruba, Curacao and Saint Maarten

Aruba: Hotel wastewater has been treated at the Bubali lake for last 40 years. Three sewage treatment plants are currently in place. Residential waste-water has also been treated since 2007. Between 35 and 40 % of cardboard, aluminium and ferro metals are recycled.
Curacao: There are and have been several initiatives to recycle and reduce pollution. An ambitious green energy program is being implemented that will gradually reduce dependence on fossil fuels. However, this is principally based on two windmill parks situated in areas sensitive to both nesting seabirds and roosting caves for endangered bats.
Saint Maarten: No changes or advances to report.

Aichi target 9. Invasive alien species prevented and controlled

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated and measures are in place to manage pathways to prevent their introduction and establishment.

Netherlands

The number of alien species in the Netherlands is still increasing (§1.3.4). Recognizing the increasingly serious problem of invasive alien species in Europe, in September 2013 the European Commission published a dedicated legislative instrument (regulation) on Invasive Alien Species (IAS). The Netherlands support this initiative as it is a typical cross-border problem.

In October 2007, the Dutch Policy Memorandum Invasive Alien Species was published and sent to Parliament. The policy, with an emphasis on prevention, is in line with agreements made in the framework of the Convention of Biological Diversity (three-stage hierarchical approach). The Netherlands Food and Consumer Product Safety Authority (NVWA) is the central coordinating authority when it comes to the implementation of many elements of the IAS policy in the Netherlands. An annual budget is available to carry out the tasks. The most important task of the NVWA is to advise the competent ministry on the risks of introduction, establishment and spreading of IAS and feasible management options/ tools to be taken against IAS. NVWA is also assigned the following tasks: detection and monitoring, risk assessment, alien hotline, creating public awareness and coordinating eradication campaigns.

The Dutch Flora and Fauna Act prohibits the release of animal and plant species in the wild as well as prohibiting the possession and trade of certain alien species. The law makes it possible to act if invasive alien species are introduced.

Control and eradication of invasive alien species is much more difficult in the water than on land, which emphasizes the need for prevention. In order to prevent the introduction of marine alien species via the ballast water of ships, in 2010 the Netherlands signed the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) set up by the International Maritime Organization (IMO). The essence of this agreement is that ships must have an

approved ballast water treatment plant which removes organisms. The convention will enter into force 12 months after ratification by 30 States, representing 35% of world merchant shipping tonnage. However, the convention was (still) not in force in January 2014.
In 2010, the Ministry of Agriculture, Nature and Food Safety (currently Economic Affairs), the Association of Regional Water Authorities and organizations representing producers, importers, retailers and garden centres agreed on a code of conduct on ornamental aquatic plants. The code requires that several invasive ornamental aquatic plant species are no longer sold (listed in Annex 1 of the code). Furthermore, the code requires the sale of other aquatic plant species to be accompanied by user recommendations regarding their appropriate use and disposal (Annex 2).

Many actions have been taken to eradicate or control potentially invasive alien species. The number of exotic species still increases though. Especially alien species in the water are a major management challenge. Once settled, it is difficult to eradicate alien species; they are therefore controlled to minimise their impact.

Caribbean Netherlands

An inventory of invasive species has been completed and a strategy to address the invasive species is currently being developed; this will provide the basis for control and eradication of invasive species on and around the islands. Currently an on-going control program of invasive Lionfish (*Pterois volitans*) run by the marine protected areas is proving to be effective in reducing and controlling the numbers of Lionfish, at least within depths that can be reached while scuba diving, which includes most of the coral reefs. Despite all present efforts, the threat of invasive alien species is too large to consider that Aichi target 9 can be achieved by 2020.

Aruba, Curacao and Saint Maarten

Aruba: Invasive species are a major problem on Aruba and a recent inventory has been carried out (Debrot and van Buurt, 2011; van Buurt and Debrot, 2011,2012; van der Burg et al., 2012). Aruba is also actively contributing to development of an Invasive Alien Species Strategy. The marine park conducts lionfish control and a special task force does its best to control the invasive Boa constrictor (snake) population.
Curacao: Invasive species are a major problem on Curacao but a recent inventory is now available (Debrot and van Buurt, 2011; van Buurt and Debrot, 2011, 2012; van der Burg et al., 2012). Curacao is presently actively contributing to development of an Invasive Alien Species Strategy. The dive operators are active against the Lionfish. Most importantly, the Carmabi foundation has had an active goat control program in the Christoffel Park and eradicated a rapidly expanding cat population on Klein Curacao to protect the nesting terns. Both initiatives are based on no funding and few people and hence very vulnerable to discontinuity.
Saint Maarten: Invasive species are a major problem on Saint Maarten but a recent inventory is available (Debrot and van Buurt, 2011; van Buurt and Debrot 2011, 2012; van der Burg et al., 2012). Saint Maarten is also actively contributing to the development of an Invasive Alien Species Strategy. Nature Foundation Saint Maarten also has a control program against Lionfish (Bervoets, 2010a). Invasive species are held responsible for extirpation and near extinction of endemic rare fauna.

Aichi target 10. Pressures on vulnerable ecosystems reduced

By 2015 the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems and functioning.

Netherlands

The word 'Netherlands' in Dutch literally means 'low country', which illustrates that the Netherlands, including its natural areas, are especially vulnerable to impacts of climate change. Dealing with sea level rise, shifts and changes in the discharges of river systems, subsidence, drought, salinization and guaranteeing adequate fresh water supply is a matter of national survival. The Dutch are well known for their 'fight against the water' but increasingly they recognise that they 'have to build with nature' to be able to combat the impacts of climate change. 'Building with Nature' is a design approach that takes the ecosystem as a starting point and makes use of natural processes for the sustainable management of coastal, delta and riverine regions. A consortium has been formed in which government, knowledge institutions, NGO's and private enterprises join forces, building a unique network of expertise to expand the knowledge of how the concept of 'Building with Nature' can be developed and realized in projects (de Vriend and & van Koningsveld, 2012). The future Nature Ambition 'Great Waters' (Min. EZ, 2013g) builds upon this concept.

Besides this pro-active attitude against climate change, the Netherlands also place a lot of effort on minimising the threats to biodiversity (see §1.3.6) and making nature more robust and resilient. On land, climate change triggers species migration, mainly from south to north or from low to higher altitudes. The creation of ecological corridors through completion of the National Ecological Network is one of the main initiatives to make ecosystems and species more resilient to the impacts of climate change.

One of the most valuable and most vulnerable ecosystems to climate change is the Dutch Wadden Sea, with intertidal mudflats that are exposed to sea-level rise (Kabat et al., 2009). Millions of migratory and resident birds, thousands of seals and other species depend on this ecosystem (§1.1.3). The ecosystem must be kept healthy, resilient and robust in order to face the impacts of climate change in the future. Anthropogenic pressures are subject to ecological impact assessments, and will be reduced or forbidden if they significantly harm the nature conservation objectives such as the targets that come with the EU Water Framework Directive and Natura 2000. An important development was the ban on mechanical cockle fisheries in the Wadden Sea, in 2005. In 2005 and 2008 the Council of State judged that the permit for mussel seed fishing in the Wadden Sea, provided by the (former) Ministry of Economics, Agriculture and Innovation (now the Ministry of Economic Affairs) was conflicting with the Birds and Habitats Directives. By signing a covenant between Nature NGO's, the fishery sector and the responsible Ministry, all parties agreed upon a transition phase for the mussel fishery sector. Since 2008 the fishermen are only allowed small scale mussel seed fishing, under the condition that innovation of the sector will lead to a sustainable harvesting method by 2020. Complementary to this arrangement a nature rehabilitation programme was launched with the financial aid of the legally installed Wadden Fund. This rehabilitation programme is named 'Towards a healthy Wadden Sea Ecosystem for nature and man' ('Naar een rijke Waddenzee').

Internationally specific topics like environment and biodiversity were downgraded in Dutch international development cooperation policies due to the economic crisis, but a strategic choice was made to better integrate them in broader programmes; for example, the ones that are focussing on specific geographical areas (landscapes), climate related programmes, food security and water programmes.

Altogether considerable progress has been made towards achieving Aichi-target 10 but continuation of policies and activities will be needed to improve the biological values of the Wadden Sea and to face the impacts of climate-change on this and other vulnerable ecosystems.

Caribbean Netherlands

Unusually warm ocean temperatures during the late summer and fall of 2010 caused coral bleaching, which persisted long enough to kill about 10 to 20% of the corals within six months (see § 1.2.1). Since the end of 2010, several measures have been taken (or are being prepared) to decrease the anthropogenic pressures on the coral reefs of the Caribbean Netherlands. Among others:

- Construction of the first Waste Water Treatment Plant on Bonaire to decrease the impact of waste water on coral reefs.
- Measures to decrease the impacts of overgrazing of land, erosion of soil and consequently sediment deposition on coral reef ecosystems for all islands.
- Implementation of Guidelines of the International Convention for the Prevention of Pollution from Ships (MARPOL).
- Implementation of an integral management plan for fisheries and marine biodiversity of the Exclusive Economic Zone (EEZ).
- In recent years the Saba Bank received several protection measures. The area was officially declared the Saba Bank National Park on 12 December 2010 and a management plan was implemented. The Bank was declared a marine protected area by the Dutch government on 21 December 2010 and in October 2012 it was declared a Particularly Sensitive Sea Area (PSSA) by the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO). These designations prohibit anchoring by tankers and other large ships on the entire Bank, both in territorial waters and in the EEZ, while the PSSA status is important as a legal basis by which to regulate international shipping and its associated risks, over and around the Bank. As of June 2013, the Saba Bank received two ”associated protective measures” to control the maritime activities in that area. A ‘No-Anchoring’ zone for all ships has been established to prevent the large ‘scars’ on the bottom, threatening coral reefs and other unique sea life. Additionally, an ‘Area To Be Avoided’ (ATBA) for ships of 300 gross tonnage or more came into force, as ships passing over the Bank often destroy marker buoys of lobster and fish traps, causing the lost traps to continue fishing as so-called “ghost traps”.

Many actions are underway to further minimize the anthropogenic pressures on the coral reefs of the Caribbean Netherlands. These actions however cannot compensate for impacts on a global scale, like climate change. The extent to which Aichi-target 10 can be achieved at all therefore remains doubtful.

Aruba, Curacao and Saint Maarten

Aruba: Little improvement in this respect. Recreational disturbance of nesting terns along the north coast tourist route remains intense, and real estate development pressure remains high.
Curacao: There is a zoning plan dating from 1997. However recreational disturbance continues to grow and forms an important threat to nesting seabirds (Debrot et al., 2009). Pressure on mangrove and sea-grass lagoons continues to increase dramatically, even in the last remaining relatively pristine area on the undeveloped eastern end of the island.
Saint Maarten: Pressures are increasing dramatically in all respects. Ship groundings on the main reef area occur regularly.

3.1.3 Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

Three Aichi targets have been formulated to achieve strategic goal C:

11. Protected areas increased and improved.
12. Extinction prevented.
13. Genetic diversity maintained.

Aichi target 11. Protected areas increased and improved

By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.

Netherlands

The concept for the National Ecological Network (NEN) was introduced in 1990 and has to be realised in 2027. The NEN covers all of the coastal and marine waters and more than 17% of the terrestrial and inland waters. The NEN covers all of the 164 current Natura 2000 sites, which are of particular importance for biodiversity and ecosystem services. The terrestrial and inland waters (these officially also include inland marine waters like the Westerschelde, Oosterschelde and Waddensea) cover 158 sites or 21.7% of the total area (41.528 km²). The coastal and marine waters cover 6 sites or 19.0% of the total area (59.407 km²). This means that, only based on Natura 2000, the Netherlands have already reached their 17% and 10% targets respectively. This will be even more when the whole NEN, which is still under construction, is implemented.

The Natura 2000 sites are designated and protected by law (§2.3.3), the NEN is protected by spatial plans (§3.1.2) and targets to increase the protected area. These are continuing policy goals (§2.1 policy letter 'Forward with nature policy').

Despite these figures, the NEN is not expected to accommodate sustainable habitats for all 'Dutch' animal and plant species. Protection of threatened species outside the protected areas is poorly organised. The ecological quality of the protected areas largely depends on other Aichi-targets being achieved, especially in relation to agriculture and fisheries. In addition much effort is still needed for the defragmentation of nature.

Caribbean Netherlands

On Bonaire, through the island zoning plan, 17 % of the land surface is protected as terrestrial nature park or reserve and in addition a large part of the island (approx. 40%) has been designated as a conservation area and protected from any development. On Saint Eustatius 27% of the land surface is protected as terrestrial nature park, and a large additional part of the island is designated conservation area protected from development. On Saba 3.1% is protected as nature park and in addition all the land above 550 m is protected from development. Around the islands the marine protected areas include 100% of the coastal waters. The Saba Bank marine protected areas comprises 22.5% of the total sea area around Saba and Saint Eustatius. Aichi target 11 can therefore be considered to be achieved.

Aruba, Curacao and Saint Maarten

Aruba: No recent development has taken place on this front. The most serious problem is that there is still no livestock control of any form in the Arikok National Park. Goat and feral livestock grazing is a major threat to the survival of many plants and trees. Many extinctions can be expected in the

coming decades as there is zero recruitment of young trees to replace old dying trees. In addition, the legally designated RAMSAR site of Spaanse Lagoen (70 ha) is not actively managed.
DCNA helps to standardize management throughout the Dutch Caribbean. The parliament accepted a motion to protect San Nicolas Bay tern islands and various other Nature areas in 2012. However, implementation has yet to occur.
Curacao: Management plans are available for all conservation areas while the Island land-use and Zoning Plan protects conservation areas which cover about 30% of the surface of the island. Recent legal designation of four RAMSAR protected areas is a valuable step forwards (Dilrosun et al., 2012). DCNA helps to standardize management throughout the various park projects, but park management responsibilities for public lands are also given to amateur organizations not subject to any form of professional control.
Saint Maarten: The Saint Maarten Marine Park is a recent and also the first protected area of Saint Maarten. It is partially funded and also collects user fees. This is an improvement. Several Important Bird Areas have been internationally recognized (Collier and Brown, 2008). While some have been nominated for legal protection, this has not yet taken place. One exception is Pelican Rock, a 10 m high islet of about 1.2 ha located 1.5 km off the southeast cost of Saint Maarten, which forms part of the Saint Maarten Marine Park. The 'Man of War Shoal' Marine Park, Saint Maartens' first and only nature park, covers an area of more than 5000 ha and has been officially protected since 2011. There is also a big lobby to have Mullet Pond, the last mangrove ecosystem on the Dutch side of Saint Maarten, protected under the Ramsar Convention.

Aichi target 12. Extinction prevented
By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Netherlands
Species which are known to be threatened with extinction are placed on a red list. Changes in red lists and trends of red list species give information on the level of danger of extinction (§1.2.1). For example, in the last ten years 3 plant species became extinct in the Netherlands, while six other species were found again and several plant species have no red list status anymore. Species of wet heath in particular gained from nature development and restoration measures taken by nature management organisations. As far as known, the Netherlands doesn't have endemic species; only three known endemic subspecies: the Root Vole (*Microtus oeconomus subsp. arenicola)*, the Large Copper Butterfly (*Lycaena dispar subsp. batava)* and the plant Marsh Marigold (*Caltha palustris subsp. araneosa*). All three have a national red list status while the Root Vole and Large Copper are also Annex II and IV Habitat Directive species. According to their Annex II status, Natura 2000 sites have been designated for the conservation of these two species. Their extinction from the Netherlands would imply global extinction. Despite all efforts and species protection plans, the population of the Marsh Marigold is slightly decreasing, while the conservation status of the Root Vole and Large Copper are currently still assessed as "very unfavourable".

Species outside protected areas in the Netherlands are protected by the Flora and Fauna act (§2.4). Every plan or action should be carefully planned and measures taken to minimise effects on protected species and their nests or the places they stay. In the future the government wishes to protect species by creating the right circumstances and conditions for their conservation or return (§2.1). The Flora and Fauna act (§2.4) contains an article about the obligation to establish a red list and take action to protect the red list species. Many species are protected by specific measurements

taken by NGO's and many volunteers such as the protection of meadow bird nests against agricultural activities or to help toads cross the roads on their migration to mating places.

Aichi-target 12 however is (mainly) focussed at the global IUCN Red List of threatened species (no subspecies). The IUCN Red list for the Netherlands can however only be partly used to assess Aichi-target 12, as it does not match with the Dutch Species Catalogue[9]. Harmonisation measures are currently being carried out. The Critically Endangered (CR) species are the most threatened with extinction. In compliance with the Dutch Species Catalogue, all of the species are fish : European Eel (*Anguilla Anguilla*), Atlantic Sturgeon (*Acipenser sturio*) and Angel Shark (*Squatina squatina*). Several measures especially for Eel (see §2.4.4) and Sturgeon (see §1.2.1) have been taken to conserve these and other threatened species.

Despite these measures, none of the threatened native species population trends is currently listed by the global IUCN Red List as increasing or stable. Besides that, none of the species is endemic to the Netherlands, and several can be considered migratory, trans boundary or incidentally occurring. Their conservation therefore depends on international cooperation, like the establishment of a Marine Protected Area (MPA) in the Sargasso sea, the nursery ground of European Eel; or defragmentation of rivers to allow migratory fish species like Atlantic Salmon and Atlantic Sturgeon to reach their nursery grounds. For that the Netherlands among others agreed to 'open up' the Haringvlietdam, which blocks one of the main entrances of the North Sea to the large European rivers Meuse and Rhine. This so-called 'Kierbesluit' was agreed in 2011 and the measures will be finalised in 2018.

Though the Netherlands make considerable efforts to conserve threatened species the prevention of their extinction often not only depends on species protection plans but also on international cooperation efforts as well as the progress on other targets like defragmentation of nature and a decrease in pollution.

Caribbean Netherlands, Aruba, Curacao and Saint Maarten

The IUCN Red List database only lists the threatened species for Aruba and the (former) Netherlands Antilles. Information for the separate islands cannot be extracted from the present database version. The Dutch Species Catalogue in addition currently has no information on the Caribbean species.
The most recent information for the IUCN threatened species comes from the new Nature Policy Plan (NPP-2017) for the Caribbean Netherlands (table 1). To date 63 species are listed as threatened of which 5 are Critically Endangered (CR), 22 Endangered (EN) and 36 Vulnerable (VU). No less than 75% of the threatened species, all of which are CR species, depend completely or for most of their lifecycle (e.g. marine turtles) on marine habitat. Many can be considered transboundary species which indicates that cooperation with other Caribbean states is needed to improve or sustain species populations.

The IUCN Red List regards most threatened species populations as decreasing, though future monitoring programs will need to clarify the current status and trends for most species.

Table 1. Threatened species in the Caribbean Netherlands, according to the IUCN Red List database (version 2012.2).

[9] Dutch Species Catalogue: www.nederlandsesoorten.nl. The Dutch Species Catalogue provides a current and comprehensive overview of Dutch biodiversity.

	IUCN Red List Category			
	Critically Endangered	Endangered	Vulnerable	Total
Plants	0	4	2	6
Mammals	0	3	5	8
Birds	0	1	3	4
Reptiles	2	6	0	8
Fish	1	6	18	25
Coral	2	2	7	11
Other invertebrates	0	0	1	1
Total	5	22	36	63

The ambitions and present results to conserve the Caribbean nature are promising (see §2.2). Many conservation measures have been taken or are foreseen, such as:

- Establishment of, to date, 11 terrestrial and marine National Parks (two established in 2010) and 10 Ramsar sites (four established in 2013) covering the best of all six islands. The active management of the parks is financially supported by user fees. In the future it will also be supported by a trust fund currently being built up by the DCNA. The designation of a marine reserve for sharks and sea mammals is foreseen within the Exclusive Economic Zone (EEZ) in 2014.
- The Netherlands support the status of Marine Protected Area for the Caribbean Sargasso Sea, the nursery location for 'our' sea turtles, which is foreseen before 2020 (Min. EZ & Min. I&M, 2013).
- Species conservation measures by NGO's like Echo and Fundashon 'Salba nos Lora' for conservation of the Yellow-shouldered Amazon Parrot (*Amazona barbadensis*, VU) on Bonaire or sea turtle conservation on several islands, like Sea Turtle Conservation Bonaire (STCB).
- Bonaire has protected a number of endemic plants, trees and animals through local legislation.
- Decrease of anthropogenic pressures through measures like waste water treatment and projects to address overgrazing.

Nevertheless, despite these and other positive developments, current status and trends for the threatened species concerned indicate that it's not realistic to assume that Aichi-target 12 will be achieved for all these species by 2020.

Aruba, Curacao and Saint Maarten

Aruba: Aruba has two documented animal extinctions. These are the blauwduif (*Patgioenas squamosal)*, and the Yellow-shouldered Amazon Parrot (*Amazona barbadensis)*. Unless measures are taken against feral grazers and the voracious Boa constrictor snake (*Boa constrictor*), more extinctions can be expected.

One area of advancement is that of sea turtle protection. This is headed by the NGP TurtugAruba. The improvement of wetlands and reduced hunting disturbance has meant recovery and expansion of the Caribbean Coot, *Fulica caribbaea* (Nijman et al. 2008). A bill to protect endangered and iconic species is in process, but implementation is not yet concrete.

Curacao: No recent extinctions have occurred or are at present imminent. The last extinctions took place during the early colonial period (Caribbean Monk Seal, native Rice Rat and possibly the Yellow-shouldered Parrot).
Saint Maarten: The two endemic land plants of Saint Maarten have not been documented for about 50 years, and are likely extinct. The West Indian manatee can no longer maintain itself or, importantly, use the Simpson Bay lagoon and the last sighting record is from many years ago. The introduction of the mongoose has led to a decline in land birds and likely to the extinction of the endemic snake, *Alsophis reijersmai*. The Lesser Antillean Iguana is probably extinct or at best genetically degraded by the introduction of the Green Iguana. The loss of terrestrial biodiversity is likely to continue due to habitat loss and introduced species.
The 'Man of War Shoal' Marine Park on Saint Maarten is a home and migratory stop over or breeding site for 3 IUCN Red List Species, 10 CITES Appendix I species and 89 Appendix II species. It is an area with a healthy population of marine mammals including migratory whales and dolphins, numerous species of shark, sea turtles and fish species.

Aichi target 13. Genetic diversity maintained
By 2020, the loss of genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species is maintained and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Netherlands
The Centre for Genetic Resources, the Netherlands (CGN[10]) and the Dutch Rare Breed Survival Trust (SZH[11]) are the main organizations for the conservation of agro-genetic biodiversity.
In 2002, the policy document Sources of Existence (Min. LNV et al., 2002) described the strategy and policy development in relation to genetic resources management. The tasks and responsibilities of CGN were specified in this document: advice on the development and implementation of international policies on genetic resources conservation and their exchange and use in various international forums. The Centre for Genetic Resources is responsible for the genetic resources programme. This programme aims at the conservation of ex situ resources of plants and animals, supports conservation of in situ resources, stimulates the use of genetic resources on behalf of breeding and research as part of our cultural heritage.

The status and trends on agro-genetic biodiversity in the Netherlands (§1.2.2) make clear that most cattle, horse, sheep, goat and other native breeds are currently still at risk in terms of their population size. The strategy to conserve native breeds can be summarized as 'use it or lose it'. New functions for these species are currently being created , for instance in relation to sustainable agriculture, regional food products, nature management, sports or recreation.

As for livestock, a few commercial crops dominate the production process. Since 1970, a small number of crops have almost disappeared from production systems, including rye, oats, pulses, caraway, and fodder beets. The number of farms cultivating these crops and the number of varieties offered in the market has decreased to a similar extent. Whereas this trend commenced in the

[10] Centre for Genetic Resources: http://www.wageningenur.nl/nl/show/CGN-Centre-for-Genetic-Resources-the-Netherlands.htm
[11] Dutch Rare Breed Survival Trust: http://szh.nl/english/

1970s, a final reduction has taken place over the last decade. Substantial traditional crop diversity however is currently maintained in gardens, rather than on farms, and in-garden conservation of traditional varieties has been shown to represent a robust conservation system. The genetic diversity of crops that have almost completely disappeared from the Dutch farming systems is now largely conserved in *ex situ* collections in the Netherlands and abroad.

Aichi-target 13 is still a concern. Though considerable efforts have been carried out to conserve the native livestock breeds and crops, many are still at risk.

Caribbean Netherlands, Aruba, Curacao and Saint Maarten

Agro-genetic biodiversity is not an issue in the Caribbean Netherlands, nor Aruba, Curacao or Saint Maarten (see 1.2.2).

Aruba, Curacao and Saint Maarten

Aruba: There are no unique traditional crops to be conserved.
Curacao: No unique agricultural crops or farm species to protect. Not applicable
Saint Maarten: No unique native crops or livestock to conserve. The accidental introduction of the invasive green iguana is causing genetic erosion and endangering the Lesser Antillean Iguana, *Iguana delicatissima*. The species may already have been irretrievably lost.

3.1.4 Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Three Aichi targets have been formulated to achieve strategic goal D:

14. Ecosystems and their essential services safeguarded
15. Ecosystems restored and resilience enhanced
16. Nagoya Protocol in force and operational

Aichi target 14. Ecosystems and their essential services safeguarded

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities and the poor and vulnerable.

Netherlands

Coastal protection by sand dunes and water purification by the same dunes are just two of the essential ecosystem services that are well safeguarded in the Netherlands. The Netherlands is still in an early phase however in relation to analysing and evaluating other essential ecosystem services. There is currently a strong research focus on clarifying the current situation, illustrated by the TEEB studies (§1.1.1) and other ongoing research by the Netherlands Environmental Assessment Agency and other institutes. This will be the basis for the formulation of policy strategies to map ecosystem services, apply TEEB and restore and safeguard essential ecosystem services (see also §2.1 and §2.3.2).

Despite the current focus on essential ecosystem services in the Netherlands their analysis and evaluation is still at an early stage, as is the process towards their safeguarding and restoration. One of the actions of the Natural Capital Agenda (Min. EZ & Min. I&M, 2013) is the development of the digital atlas of natural capital in the Netherlands.

Internationally the Dutch Ministry of Foreign Affairs and its embassies, Dutch Ministries, water boards, civil society organizations, knowledge institutes and companies support various programmes that promote protection and sustainable use of ecosystems. The challenge is to

integrated the values of ecosystem services with government policies. Several of these programmes combine participatory land use planning that is guided by science, integrated water resources management, promotion of renewable energy and the facilitation of value chains for sustainable products and services that can be accommodated in climate robust landscapes.
Examples of such programmes are the Initiative for Sustainable Land and Water of IDH, the SUSTAIN Africa programme of IUCN, which aims to make economic growth corridors in Africa more sustainable, and a programme of the Horn of Africa Regional Environment Centre and Network in the Rift Valley and the cross-border Boma-Gambella Landscape in South-West Ethiopia and South Sudan. This latter landscape contains an informal economic growth corridor with large agricultural development but also a still rather unknown ecosystem with an annual migration of about 850.000 white eared kob deer and many other wild animals, including large mammals like elephant and giraffe, that has eco-tourism development potential. Other examples include the Ecosystem Alliance programme (collaboration of IUCN NL, BothENDS and Wetlands International), supporting civil society in 16 countries in the (sub-) tropics with the objective to improve ecosystem management for the benefit of local communities. Another example is the IUCN NL 'Transboundary Governance African Great Lakes' programme empowering local communities to safeguard the unique ecosystems in the African Great Lakes zone.

Caribbean Netherlands

The TEEB studies on Bonaire, Saba, and Saint Eustatius will better identify essential services provided by the ecosystems on the islands and provide the islands with the tools to restore or safeguard these services. Coral reefs provide essential ecosystem services for tourism, the prevention of erosion and nursery of fishes, but are globally deteriorating. Efforts are on-going to safeguard the coral reefs, but this will continue to be a major challenge and even if locally successful, global change may negate the local efforts. As such it's not expected that Aichi target 14 will be achieved by 2020.

Aruba, Curacao and Saint Maarten

Aruba: No improvement to report on this front.
Curacao: The most important in this is the 1997 Land-use and Zoning Plan. On land, this millennium goal can be considered achieved, but not in the marine environment where pressures continue to mount.
Saint Maarten: Ecosystem degradation and habitat destruction is proceeding at the highest pace of all Dutch Caribbean islands. Hopefully the new land-use zoning plan will be implemented soon and help stem habitat loss.
On Saint Maarten an estimation has been made on the value of ecosystem services of Mullet Pond (such as its fish nursery function and prevention of coastal erosion), one of the last representations of intact or near-intact mangrove ecosystem left on the Dutch Side of Saint Maarten. A recent calculation made by Nature Foundation estimated the Mullet Pond ecosystem to contribute an approximately 792.000,- USD or 1.425.600,- ANG to the local economy (amount based on the model 'Economic Value of Ecosystems', by World Resources Institute). Mullet Pond not only supports the ecosystems in situ but also supports the biodiversity of Saint Maarten's coastal waters including the Man of War Shoal Marine Park. It functions as a nursery area for numerous fish species and also acts as the most significant storm refuge for numerous bird, fish, and reptile species.
Studies of The 'Man of War Shoal' Marine Park, have shown that biodiversity in this area, particularly coral reef coverage, is high and the economic goods and services which the ecosystem provides are in excess of fifty million dollars annually.

Aichi target 15. Ecosystems restored and resilience enhanced

By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks have been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

Netherlands

Chapters 1 and 2 showed that many efforts are being carried out to complete and manage the National Ecological Network (NEN), including all Natura 2000 sites. This means restoration or reconversion of land into natural ecosystems and defragmentation of natural habitat.
The nature management plans and all efforts to minimise the anthropogenic pressures will eventually enhance the resilience of ecosystems (see also the example of the Wadden Sea under §3.1.10). The measures under the EU Water Framework Directive and the so-called Delta Program will also enhance the resilience of wetlands in the Netherlands. The ambitious policy for the great waters of the Netherlands Delta (Min. EZ, 2013g) aims at restoring natural processes, improving biodiversity and adaptation to climate change. A process which goes beyond 2020.
Forests and peat lands are the main ecosystems for potential carbon sequestration. Only 10.6% of the Netherlands land surface is forested (Probos, 2012). All forests are legally protected and sustainably managed. The conversion of land into natural ecosystems will result in additional carbon sequestration. To date the forests sequester 1,36 million tons of carbon per year (Probos, 2012). The existing forests will remain carbon sinks. However, due to their age structure, they will sequester less carbon per year (as the amount of carbon sequestration is reduced when forests approach maturity).
To date around 11% of Dutch soil still consists of peat (Hendriks, 2009), most of which is used as dairy pastures. These pastures are not regarded as degraded ecosystems in nature policy plans. Restoration of peat lands in Natura 2000 sites are part of policy plans to contribute to Aichi target 15.
The greenhouse gas balance of restored peat lands depends on vegetation type, water level, level of fertilisation and other factors. This is a complex system which is not fully understood yet. It is subject to several studies (Van de Riet et al., 2013; Kroon et al., 2010; Kwakernaak et al., 2010; Schrier-Uijl, 2010; Hendriks, 2009) which are among others aimed at the restoration of degraded peat lands and its potential for carbon sequestration. These sensitive grasslands within the Natura 2000 sites will be protected by the new Common Agricultural Policy.

Caribbean Netherlands

As part of the Nature Policy Plan 2013-2017, criteria will be developed to identify the needs for restoration on the islands. Currently Bonaire is engaged in a successful small scale reforestation project on the island of Klein Bonaire and in the Washington Slagbaai National Park and plans are under development to reduce overgrazing by goats, followed by reforestation in controlled areas. A small scale Acropora restoration project is currently being piloted on Bonaire.
However, considering current status of ecosystems, it is not expected that Aichi-target 15 will be achieved by 2020.

Aruba, Curacao and Saint Maarten

Aruba: No improvement to report except a small mangrove reintroduction project on the keys in front of Oranjestad harbour.
Curacao: Important in this regard are the recovery of several endangered birds due to the decline in hunting pressure and recovery of forest vegetation (Prins et al. 2009). Successful reforestation projects for threatened tree species and on Klein Curacao and eradication of predatory cats on Klein Curacao. Partial recovery of the keystone species black sea urchin, and sea turtle populations have occurred (Debrot et al. 2005, Debrot and Nagelkerken 2006). Key mangrove, seagrass and fish nursery areas continue to decline due to mounting recreational user pressures (e.g. Spaanse Water).
Saint Maarten: Ecosystem degradation and habitat destruction is proceeding at the highest pace of all Dutch Caribbean islands.

Aichi target 16. Nagoya Protocol in force and operational
By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Netherlands and Caribbean Netherlands
The Netherlands signed the Nagoya Protocol on 23 June 2011. As it is a mixed treaty, partly EU competence and partly national competence, a regulation to implement the Nagoya Protocol is currently being negotiated within the EU (Min. EZ, 2013h). Negotiations on implementing legislation within the EU will have to result in EU- and national implementation in the years to come. Also, the Dutch government supports initiatives in relation to Access and Benefit Sharing cooperation with third countries. The Nagoya protocol is expected to be in force and operational by 2015.

In anticipation of these developments the Dutch government aims to support a Green Deal to apply the international agreements on Access and Benefit Sharing (ABS; Min. EZ & Min I&M, 2013). In a pilot project, businesses from the Dutch breeding sector, knowledge institutions and government will aim to set up cooperation with similar parties from a developing country that could provide genetic resources. By the end of 2014 this should result in an agreement on the access to genetic resources and the fair and equitable sharing of benefits arising from the use of the relevant genetic material. The agreement could serve as a model for future ABS agreements.
The protocol will apply for both the Netherlands and the Caribbean Netherlands, with the EU-legislation applicable in the Netherlands only, giving the opportunity to adapt any measure in Caribbean Netherlands to the specific situation. Reasonable progress has been made on Aichi-target 16.

Aruba, Curacao and Saint Maarten
Aruba: Benefits for use of biodiversity and genetic resources has not been regulated by law.
Curacao: Draft policy documents are available but have not been acted upon by government (Meesters et al. 2010). This means that the island has missed out completely on several (marine) biopharmacy discoveries in recent years and will continue to miss out on this important opportunity unless the matter is attended to.
Saint Maarten: Draft policy documents are available but have not been acted upon by government (Meesters et al. 2010). This means that the island can miss out completely on bio pharmacy discoveries in in the future, unless the matter is attended to.

3.1.5 Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

Four Aichi targets have been formulated to achieve strategic goal E:

17. NBSAPs adopted as policy instrument.
18. Traditional knowledge respected .
19. Knowledge improved, shared and applied.
20. Financial resource from all sources increased.

Aichi target 17. national biodiversity strategy and action plan adopted as policy instrument
By 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing, an effective, participatory and updated national biodiversity strategy and action plan.

Netherlands
The Netherlands has had a national biodiversity strategy with action (NBSAP) plans for many decades. The internationally agreed biodiversity commitments have been integrated, as appropriate, in relevant domestic policy papers. Key government policy papers for nature and biodiversity are:

- Nature Policy Plan (Min. LNV, 1990).
- 'Nature for people, people for nature: policy document for nature, forest and landscape in the 21st century' (Min. LNV, 2000).
- 'Sources of our existence: conservation and the sustainable use of genetic diversity' (Min. LNV et al., 2002).
- 'Biodiversity works: for nature, for people, for ever: the biodiversity policy programme of the Netherlands 2008-2011 (Min. LNV, 2008a)'.
- Vision for Nature (in preparation).

The most recent Programme is the 'Natural Capital Agenda 2013' (Min. EZ & Min. I&M, 2013) , sent to the Dutch parliament in June 2013, that addresses the key challenges of the 2020 biodiversity targets. Key government policy papers which integrate biodiversity include:

- 'Fourth National Environmental Policy Plan' (Min. VROM, 2001).
- The National Policy Strategy for Infrastructure and Spatial Planning (SVIR).

With the current national biodiversity policy papers and action plans Aichi-target 17 can be considered to have been achieved by 2015.

Caribbean Netherlands
The NBSAP for the Caribbean Netherlands is the Nature Policy Plan 2013-2017 (NPP-2017) which was adopted in May 2013 and covers the period 2013 – 2017. Aichi-target 17 has therefore been achieved.

Aruba, Curacao and Saint Maarten
Aruba: In their review of CBD implementation in the Dutch Caribbean, Van Buurt and van der Berg (2010) stress the following points for Aruba: 1) the lack of legislation, policy and planning on nature and environment; 2) limited budget for nature conservation and environment; 3) capacity building of the NGO's and continuity; 4) execution of CBD guidelines and related international treaties at the national level; 5) having nature on the political agenda. There is as yet no accepted and implemented National Biodiversity Strategy, and there are no specific advances to report. Nevertheless Aruba does have national legislation consistent with both CITES and the SPAW protocol (Van Buurt and van der Berg, 2010).

Curacao and Saint Maarten: Millennium goals have been defined for Curacao and Saint Maarten but have been acknowledged that no reasonable progress has been made (UNDP 2011). The governments of Curacao and Saint Maarten state that conservation of biodiversity and environmental care is essential, otherwise all other development goals and the basis for the tourism industry development will be self-defeated. The report highlights the grave (economic) risks that climate change bring for the island (UNDP, 2011) while Debrot and Bugter (2010) discuss biodiversity risks and possible adaptation measures. The report further stresses the critical need for zoning and management of the biological resources of the EEZ. It also refers to the limited funding availability and the important effect of how the small scale of the island translates into a lack of capacity, a longstanding challenge to all European OTCs, including those of the Kingdom of the Netherlands (IUCN, 2010; UNEP, 2005), that can only be addressed by cooperation(IUCN, 2010).
Though the Curacao Nature Policy Plan has been developed and written it has not been implemented or updated (Eilandgebied Curacao, 2001). Saint Maarten on the other hand is currently updating the 2005 Nature Policy Plan, it is working on an Environmental Policy Plan and an (renewable) Energy Policy Plan, to be established in 2014.

Aichi target 18. Traditional knowledge respected
By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Netherlands
The Netherlands has no indigenous peoples or local communities as defined by the CBD within its borders. It can however substantially affect indigenous and local communities beyond those borders through international cooperation, foreign policy and policies on sustainable trade. Many large Dutch business sectors, such as the timber, palm oil and soy industry are for instance linked to the physical environment and the well-being of these peoples and communities, affecting their capacity to protect and sustainably use unique flora and fauna around them.

Specific policy on indigenous peoples dates back to 1993 and has not been reviewed since. The Netherlands ratified the Indigenous and Tribal Peoples Convention (ILO Convention 169) in 1998 and voted in favour of the adoption of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007, but no specific policies have been developed to support its implementation, partially due to the fact that a sectorial approach was adopted in Dutch development cooperation policies as a major organising principle. This resulted in only limited attention for specific aspects of indigenous peoples and local communities, among which was the respect for their traditional knowledge about biodiversity.

The Netherlands Centre for Indigenous Peoples (NCIV) is the only Dutch organisation with a primary focus on the promotion of indigenous people's rights in parts of the world with rich biodiversity. Up to 2008 the NCIV received a subsidy from the Dutch Ministry for Development Cooperation to support direct participation of certain indigenous peoples in international processes to advocate their rights and to make policy makers aware of the importance of their knowledge regarding biodiversity. Currently NCIV cooperates with Dutch NGO's like Oxfam-Novib to support indigenous peoples in biodiversity rich parts of the world.

Based on the lack of current specific policy in this thematic field and the still rather strong focus in Dutch development cooperation and trade policies on a limited number of sectors (rather than the wellbeing of indigenous peoples and local communities or specific geographical units with a rich biodiversity and thorough traditional knowledge about its use), it is doubtful if the Netherlands has contributed significantly so far to respecting traditional knowledge as requested under Aichi-target 18. Nevertheless, Dutch NGO's like NCIV, Hivos, Oxfam-Novib, Both-Ends and also IUCN-Netherlands are active in this thematic field and recently more integrated approaches have been adopted in Dutch development cooperation, one of them being an area based approach.

Caribbean Netherlands

The Caribbean Netherlands also lack traditional, local or traditional communities as defined by the CBD. However, the islands do have a cultural heritage with respect to use of natural resources, which includes useful traditional knowledge. Traditional cultural values are taken into account to effectively implement nature conservation measures. Altogether Aichi target 18 can be regarded to be achieved.

Aruba, Curacao and Saint Maarten

Aruba: Aruba is rapidly losing traditional knowledge because there are fewer elders. There are no serious efforts to document this knowledge. The book by Dinha Veeris (1999) documents some traditional knowledge about the use of plants.
Curacao: Several contributions to this effect have been made, the best-known being that of Veeris (1999). However, traditional information is rapidly being lost due to globalization and changing lifestyles.
Saint Maarten: Several contributions to this effect have been made, the best-known being that of Nielsen and Schnabel (2007) for Saba. However, traditional information is rapidly being lost due to globalization and changing lifestyles.

Aichi target 19. Knowledge improved, shared and applied

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Netherlands

The Netherlands has a long history in environmental research and biodiversity monitoring (see Box 2). Researchers, conservation site managers, consultants, NGO's and policy makers cooperate in a Knowledge Network (OB+N) since 1989 to conserve and restore ecosystems in the Netherlands. The Netherlands Environmental Assessment Agency in cooperation with scientific institutes and NGO's periodically reports about the status and trends of nature, biodiversity and of other environmental issues in the Netherlands. Examples of other environmental issues are environmental pollution, protein use, use of several natural resources, such as fish stocks. The tasks to make these reports are legally written down in the Nature Conservation Act (§2.4).The nature policy of the Netherlands is largely based on the outcome of these reports. The information is widely available. The Dutch language website www.compendiumvoordeleefomgeving.nl includes some 2000 indicators on nature and the environment. The most important indicators, like those needed for the CBD-report, are regularly updated. An overall indicator of ecosystem services or availability of natural capital is still under development.

Box 2 Ecological monitoring in the Netherlands

The Netherlands has a long history of ecological monitoring. With the increased national and European juridical obligations in relation to nature conservation it became clear that the collected data did not always meet the knowledge required by the government and others. Therefore in 1999 the Ecological Monitoring Network (NEM) was set up. The NEM is a cooperation between governmental organisations on the monitoring of nature in the Netherlands that aims to adjust the collection of data to governmental needs. The NEM follows the trends of nearly all species groups relevant for nature policy.. As such the NEM can be considered as the backbone of the monitoring of nature in the Netherlands. The NEM mainly commissions Private Data Collecting Organisations (PGO's) to carry out the monitoring schemes and is therefore a well established example of citizen science. The NEM monitoring protocols are standardized in cooperation with Statistics Netherlands (CBS). CBS is also responsible for data analysis, which strongly improves the statistical reliability of the reported status and trends of species of the EU Habitats Directive and Birds Directive in the Netherlands.

In addition to the standardized monitoring data, the NEM more and more uses less standardized data from other sources. The amount of such opportunistic data increases rapidly due to easily accessible websites and apps on mobile phones. New statistical modelling by CBS make these data suitable for monitoring purposes.

The Ministry of Economic Affairs established the National Database Flora and Fauna in 2007 (NDFF) in order to make data accessible. The NDFF can be considered a data warehouse which contains the data of plants and animals that have been collected by PGO's, other organisations and volunteers over previous decades. All data entering the NDFF are validated. To date the NDFF contains over 70 million records on the distribution of flora and fauna, which is the result of combining over many databases. Each year more than 6 million new data are added to the database. The database is being used by the government, municipalities, provinces, districts, conservationists, construction industries and others.

Caribbean Netherlands

Research and monitoring is one of the strategic goals for the NPP-2017 (see 2.2). Many initiatives have already been initiated after 10-10-10, the date when the three Caribbean islands became special municipalities of the Netherlands. The development of a Biodiversity Monitoring Strategy for the Caribbean Netherlands was started in 2012 and will be completed early in 2014. It is the intention that this document will form the strategic framework for biodiversity monitoring throughout the Dutch Caribbean region, also linking with the rest of the region.

Lots of data on biodiversity and the environment have been collected over the years by nature management organisations, NGO's, students and others. Not always systematic and easily accessible for others though. The Ministry of Economic Affairs therefore commissioned the development of the Dutch Caribbean Biodiversity Database (www.DCBD.nl for Aruba, Bonaire, Curaçao, Saba, Saint Eustatius and Saint Maarten) to guarantee long-term data availability and access, support nature management and facilitate treaties and convention reporting requirements (Verweij & Schmidt, 2013).

In 2012, the Dutch Ministry of Education, Culture and Science (OCW) allocated 2.5 million euros for the establishment of a multidisciplinary knowledge centre in the Caribbean Netherlands. This centre is located on Saint Eustatius and named Caribbean Netherlands Science Institute (CNSI). It will be the starting point for research and monitoring in the region and it will play an educational role for the local community. NWO, the Netherlands Organisation for Scientific Research commissioned

the Royal Netherlands Institute for Sea Research (NIOZ) to set up this centre, which was opened in 2013. The Ministry of OCW allocated an additional 10 million euros for launching a research programme, aimed at the Caribbean as a whole. The research programme and the knowledge centre focus on earth and life sciences, complemented by topics from the humanities and social sciences. Considering all these initiatives reasonable progress has been made on Aichi-target 19.

Aruba, Curacao and Saint Maarten

Aruba: Very little science currently takes place on Aruba. Access to information is very limited. The Dutch Caribbean Biodiversity Database in development by Wageningen University and Research centre (Wageningen UR) will hopefully make access to these studies and data easier for everyone. Significant recent research has been published on marine mammals. WildAruba Seminars help disseminate scientific knowledge on flora and fauna of Aruba.

Curacao: Carmabi Foundation has been the motor for knowledge generation for more than 50 years. Thousands of scientific studies have been published and are available. The Dutch Caribbean Biodiversity Database in development by Wageningen UR will hopefully make access to these studies and data easier for everyone.

Saint Maarten: Recent years have seen a major growth in biological research and publications, particularly from the local consultancy bureau EPIC. The nature Foundation is also active in generating knowledge and participating in joint science endeavours. The Dutch Caribbean Biodiversity Database in development by Wageningen UR will hopefully make access to these studies and data easier for everyone.

Aichi target 20. Financial resource from all sources increased

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties.

Netherlands

In order to halt biodiversity loss, the Dutch provinces acquire land to be reconverted and developed for natural areas in order to enlarge and defragment the currently small and isolated ecosystems. The government subsidises nature management in natural and agricultural areas. Nature conservation organisations and, to a lesser extent, the agricultural sector and several other parties also cover part of the costs of nature and landscape conservation. Other financial sources for nature organisations are for example donations and lottery. Efforts aimed at increasing sources of finances are particularly focused on the development, wider implementation and acceptance of Innovative Financing Mechanisms (IFM 's) and the mobilization and use of private funding sources. This is consistent with the principles of corporate social responsibility and sustainable production and consumption (the polluter pays principle) pursued by the Netherlands. The polluter pays principle is difficult to implement because the relation between biodiversity and pollution is very complex. The government cooperates intensively with industry to develop these principles and to apply them. An example is the platform BEE (Biodiversity, Ecosystems and Economy) an initiative of IUCN-NL and the Confederation of Netherlands Industry and Employers (known as VNO-NCW). Its main goal is to raise awareness among businesses of the importance of biodiversity and ecosystems and mainstreaming natural capital in company policy. So far however, it has not been easy to assess the amount of

private sector funding. The Netherlands has prepared the 2006-2010 baseline report in the framework of the CBD agreements on resource mobilization. The Hyderabad commitments, for doubling total biodiversity-related international financial resource flows to developing countries in 2015, compared to the baseline 2006-2010, was agreed the 11th Conference of the Parties to the Convention on Biological Diversity as a global collective target (COP 11, Hyderabad 2012). Current actions by the Netherlands are in line with the agreements made at COP 11 in terms of stabilising the level of spending for global biodiversity. In the coming years The Netherlands will develop a methodology to estimate the contributions of non-governmental players to the accomplishment of the Aichi targets.

Caribbean Netherlands

It remains a challenge to provide sustainable and regular funding to cover the operating costs of the organizations managing the marine and terrestrial protected areas on the six Caribbean islands concerned. To support this important work a trust fund was created by the Dutch Caribbean Nature Alliance (DCNA[12]) in 2006 and a Trust Fund bank account was setup with the Rabobank in the Netherlands. The capital is locked in for a defined period and cannot be used to solve short-term funding needs. Revenues from the fund are reinvested (not withdrawn from the Trust Fund), and will be until 2016, when a review will take place. A Trust Fund Committee was created by DCNA and provides coordination, leadership and decision making power throughout this process. The Dutch Ministry of the Interior contributes €750,000 annually (until 2016). DCNA also became a beneficiary of the Dutch Postcode Lottery in February 2009. From each annual donation of €500,000 from the Lottery, €200,000 is deposited straight into DCNA's Trust Fund account.

For the implementation of the NPP-2017 the Ministry of EZ has earmarked € 7.5 million for nature conservation projects on the islands to be implemented over a period of four years, specifically intended to catch up on outstanding or overdue management measures. Projects will be targeted at coral reef conservation, in particular through reduction of erosion, sustainable use of nature e.g. through improved accessibility of nature, and to improve the synergy between nature, land use (agriculture) and tourism.

In addition a yearly € 600,000 is available for implementation of the NPP-2017, plus € 500,000 for research, monitoring and reporting on biodiversity. The islands receive € 800,000 per year to support them in their nature management responsibilities, to be used at their own discretion. Revenues from park entrance fees are invested in nature management, but budgets from other local sources are unfortunately hardly available on the islands.Though the challenges ahead are far larger than can be covered by current budgets, the financial resources have increased substantially. As such Aichi target 20 can be regarded to be achieved.

Aruba, Curacao and Saint Maarten

Aruba: Funding has not increased. Arikok National Park receives significant funding from government for staff costs and also charges entry fees to the visiting public. A small grant cycle exists for social and environmental projects.

Curacao: The government of Curacao has traditionally been the best of all islands in terms of providing structural (although very limited) funding for nature management, science and

[12] Websites DCNA: www.dcna.nl or www.dcnanature.org

conservation education (almost all through Carmabi). Since 10/10/10 however, funding has declined and become less certain, whilst the need for funding has only increased.
Saint Maarten: The Nature Foundations receives minimal funding from government for their program and so user fees are obtained from marine park users. Funding remains very deficient and the increase has only been minimal when compared to what is needed to address this important national task. This is disappointing considering that Saint Maarten is a well-developed and prosperous island.

3.2 Contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the MDG's

The prime mandate for Development Cooperation in the Netherlands lies with the Ministry of Foreign Affairs and the Directorate General for International Cooperation (DGIS). The main objective of DGIS is to contribute to structural poverty alleviation in developing countries and to stimulate sustainable development. The environment, as a major component of sustainable development, is integrated in all DGIS policies and interventions: attention for environment-related services, "greening" of all relevant development sectors, sustainable management of the worlds' ecosystems. One of the major challenges for Dutch Aid is to respond to the Millennium Development Goals. The Netherlands particularly aims to contribute to achieving MDG1, MDG7 and MDG8: linking poverty alleviation to the sustainable use of natural resources, creating a better environment and sustainable economic growth (trade / value chains).

Data on projects and other activities in biodiversity conservation and management within development cooperation can be found on the PROFORIS website[13] .The PROFORIS database contains information on Netherlands Government funded programmes and projects in the areas of international nature, forest, water and biological diversity. This website is there to inform the general public on the Netherlands government's worldwide support in these areas.
Internationally the Netherlands contributes mainly to programmes focussing on water and food security, including topics like sustainable land use and management of ecosystems, thereby recognising the (potential) impacts of climate change. This is mainly materialised by development cooperation activities in the fields of sustainable agricultural production and market systems and sustainable water use and water management. Several climate related programmes have also recently been initiated that use an area based approach, integrating land use planning, IWRM and the development of sustainable value chains that fit in diverse and resilient landscapes,

The Dutch Embassies in ten partner countries have developed water programmes aimed at an improved management of some vital water catchment areas. Options for payment for ecosystem services (especially water provisioning) are included within several of these programmes.
The Natural Capital Agenda 2013 (Min. EZ & Min I&M, 2013) also describes some concrete actions to be carried out by Dutch Ministries in developing countries in the coming years. A conference on food and biodiversity that will be organised in 2014 will for instance deliver concrete advices for a better synergy between biodiversity and food production. These recommendations will be applied in several pilot projects on integrated land use planning in developing countries in 2015. These will be

[13] PROFORIS: www.proforis.nl

implemented in areas with high biodiversity potential, which can be linked to food security or water programmes of Dutch Embassies.

Another action concerns the restoration of degraded areas. The Netherlands Environmental Assessment Agency (PBL) has mapped the degraded areas worldwide. In cooperation with companies and other potential funders at least two pilot restoration projects will be implemented before 2015 (Min EZ & Min I&M, 2013). These pilots have to prove that businesses can and will contribute to ecosystem restoration and that degraded areas can be converted into a productive and biodiverse system with a well-balanced water table.

The Ministry of Foreign Affairs promotes TEEB internationally and supports the World Bank to implement the WAVES programme, which aims to integrate Natural Capital Accounting in national accounts.

3.3 Lessons learned from the implementation of the Convention

In the last four years the Netherlands has accomplished a lot in the field of biodiversity both within and outside its borders. Considerable progress has been made. The NEN in combination with management measures and a substantial decline of environmental pressures were successful instruments that slowed down the rate of biodiversity loss in the Netherlands.

Topics like environment and biodiversity were downgraded in international development cooperation policies but a strategic choice was made to better integrate them in broader programmes. This resulted in strong links between climate change mitigation and adaptation and ecosystems management in Dutch foreign policy, not only in climate related programmes but also in water and food security programmes for instance via a multi-stakeholder landscape approach.

In 2011 the cross sectoral program Biodiversity of the Dutch government installed a Taskforce on Biodiversity and Natural Resources to evaluate the biodiversity situation and to look for the best ways and methods for protecting biodiversity and for using biodiversity sustainably both within the Netherlands and globally (Taskforce biodiversiteit en natuurlijke hulpbronnen, 2011). The Taskforce's composition reflected this broad challenge. Its members came from different groups in society: trade and industry, science, social organizations and various government bodies. The recommendations were presented to the government on December 13th 2011. The Taskforce recommended:

- Raising awareness for a sound understanding of the relevance of biodiversity and natural resources for our economy and wellbeing.
- Efficient land use, meaning that agriculture should take place in the areas most suitable for it and that nature should be preserved in coherent ecological networks.
- Greening the economy to reduce the pressure from Dutch production and consumption patterns on biodiversity.
- Coherent government policy by all relevant policy areas, including agriculture and fisheries, international cooperation, environmental policy, industry policy and trade policy.
- Establishing public-private partnerships.

Looking at the results of Dutch efforts in the mentioned fields, a lot has been accomplished as has been described in the text above. The policy document 'Natural Capital Agenda' (Min. EZ & Min. I&M, 2013) is based on the recommendations provided by the Dutch Taskforce on Biodiversity and Natural Resources (Taskforce biodiversiteit en natuurlijke hulpbronnen, 2011).

It has to be concluded that the specific cross sectoral program ‘Biodiversity works’, which was developed by the inter-sectoral Task Force, was too ambitious in its scope, trying to coordinate too many sectors for the whole country, adding additional complexity via the integration of the international dimensions of a multitude of environmental challenges. So the program ended but the cooperation on biodiversity related issues between the ministries of Foreign Affairs, Economic Affairs and Infrastructure and Environment continued, partially in the framework of the Natural Capital Agenda.

Appendix I: Information concerning the reporting party and preparation of the fifth national report

A. Reporting Party

Contracting Party	The Netherlands
NATIONAL FOCAL POINT	
Full name of the institution	Ministry of Economic Affairs/ Department of Nature and Biodiversity
Name and title of contact officer	Drs. M. Meijster, senior policy officer
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CONTACT OFFICER FOR NATIONAL REPORT (IF DIFFERENT FROM ABOVE)	
Full name of the institution	
Name and title of contact officer	
Mailing address	
Telephone	
Fax	
E-mail	
SUBMISSION	
Signature of officer responsible for submitting national report	
Date of submission	

B. Process of preparation of national report

The process to draft the 5th National Report started early 2013. The process was led by a team of representatives from the Ministry of Economic Affairs. Biodiversity indicators and information was collected by R.J.H.G. Henkens and M.E. Sanders, scientific specialists from Alterra, part of the Wageningen University and Research Centre. The team consulted several knowledge and research centres like the Netherlands Environmental Assessment Agency (PBL), the Centre for Genetic Resources, the Netherlands (CGN), the Dutch Rare Breed Survival Trust (SZH), the Team Invasive Alien Species (TIE), the National Authority for Data concerning Nature (GaN) and other specialists from Alterra and Imares (both part of the Wageningen University and Research Centre).

The information from the Caribbean Netherlands was collected by the Rijksdienst Caribisch Nederland, in consultation with representatives from the islands of Bonaire, Sint Eustatius and Saba. The information for the autonomous countries of Sint Maarten, Aruba and Curacao was collected by A.O. Debrot from Imares in consultation with the Saint Maarten Nature Foundation, EPIC, VROM, the Ministry of Public Health, Social Development & Labour (all Sint Maarten); Meteorological Service, Directorate of Nature and Environment, Department of Economic Affairs, Commerce and Industry (all Aruba); and an Environmental consultant, Dienst Ruimtelijke Ontwikkeling en Volkshuisvesting (all Curacao). The Dutch Caribbean Nature Alliance (DCNA) provided information on all six Caribbean islands.

Drafts of the 5th National Report were discussed for three times in meetings with the Dossier Team Biodiversity. This team consists of relevant officers from the Ministry of Foreign Affairs, the Ministry of Infrastructure and Environment and the Ministry of Economic Affairs .

The final draft was distributed to the members of the IUCN National Committee and The Association of Provinces of the Netherlands (IPO, Interprovinciaal Overleg) and discussed with the Ministry in a meeting March 2014.

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Appendix III. National implementation of the thematic programmes of work and plans under the CBD or decisions of the CoP related to cross-cutting issues

See: http://www.biodiversiteit.nl/nederlandse-overheid-biodiversiteit/biodiversiteitsbeleid-vanaf-2012/kamerbrief-uitvoeringsagenda-natuurlijk-kapitaal-juni-2013.pdf

Appendix IV. Summary of progress on Aichi-targets, Netherlands (excl. Caribbean Netherlands).

Aichi-targets	Indicators used (§ in report)		Main policy notes and actions (§ in report)		Main progress made
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society					
1. Awareness increased	1.1.1	• Trend of members of nature management organisations • Trend of participants and locations Nature Work Days • Public support survey • Corporate Social Responsibility	2.3.1 3.1.1	Involvement of citizens, business and industry: • Natural Capital Agenda Ad IV 16 • policy letter 'Forward with nature policy'	Awareness relatively high and participation is increasing. On the other hand, due to the crisis a growing number of people think that nature should not be among the four top priorities for the Dutch government.
2. Biodiversity values integrated		Spatial plans, Codes of conduct, Environmental assessments,	2.3.3 3.1.2	• Flora and Fauna act, Nature conservation act. • National Policy Strategy for Spatial Planning (SVIR)	Considerable progress on all related aspects achieved and improving. Since 1995 the NEN is incorporated in spatial plans. The government uses spatial information about protected species according to the flora and fauna act to demand mitigation and compensation measures when they allow spatial development and construction within their territories.
3. Incentives reformed			3.1.3	• Green Growth	Progress is limited due to positive (greening of the EU CAP en CFP; sustainability criteria on renewable energy) and negative (harmful subsidies in energy, transport and agricultural sectors not reformed) developments
4. Sustainable consumption and production	2.4.1 2.4.2 2.4.3 2.4.4 2.4.5	• Trend in area used for organic farming • Trend in forest area (ha) with FSC-label • Trend in fish consumption, incl. MSC-label • Status of market share sustainable raw materials	2.4 3.1.4	• Natural Capital Agenda ad I • Platform BEE	Reasonable progress made though agricultural sector still a concern. • Governments, business and stakeholders work on sustainable production and consumption. • Major steps taken to keep impacts of use of natural resources within safe ecological limits • Concern still exists about the reform of the agricultural sector and the ecological footprint.
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use					
5. Habitat loss halved or reduced	1.3.2 1.2.1	• Trends for defragmentation of nature (MJPO) • Barriers for migratory fish • Trends for target species in terrestrial ecosystems	2.5 3.1.5	• Nature for people • policy letter 'Forward with nature policy' • Nature Pact	Reasonable progress made. • Habitat loss stopped (already in 1990). • Continues defragmentation of terrestrial and aquatic habitat. • Environmental pressures significantly reduced though certain habitats still face degradation.

6. Sustainable management of marine living resources	1.3.7	Trends of fish stocks in the North Sea	2.4.3 3.1.6	• Natural Capital Agenda Ad II • Action plan for EU MSFD. • EU CFP enforced in 2014. • Ban on bottom trawling in coastal Natura 2000-sites in 2016. • VIBEG-agreement which limits shrimp fishing.	Considerable progress made. Further progress depends largely on implementation of CFP from 2014 onwards. • Most commercial fish stocks are within safe biological limits, but long living and slow reproducing species are a concern. • Six coastal and marine Natura 2000 sites designated and management plans being developed.
7. Sustainable agriculture, aquaculture and forestry	2.4.1 2.4.2 1.2.1	• area with agri-environmental schemes • Trend in farmland birds • Trend in organic farming • Trend in forest area (ha) with FSC-label	2.4.1 2.4.2 2.4.4 3.1.7	• policy letter 'Forward with nature policy' • Natural Capital Agenda Ad III • Common Agricultural Policy (CAP) • Agri-environmental schemes • Natural Capital Agenda ad I 1	Considerable progress made in forestry; agriculture is still a concern. • Sustainable production and consumption of forestry and aquaculture products increases. • Sustainable agricultural production and consumption slowly increases, nitrogen emissions are still above critical limits, farmland biodiversity still decreases.
8. Pollution reduced	1.3.3	• Trends in environmental pressures on water and nature • KRW nitrogen	3.1.8	• PAS • KRW • Natural Capital Agenda • Nature Pact	Considerable progress made and most pollution substantially decreased. However still concern about: • Nutrients excess which is still above critical limits. • Pesticides and especially its impacts on bees.
9. Invasive alien species prevented and controlled	1.3.4	• Trends in exotic species in the Netherlands	3.1.9	• Policy note on Invasive species • Flora and fauna Act • Int. Convention on Ballast Water • Code of conduct ornamental plants	Many actions have been taken but the number of exotic species still increases and especially aquatic species are a major management challenge.
10. Pressure on vulnerable ecosystems reduced	1.3.6	• Trends of climate change on species	3.1.10	• Delta Program • Building with nature • Natural Capital Agenda Ad II 6 • Waddenzee rehabilitation program 'Naar een rijke Waddenzee'.	Considerable efforts made but continues efforts needed to combat the impacts of climate change. • The NEN, allows migration of species. • The concept of 'building with nature' gives more room to natural processes and biodiversity. • The resilience of the Wadden Sea is improved through restoration of natural habitats.
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity					
11. Protected areas increased and improved	2.5	area NEN, Natura2000	3.1.11	• 164 Natura 2000 sites designated and management plans being developed. • NEN in spatial plans • policy letter 'Forward with nature policy • Nature Pact	Considerable progress has been made on all aspects, though concern exists about the quality of habitat. • The respective 17% and 10% targets for terrestrial and marine protected areas has been achieved. • The NEN, which is still under construction, connects and enlarges the protected areas. • The ecological quality depends also on CFP & CAP.

12. Extinction prevented	1.2.1 1.3.1	• Trends for national red list and non-red list species • Trends of water birds • Conservation status of habitat types and species • Trend in farmland birds • Status in number of environmental bottlenecks	3.1.12	• National Red Lists • policy letter 'Forward with nature policy' • Flora and Fauna Act • Nature Pact	Considerable efforts are carried out to prevent species from extinction. The number of species on several red lists is more or less stable or declining. However still concern about: • The trend in population size of several the red list species is still declining. • Status of many species and habitats is still unfavourable. • Progress on targets like defragmentation and pollution • International cooperation for migratory species
13. Genetic diversity maintained	1.2.2	• Trend in heifer • Risk classification of Dutch farm animal breeds	3.1.13	• Sources of our existence	Though considerable efforts have been carried out to conserve the native livestock breeds and crops, many are still at risk.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services					
14. Ecosystems and services safeguarded	1.1.2	Output TEEB studies	3.1.14	• Natural Capital Agenda Ad IV	Despite the current focus on essential ecosystem services its analyses and valuation is at an early stage, as is the process towards restoration and safeguarding.
15. Ecosystems restored, resilience enhanced	1.2.1 1.3.1	• Trends for target species in terrestrial ecosystems • Trend in forest area	3.1.15	• NEN • EU Water Framework Directive • Delta Program	Current progress is limited and greatly depends on the ability to restore peatlands and to transform them from carbon emitting into carbon sequestering areas.
16. ABS Nagoya Protocol operational			3.1.16	• Protocol signed in 2011 • Green deals on ABS	Considerable progress made and the target is expected to be achieved by 2015.
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building					
17. NBSAPs adopted as policy instrument			3.1.17	• Natuurvisie; • Natural Capital Agenda	With the current national biodiversity policy papers and action plans Aichi-target 17 can be considered to be achieved by 2015.
18. Traditional knowledge respected			3.1.18	• No specific policies available.	No specific progress. The Netherlands have no traditional peoples within its borders. Dutch NGO's take action for people elsewhere in the world.
19. Knowledge improved, shared and applied		• Development NDFF, NEM • Development Database Caribbean Netherlands	3.1.19	• Monitoring through NEM • Storage of data in NDFF. • Nature Conservation Act • Environmental monitoring	The target is very well developed in the Netherlands. Indicators are available on internet. Nature Conservation Act obliges to report on status of nature
20. Financial resources increased			3.1.20		Current actions are in line with the agreements made in COP 11. Aichi-target 20 is collective EU task, but this has yet not resulted in (substantial) increase of sources.

Appendix V.Summary of progress on Aichi-targets, Caribbean Netherlands, Curacao, Aruba and St. Maarten.

Aichi-targets	Caribbean Islands	Indicators used (status and trends)	Policy notes and actions	Progress
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society				
1. Awareness increased	Caribbean Netherlands	High activity of several NGOs and protected area management organisations on nature in general and birds, turtles etc. specifically.	- Ministry EZ works with WWF on sustainable Bonaire project. - CEPA staff and active programs to educate youth in particular.	Reasonable progress
	Aruba	High activity of several NGOs, birds, land park marine park, marine mammals, turtles.	- 'Curason berde' public awareness programm 2009-2011 - Some NGO initiative - DNM website under construction	Reasonable progress
	Curacao	- High activity of several NGOs, land park and research publicised, environmental activism, natural science groups. - Participation of public, and dive industry in lionfish control and monitoring whales. Native inhabitants are much less involved than expat residents and remain a challenge to reach.	Carmabi with annual school program funded by government	Reasonable progress
	St. Maarten	- High activity of several NGOs - Participation of public, hotels and dive industry in lionfish control and nesting sea turtle protection - Public hearings for the new island zoning plan 2015	- Island zoning plan developed by VROM - Plans being drafted and developed in consultation with stakeholders	Reasonable progress
2. Biodiversity values integrated	Caribbean Netherlands		- Mainstreaming biodiversity in all sectors is one of two main targets Nature Policy Plan 2013-2017, and includes 17 strategic actions.	Reasonable progress
	Aruba	Participation of public, and dive industry in lionfish and nesting sea turtle protection	- Attempt in vision plan Nos Aruba 2025, which is now defunct - Research proposal has been sent and is under consideration	Delayed/none
	Curacao	No economic valuation of nature ecosystem service	None, integration has eroded	Delayed
	St. Maarten	Partial economic valuations available for coral reefs and mangrove pond	- shark fishing moratorium in support of dive industry - various plans currently being drafted should include mention of value	Delayed
3. Incentives reformed	Caribbean Netherlands	None	None	None
	Aruba	No economic valuation of nature ecosystem service	None	None
	Curacao	None	None	None
	St. Maarten	None	None	None

4. Sustainable consumption and production	Caribbean Netherlands	None	- Mainstreaming biodiversity in all sectors is one of two main targets Nature Policy Plan 2013-2017, and includes 17 strategic actions. - Monitoring of fisheries on all three islands, especially Saba bank, to enable sustainability - Program with WFF on sustainability Bonaire - Studies sustainable livestock fodder production Bonaire.	Reasonable progress
	Aruba	None	- Recycling purely private initiative - Sustainable energy use government simulated and supported by private initiatives - Annual Green conference in September	Reasonable progress
	Curacao	Limited recycling glass, metals, plastics	None	None
	St. Maarten	No recycling/reuse	Parliamentary motion to ban use of plastic bags but not implemented	None
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use				
5. Habitat loss halved or reduced	Caribbean Netherlands	- Zoning regulations for Bonaire and St. Eustatius - Limited development to maximum altitude at Saba.	- Plans to reduce degradation from overgrazing	Reasonable progress
	Aruba	Physical Development Policy 2009 addresses among other urban development and nature conservation area's	- Arikok National Park legally declared by Ministerial order 2000 - Different other valuable natural habitats have been selected to be protected	Reasonable progress, though marine park delayed
	Curacao		Land-use plan in place but up for review and high development pressure	Reasonable progress
	St. Maarten	Aerial and photo documentation	- Marine park legally designated - Zoning plan on track expected at end of 2014	Worsened
6. Sustainable management of marine living resources	Caribbean Netherlands		- MoC between the islands and the Netherlands on management marine resources. - Fisheries monitoring programs on Saba Bank, St. Eustatius and Bonaire for ecosystem management.	Reasonable progress
	Aruba		None	None
	Curacao		- Fisheries and marine park ordinance laws limit some of the most destructive gears - Participating in EEZ management plan - Enforcement by Coastguard is effective	Delayed
	St. Maarten	Monitoring fishes, conch, marine mammals, seagrasses, turtles, birds by Nature Foundation and EPIC	- Fisheries ordinance also for conch and lobster - Active law enforcement also by Coastguard is effective - Participated in EEZ management plan	Reasonable progress
7. Sustainable	Caribbean		- Mainstreaming biodiversity in all sectors is one of two main targets Nature	Reasonable

agriculture, aquaculture and forestry	Netherlands		Policy Plan 2013-2017, and includes 17 strategic actions. - Plan for fish farm on Bonaire. - Support Min. EZ on sustainable agriculture.	progress
	Aruba	Not applicable	Not applicable	Not applicable
	Curacao	Not applicable	Not applicable	Not applicable
	St. Maarten	Not applicable	Not applicable	Not applicable
8. Pollution reduced	Caribbean Netherlands	Sewerage system and treatment plant put on place on Bonaire.	New environmental law on small scale pollution and oil transhipment.	Reasonable progress
	Aruba	- Three sewage treatment plants in place, Hotel waste-water treated more than 40 years; - Residential waste-water treated since 2007 - Between 35 and 40 % of cardboard, aluminium and ferro metals are recycled	- Aruba wind energy use increased - Green energy plans (Green Aruba) - Private investment in a "waste to energy" plant, to be operational in 2014	Reasonable progress
	Curacao	- Some marine water quality monitoring - Air quality data	Practically no control	Worsened (high lobby to undermine "EOP" land-use plan)
	St. Maarten	- Wide-spread dumping - Insufficient waste-water treatment - Water quality monitoring Nature Foundation	Renewable energy plan to be released	Delayed
9. Invasive alien species prevented and controlled	Caribbean Netherlands	Inventory invasive alien species (IAS) completed.	Strategy on IAS being developed. Control lion fish by protected area authorities.	Big problem, slight progress.
	Aruba	Status inventory of exotic and invasive species of the Caribbean Netherlands	- Lionfish derbies by Marine Park - Boa volunteer Taskforce (not active) - Contribution to Invasive Alien Species strategy development	Reasonable progress
	Curacao	Status inventory of exotic and invasive species of the Caribbean Netherlands	- Lionfish control by Carmabi and divers - Policy development advanced - Participation in Invasive Alien Species Strategy Plan	Delayed
	St. Maarten	Status inventory of exotic and invasive species of the Caribbean Netherlands	- Lionfish control and information campaign by Nature Foundation - Participation in Invasive Alien Species Strategy Plan	Delayed
10. Pressure on vulnerable ecosystems reduced	Caribbean Netherlands		- Waste water plant Bonaire - Measures to decrease overgrazing - Implementation guideline MARPOL - Implementation management plan EEZ - Several protection measures Saba bank	Reasonable progress but many challenges remain.

	Aruba	- Linear park along the coastline with ecologic, social/recreational and climate adaptation function - Economic development (more hotels/residential/commercial)	- Mangroves in some areas are conserved and part of climate adaptations - Grazing and erosion uncontrolled even in Arikok National Park - High levels of recreational disturbance of seabirds and dunes	Worsened
	Curacao	Vegetation mapping	None	Worsened
	St. Maarten	None	None	Worsened
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity				
11. Protected areas increased and improved	Caribbean Netherlands	- Protected terrestrial and marine area. Zoning plans a.o.	- Conservation of biodiversity by improved planning and management of protected areas and species is one of two main targets of Nature Policy Plan 2013-2017 and concerns 15 actions. - Marine park for sharks and sea mammals foreseen in 2014	Achieved
	Aruba	- DCNA management success program - Important Bird Area designations IUCN	- Arikok has legal basis since 2000 - Marine Park Foundation 2010 (no area designated) - Parliament accepts motion to protect San Nicolas Bay tern islands - Parliament accepts motion to protect various Nature areas 2012	Delayed
	Curacao	Monitoring and research	- DCNA management success program - Goat eradication - Important Bird Area and RAMSAR designations - Legal conservation areas (EOP)	Reasonable progress
	St. Maarten	- DCNA management success program - Important Bird Area designations IUCN	- Legal designation of Marine Park based on SPAW implementation - Zoning plan on track	Reasonable progress
12. Extinction prevented	Caribbean Netherlands	NGO's on threatened species like turtles and Yellow-shouldered parrot	- Conservation of biodiversity by improved planning and management of protected areas and species is one of two main targets of Nature Policy Plan 2013-2017 and concerns 15 actions. - Marine reserve for sharks and sea mammals foreseen in 2014.	Big problem, slight progress
	Aruba	- Improvement endangered Caribbean Coot population - Less hunting - Many native plants highly endangered	Bill to protect endangered and iconic species in process	Worsened
	Curacao	- Improvement for endangered Caribbean Coot, sea turtles, blauwduif - Less hunting - Many native plants recovering	Increased threat for habitat loss for largest native mammal the Curacao white-tailed deer	Reasonable progress
	St. Maarten	- Two unique endemic plants searched for but likely extinct - Longterm improvement in endangered Caribbean Coot population - Less hunting	Zoning plan for habitat protection	Reasonable progress

13. Genetic diversity maintained	Caribbean Netherlands	Not applicable	Not applicable	Not applicable
	Aruba	Not applicable	Not applicable	Not applicable
	Curacao	Not applicable	Not applicable	Not applicable
	St. Maarten	Not applicable	Not applicable	Not applicable
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services				
14. Ecosystems and essential services safeguarded	Caribbean Netherlands	TEEB study Bonaire	TEEB studies St. Eustatius and Saba underway.	depends on impact climate change
	Aruba	No studies conducted		Delayed
	Curacao	No studies conducted	Based on land-use plan (EOP)	Delayed
	St. Maarten	Some preliminary orientation studies available	Zoning plan in progress	Reasonable progress
15. Ecosystems restored and resilience enhanced	Caribbean Netherlands	Many efforts to increase resilience of ecosystems, especially coral reefs.	- Conservation of biodiversity by improved planning and management of protected areas and species is one of two main targets of Nature Policy Plan 2013-2017 and concerns 15 actions. - NGO reforestation, goat control, small coral restoration	Progress, but delayed
	Aruba	Mangrove reintroduction on the keys in front Oranjestad harbour	Monitoring mangrove growth	Delayed
	Curacao	A few studies	NGO reforestation, goat control, cat eradication	Reasonable progress
	St. Maarten	No studies conducted	- Mangrove restoration - Small scale coral restoration	Delayed
16. ABS Nagoya Protocol in force and operational	Caribbean Netherlands		Protocol will apply for Netherlands, as well as Caribbean Netherlands.	Reasonable progress
	Aruba	No information	No measures	Delayed
	Curacao	A Nature Management Policy was accepted by Curacao government but has not been reinstated	Policy notes drafted	Delayed
	St. Maarten	No information	No measures	Delayed
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building				
17. NBSAPs adopted as policy instrument	Caribbean Netherlands		Nature Policy Plan 2013-2017 adopted in 2013	Achieved
	Aruba	As part of the draft integrated nature and environment policy	Draft to be discussed in a multi-stakeholders meeting in June 2014	Reasonable progress
	Curacao		- Several park management plans - No nature policy plan	Delayed

	St. Maarten	None	Ministerial working groups and commission at work on nature policy vision	Delayed
18. Traditional knowledge respected	Caribbean Netherlands	Traditional cultural values taken into account to implement nature conservation measures.		Achieved
	Aruba	Local community is invited in multi-stakeholders meetings on nature and environment	- Feedback incorperated in policy and environmental bill - WildAruba Workshop, participation of local community and NGO's	Reasonable progress
	Curacao	Inventory of plant medicinal uses (for Curacao)		Reasonable progress
	St. Maarten	- Inventory of plant medicinal uses (for Saba) - Fishers engaged for traditional knowledge		Worsened
19. Knowledge improved, shared and applied	Caribbean Netherlands	- Biological inventories nature NGO's.	- Strategic action within Nature policy plan 2013-2017. - Caribbean Netherlands Science Institute (CNSI) initiated on St. Eustatius. - Scientific Research program launched by NWO. - Biodiversity Monitoring Strategy foreseen in 2014. - Dutch Caribbean Biodiversity Database under construction.	Reasonable progress
	Aruba	- Dutch Caribbean Biodiversity Database under construction.Only sporadic biological studies	WildAruba Seminar, dissemination of scientific knowledge on flora and fauna of Aruba	Reasonable progress
	Curacao	- Dutch Caribbean Biodiversity Database under construction.Many natural history studies	- Subsidy to Carmabi - DCNA biodiversity database project	Reasonable progress
	St. Maarten	- Dutch Caribbean Biodiversity Database under construction. - Biological inventories by Nature Foundation - EPIC bird monitoring terrestrial and ponds		Reasonable progress
20. Financial resources from all sources increased	Caribbean Netherlands		- Subsidy for implementing Nature Policy Plan 2013-2017 - Budget for research, monitoring, reporting biodiversity. - Subsidy to support nature management. - Subsidy of DCNA trust fund from Ministry of the Interior and Dutch Postcode Lottery	Substantial increase of budgets, but insufficient to cover costs.
	Aruba	- Only minimal structural support for Arikok National Park - Agency financial statements available - Bill for Environmental tax for tourist underway	- Annual subsidy cycle - DCNA trust fund project - Small grant cycle for social and environmental projects	Reasonable progress
	Curacao	- Minimal structural support for nature - agency financial statements available	- Annual subsidy cycle - DCNA trustfund project	Worsened
	St. Maarten	- Only minimal structural support - and fee system, agency financial statements available	- Annual subsidy cycle - Marine park fee system - DCNA trust fund project	Delayed