

# Indicators for the 'Convention on Biodiversity 2010'

Government expenditure on land acquisition and nature development for the National Ecological Network (EHS) and expenditure for international biodiversity projects

A. Gaaff  
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Wettelijke Onderzoekstaken Natuur & Milieu



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Government expenditure on land acquisition and nature development for the National Ecological Network (EHS) and expenditure for international biodiversity projects

## **Fact sheet**

A. Gaaff

R.W. Verburg

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# 1 Main indicators and key messages

## 1.1 General introduction

The indicator on Funding for Biodiversity contains four sub-indicators which taken together give a representative picture of the financial contribution of Dutch public authorities and private organizations for biodiversity conservation in the Netherlands and abroad.

The four sub-indicators are:

- Public expenditure on land acquisition and nature development for the realisation of the National Ecological Network;
- Public expenditure on nature management in the National Ecological Network NEN (in Dutch: *Ecologische Hoofdstructuur* EHS);
- Government expenditure on international nature projects;
- Expenditure of NGO's on international biodiversity projects.

The National Ecological Network is the national long-term project for the conservation of biodiversity by means of the realisation of an area of interconnected nature reserves, thereby increasing the basis for species and promoting exchange between populations. The ultimate aim for the NEN is to cover 728,500 ha. There is a considerable spatial overlap between the National Ecological Network (NEN) and the Natura-2000 areas, as they are being developed in a European context. Apart from a few boundary differences, all Natura-2000 areas fall in their entirety or mainly within the NEN. In many cases, a Natura-2000 site objective is the same as an NEN nature objective for the same area (MNP, 2005; p62).

International projects are the realisation of the Dutch international biodiversity policy. This policy is particularly focused on participation and on influencing the international decision-making process in transferring knowledge, and on supporting activities and programs in other countries. The financial resources to execute the programme, including those for environment and water (ODA: Official Development Assistance), have a budget of around 0.1% of the GDP.

There are several private organisations (NGO's) working in the field of international biodiversity conservation. Apart from that, individuals may contribute to funding for international projects. With regard to the sub-indicator on private expenditure of Dutch organisations and citizens, the three largest organisations have been taken into account: The World Wildlife Fund, Greenpeace and the International Union for the Conservation of Nature.

## 1.2 Main results

The main results on the sub-indicators are summarized as follows; see also Figures 1-4. A table of data is given in Annex 1.

### ***Sub-indicator 1***

- Government expenditure on acquisition of land and, if necessary, conversion into nature area is on the average € 140 million per annum over the period 1990-2010. This amounts to approximately 0.03% of the actual GDP or € 8,60 per capita;

- After a relatively steady period up to 1999, a considerable increase by a factor 2.5 took place, mainly due to a boost in land acquisition (the so-called Nature Offensive). It should be noted that this peak appears after a series of years with strong economic growth;
- After the impulse, expenditure declined again, due to policy measures following economic recession and consequently budget restrictions;
- In the near future, expenditure is expected to rise again, mainly as a consequence of earlier political agreements.

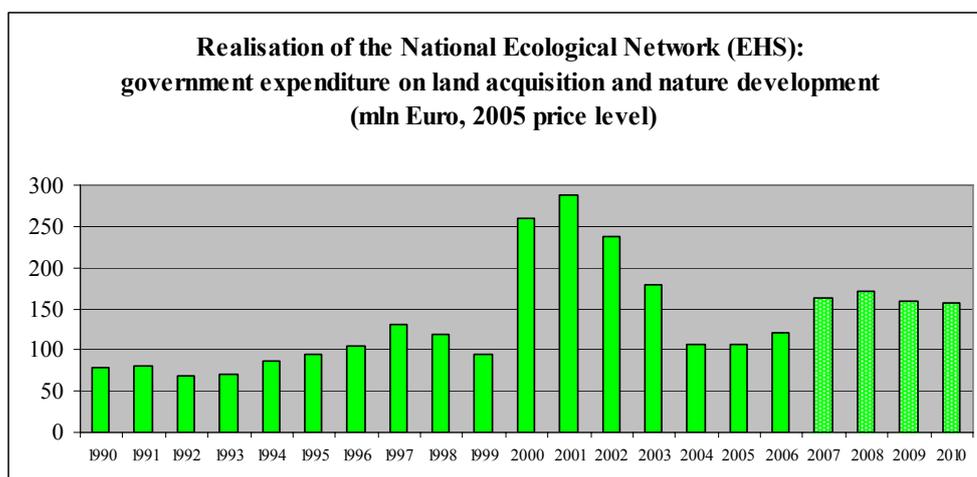


Figure 1. Sub-indicator 1: public expenditure on land acquisition and nature development for the realisation of the National Ecological Network

### **Sub-indicator 2**

- Government expenditure on nature management of the National Ecological Network (NEN) is on the average € 120 million per annum over the period 1990-2010;
- Expenditure and budgets on nature management show a steady increase of about 2,8% per annum (adjusted for inflation);
- In the period 1990-2004, deviations from the trend have little significance. The growth seems to be autonomous, independent of economic climate and political situation;
- From 2005 onward, budgets are foreseen to increase as a consequence of national policy to stimulate (private) nature management at the expense of land acquisition.

### **Sub-indicator 3**

- Government expenditure on international biodiversity conservation have increased during the period 1996-2005 from € 150 million tot € 350 million; the average over the years 1996-2005 is € 260 million (all data at 2005 price level);
- Expenditure on nature shows a clear pattern with the 0.1% GDP target, but in 2001 a deviation can be observed. No clear explanation can be given for this fall;
- For the future, it is expected that budget will continue to be strongly related to GDP, with the 0.1% financial target on ODA<sup>1</sup> expenditure. This means that the upward trend as shown during the period 1996-2005 will level off.

<sup>1</sup> Official Development Assistance

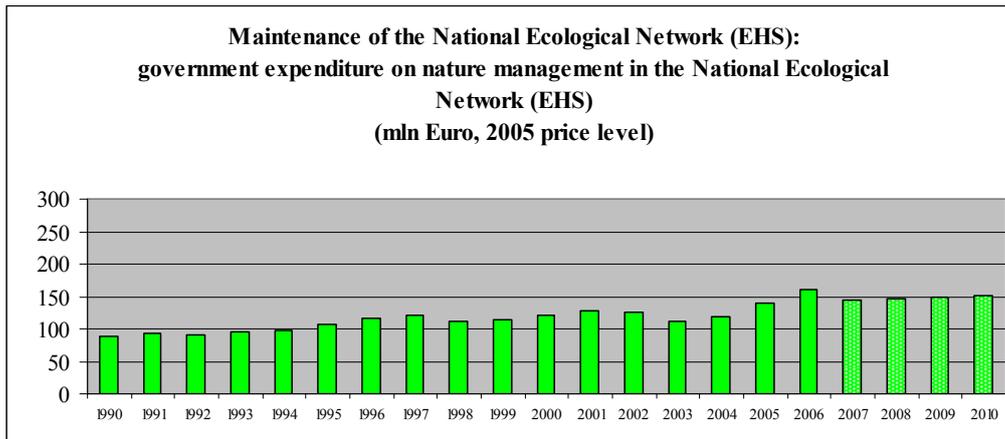


Figure 2. Sub-indicator 2: government expenditure on nature management in the National Ecological Network

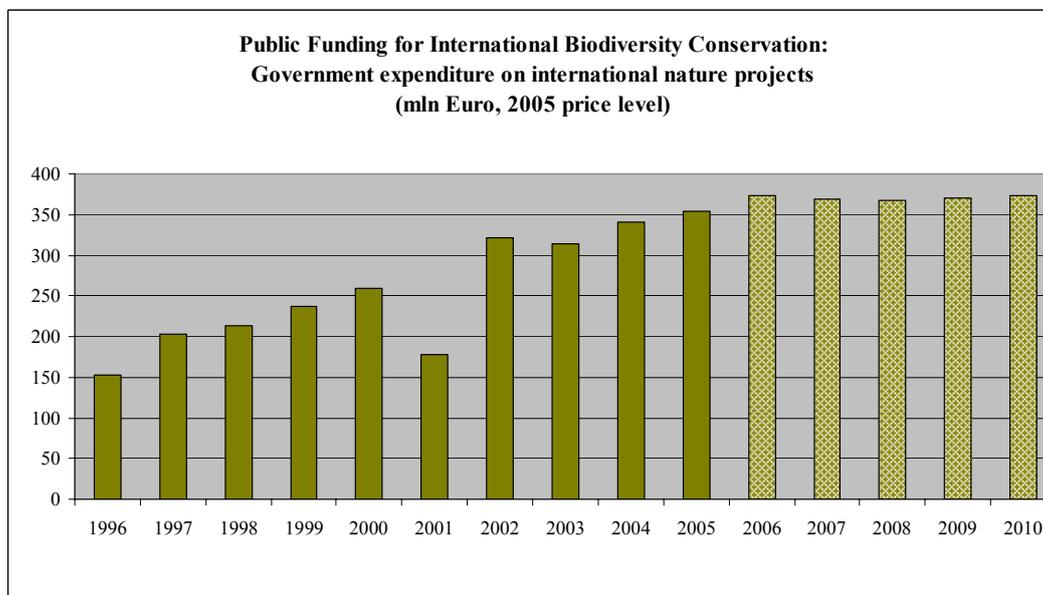
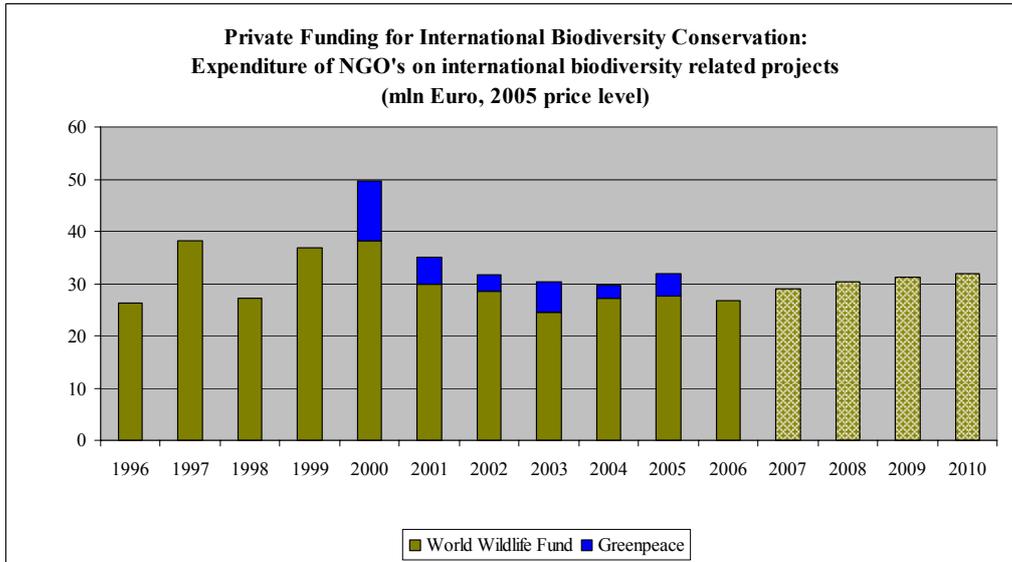


Figure 3. Sub-indicator 3: government expenditure on international nature projects

#### Sub-indicator 4

- Expenditure on international biodiversity by Dutch NGO's show a fluctuating pattern around a level of slightly over € 30 millions per annum (2005 price level). No relation could be found between GDP and private donations to these NGO's.
- For World Wildlife Fund (WWF), the largest amount of expenditure was reached in 1997 (> € 38 million) and the lowest amount in 2003. For Greenpeace, the largest amount was realised in 2000. For WWF there exist a slight correlation between expenditure and GDP growth.
- A projection up to 2010 is difficult to make as the NGO's depend fully on private donations. WWF was able to provide provisional data on expenditure up to 2010. Budgets are expected to increase moderately up to € 31 million in 2010.



*Figure 4. Sub-indicator 4: expenditure on nature outside the Netherlands by the two largest NGO's (World Wildlife Fund and Greenpeace).*

## 2 General description and context

This chapter gives the general description of the four sub-indicators. When necessary a distinction has been made between the sub-indicators. In other cases, for example when there is a common source or temporal coverage, no such distinction has been made, as it will be obvious from the context.

### **Definition**

Sub-indicators 1 and 2: government expenditure in the Netherlands.

Government expenditure for the realisation of the National Ecological Network (NEN (1) and government expenditure for the maintenance of the NEN (2). The first sub-indicator considers the expenditure for the purchase of nature areas and land to be converted into nature (nature development) as well as the development itself. The second sub-indicator considers the expenditure on nature management in the National Ecological Network.

In short, the first sub-indicator measures the investment in nature and landscape, the second sub-indicator is a measure of the annual cost to maintain nature and landscape.

Sub-indicators 3 and 4: expenditure for international environment and nature policy.

Sub-Indicator 3 is a measure of the financial expenditure on nature and biodiversity related topics and projects by the Dutch government worldwide (outside the Netherlands) abroad (?), whereas sub-indicator 4 measures international expenditure made by major NGO's.

### **Policy relevance**

Dutch nature policy in the Netherlands consists of three major elements (LNV, 2002; LNV, 2006):

- Creation of a connected area of large natural reserves, the National Ecological Network (NEN). The idea is to expand the area of interconnected nature reserves, thereby increasing the basis for species and promoting exchange between populations. The final objective is to realise 728,500 ha in 2018;
- Management of nature areas belonging to NEN and outside the NEN;
- Protection of certain species both inside and outside the NEN and the EU Natura-2000 sites.

Approximately two thirds of the national budget for nature and landscape is devoted to realisation and maintenance of the NEN. In 2003, € 280 million was spent on land acquisition and nature development, almost exclusively NEN. A similar amount was spent on nature management, largely inside NEN (MNP, 2005). Expenditure on protection of species is relative small, in the order of € 5-10 million (MNP, 2005). Therefore the first two sub-indicators on land acquisition/development and management are highly relevant for nature policy in the Netherlands.

Furthermore, the NEN project is a major project covering a period of almost 30 years. It started in 1990 and will not be completed before 2018. Monitoring the expenditure on NEN gives good insight into policy progress as well as policy changes. Although a part of nature management, in particular agri-environment schemes, also partly apply outside the NEN, the nature management indicator is chosen to be restricted to NEN for consistency and data collection reasons.

Dutch policy on international biodiversity is expressed in the International Biodiversity Policy Programme (BBI, Beleidsprogramma Biodiversiteit Internationaal). BBI is the successor of the International Nature Management Programme (PIN, Programma Internationaal Natuurbeheer). The BBI programme is a joint cooperation between the six ministries Agriculture Nature and Food Quality, Foreign Affairs, Spatial Planning, Education and Science, Transportation and Economic affairs. Execution of the policy programme is coordinated by an interdepartmental group under the chairmanship of the ministry of Agriculture, Nature and Food Quality. The ministry of Foreign affairs handles the yearly accounts.

The Dutch international biodiversity policy is particularly focused on participation in and influencing of the international decision-making process in transferring knowledge and supporting activities and programs in other countries. The financial resources to execute the programme, including environment and water (ODA), have a budget of around 0.1% of the GDP. The budget includes costs of maintaining the apparatus. For nature no separate financial targets on expenditure are set by the Dutch government. The yearly accounts are depicted in the HGIS-account (Homogeneous Group International Cooperation).

There are several private organisations (NGO's) working in the field of international biodiversity conservation. The three largest organisations have been taken into account for the sub-indicator on private expenditure: The World Wildlife Fund, Greenpeace and the International Union for the Conservation of Nature.

The policy of the World Wildlife Fund (WWF) is to protect biodiversity. Its policy is focused around three major themes:

- To protect and restore natural habitats with special attention to (tropical) forests, wetlands and oceans and coastal zones;
- To combat major threats to ecosystems (deforestation, dried out areas, over-fishing, climate change) and illegal trade of animals and plants;
- To raise awareness of the (Dutch) society by offering financial trade and non-trade perspectives.

The international work of WWF is focused around large international nature protection areas, the so called Global Programme. About 200 areas are selected in the world (eco-regions). Priority is given to forests, oceans and coastal zones, water, endangered plant and animal species and climate. For each topic specific goals are set (WWF year account 2007). In all topics the main goal is to protect biodiversity.

The policy of Greenpeace is, amongst others, to protect oceans and (pristine) forests against illegal logging and illegal trade of forest products. The work of Greenpeace on biodiversity is concentrated in a number of international campaigns on climate change, pristine forests and oceans. Within these campaigns, protection of biodiversity is a major goal.

The International Union for the Conservation of Nature (IUCN) is a coordinating organization of 800 NGO's, 75 national governments, 111 semi-governmental institutions en 10.000 scientists in 181 countries. The foundation Netherlands Committee IUCN is the platform of Dutch members of IUCN. Yearly accounts (from 2000-2005) of the Netherlands Committee are made public. Most of the resources are derived from (governmental) subsidies and only a few from public fund raising. Total expenditure of the IUCN is ca. € 3 million in 2000 to € 5.4 million in 2005. Expenditure of IUCN is not included in the figures, since they are accounted for in the Governmental expenditure figures.

### ***Link to other indicators***

The four sub-indicators are mutually linked, in particular the first two sub-indicators. The first two sub-indicators also have a relation with the indicator Coverage protected areas (indicator 53.4). All indicators are, at a higher level, related to the indicator Public Awareness (indicator 53.12), since they express the willingness to pay, both by public authorities and private organizations or individuals, for biodiversity conservation and/or nature protection.

### ***Limitations***

The sub-indicator for land acquisition shows the policy effort to protect, restore and develop biodiversity *conditions* in the Netherlands, regarded from the *input* side. Since it is recalculated in terms of the 2005 price level, efforts over the complete period from 1990 up to 2010 can be compared.

This sub-indicator roughly contains two components: land purchase and nature development on acquired sites. These two components are not shown separately. So far, the majority of the expenditure has always been on land purchase; only in the period 2007-2009 it is expected to raise (slightly) above 50%.

Furthermore, expenditure for land purchase itself also consists of two components: direct payments to land sellers and interest and instalments on loans of earlier acquisitions. The rate between both can vary from year to year. These details are not shown in the indicator (and are not even consistently visible in the primary data over the whole range of time).

The sub-indicator for nature management is restricted to management *inside the NEN*. This is by far the largest amount of nature management, in accordance with policy objectives. Part of nature management expenditure, however, is spent outside the NEN, in particular on agri-environment schemes. An estimation based on available data from recent years show that an *additional 22%* is spent on management outside the NEN. Data for the period before 2004 on this subject are uncertain.

This sub-indicator shows *public* money spent on nature management inside the NEN. It therefore measures the efforts made by the State to maintain the quality of the NEN and hence the conditions for biodiversity. *Private* expenditure on nature management is not contained in the indicator. However, private land owners, including farmers, are largely subsidised by the government for nature management activities; these subsidies *are included*, as well as EU contributions transferred by the national government. Strictly private expenditure therefore is excluded, also because it is unknown whether it is spent inside or outside the NEN. Since the subsidy regulations for nature management are widely applied, it can be assumed that ignoring direct private expenditure on nature maintenance introduces only a minor bias.

It should be noted, however, that both sub-indicators do not show *immaterial* efforts, such as legislation, enforcement and other costs generally referred to as 'overhead'. Also transaction costs made by public services and private parties and activities performed by volunteers are not taken into account.

Regarding the third sub-indicator, it should be realised that general policy objectives in international issues are usually materialised through specific projects. The ministries of Agriculture, Foreign Affairs and Spatial Planning all have specific policies on nature, biodiversity and environment. Within Agriculture the International Nature Management Programme set targets on nature and biodiversity related topics, while the Ministry of Foreign affairs works on the governmental position on tropical rain forests (*Regeringstandpunt*

*Tropisch regenwoud*). The yearly so-called HGIS-account<sup>2</sup> does not differentiate between projects devoted to nature, environment and water. For example, a water related project could address water sanitation in which no biodiversity topic is included, while in another project a watershed area is protected in which some nature and biodiversity related topic is dealt with. Furthermore, it is difficult to differentiate between financial resources spent on the specific topic and that spent on apparatus. As a whole a differentiation can be made between the costs of (ministerial) apparatus in contrast to costs of projects. Within projects costs of maintaining apparatus can not be made.

The published yearly accounts of WWF (1999-2005) contain a balance for expenditure on biodiversity in foreign countries. After consultation with the head of finance of WWF only budgets of projects outside NL are considered as biodiversity funding outside the Netherlands. These values cannot be derived easily from the yearly accounts, but were made public for this research.

Expenditure on biodiversity related issues of Greenpeace were derived from the year accounts 2000-2005. Budgets were lumped on the four mentioned international campaigns (*i.e.*, forests, climate change, oceans). From these values no precise figure can be given on the expenditure on biodiversity, on other topics related to these campaigns or on maintaining apparatus. Expenditure of Greenpeace therefore must be considered as gross biodiversity funding.

#### ***Use of the indicator in other frameworks/assessments/reporting obligations***

Part of the first two sub-indicators have been presented in the Annual Nature Balance (*Natuurbalans*) of the Netherlands Environmental Assessment Agency (MNP, 2005), with data known until 2003 and not explicitly for NEN. The other sub-indicators have not been used prior to this assessment.

#### ***Match with global (from CBD) and European (from SEBI 2010 project) indicator chosen under this topic***

This topic has not yet been considered.

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<sup>2</sup> HGIS: (Homogeneous Group International Cooperation).

### 3 Assessment

#### ***Historical trends***

Government expenditure on acquisition of land and, if necessary, conversion into nature area is on the average € 130 million per annum over the period 1990-2005. There is, however, a large variation around this average, ranging from € 70 million to € 290 million. After a relatively steady period up to 1999, a considerable increase took place during the years 2000-2003. Budgets and actual payments raised by a factor 2,5, mainly due to a boost in land acquisition (the so-called Nature Offensive). It should be noted that this peak appears after a series of years with strong economic growth. After the impulse, expenditure declined due to policy measures following economic recession and consequently budget restrictions.

Government expenditure on nature management of the National Ecological Network (NEN) is on the average slightly above € 110 million per annum over the period 1990-2005. Expenditure and budgets on nature management show a steady increase of about 2,7% per annum (adjusted for inflation). In the period 1990-2004, deviations from the trend have little significance. The growth appears to be autonomous, independent of economic climate and political situation. From 2005 onward, budgets are foreseen to increase as a consequence of national policy to stimulate (private) nature management at the expense of land acquisition.

Government expenditure on international biodiversity conservation have increased during the period 1996-2005 from € 150 million tot € 350 million. In the year 2001 expenses were significantly lower; the average over the years 1996-2005 is € 260 million. The upward trend appears to have come to an end (see below). From 1996 to 2005 the financial target of 0.1% of GDP expenditure on Official Development Assistance (ODA) environment, water and nature was not met (see HGIS-accounts). The lowest value of 0.08% was met in 1996, while in 2006 expenditure will be above 0.1% (0.103%). Within ODA environment the calculated amount of budget devoted to nature was about € 205 million in 1996 and increased up to about € 370 million in 2005 (all values indexed to 2005 price level).

Expenditure by NGO's over a period of more than 10 years is only available for WWF. The average is about € 30 million per annum (in 2005 price level), with some fluctuations. From the time-series it can be deduced that the largest amount of expenditure was reached in 1997 (> € 38 million) and the lowest amount in 2003. There appears to exist a slight correlation between expenditure and GDP growth ( $R^2 = 0.64$ ). No relation could be found between GDP and private donations to these NGO's. Both WWF and Greenpeace do not have financial targets, since they solely depend on private donations.

#### ***Ex-ante evaluation***

An amount of € 140 million (the average over the period 1990-2010) for land acquisition corresponds to approximately 14% of the total national expenditure (public and private) on nature and landscape in the Netherlands in 2003 (MNP, 2005). It also corresponds to 0.03% of the actual GDP of € 8,60 per capita. In the near future, expenditure is expected to rise again, mainly as a result of earlier political agreements; the share of nature development (land conversion) in the total expenditure will rise from 29% in 2004 to 52% in 2010.

Expenditure on nature management of the National Ecological Network is expected to increase according to the trend at a rate of approximately 2.7% per annum.

The budget on ODA environment strongly depends on policy decisions. However, it is expected that budget will continue to be strongly related to GDP, with the 0.1% financial target on ODA expenditure. Interviews with policy advisors at the ministry of Foreign Affairs point out that the 0.1% should be met in forthcoming years (in contrast to 1996 for instance when 0.08% was spent on ODA). Budget projections indeed show this target will be met from 2007 to 2010 onwards. This means that the upward trend as shown during the period 1996-2005 will level off. Within ODA environment, the allocated amount of budget devoted to nature will decrease a bit due to policy decisions.

For the NGO expenditure, a projection up to 2010 is difficult to make as it fully depends on private donations. Nevertheless, WWF was able to provide provisional data on expenditure up to 2010. Budgets are expected to increase moderately up to € 31 million in 2010. For Greenpeace no projections could be made.

## 4 Technical Background

### 4.1 Data

#### **Data source**

The main data sources for the sub-indicators on the National Ecological Network are the annual budget publications of the Ministry of Agriculture, Nature and Food Quality<sup>3</sup>. Apart from the Budget publication (*Begroting*), showing the expected expenditure for a particular year and the next four years, an annual report (*Jaarverslag*) is published, showing in retrospective the actual amount spent. In principle, these figures are also presented as reference data in the budget for the next two years. Therefore, in general data for year  $n$  were derived from the budget publication for year  $n+2$ , giving the most actual value. For the period 2007 and later, evidently only expected values were available. A detailed table of the sources used is shown in Annex 2.

Governmental expenditure on international nature and biodiversity related topics were derived from the annual HGIS-accounts. In addition, interviews were held with policy advisors of the ministry of Foreign Affairs. Based on these interviews it was concluded that the derived values from the HGIS accounts do not fully suffice, since these figures do not make a distinction between expenditure on environment, nature and water. The project database MIDAS<sup>4</sup> of the Ministry of Foreign Affairs includes all ongoing projects within ODA. It was this database that was taken as a primary source. The calculations necessary to obtain the third sub-indicator will be described below (description of data).

Private expenditure was derived from annual accounts (Greenpeace) and from interviews (WWF).

#### **Description of data**

For the period 1990-1994, the data for the first two sub-indicators for year  $n$  were derived from the budget publication for year  $n+2$ . Table 1 (next page) shows the relevant items and the allocation to land acquisitions and nature development on the one hand side and to nature management on the other.

Although it was not obvious that category 4.04 (*Natuurbeheer*, Nature management) was strictly NEN, it has been attributed completely to land purchase and nature development in the NEN. In the period before 1994, the land purchase expenditure made by the State Forest Management Organisation (*Staatsbosbeheer*, SBB), was not published separately in the annual budget of the Ministry of Agriculture, Nature and Food Quality. They have been estimated on the basis of known data for the period 1994-1997. It is assumed, that all land purchased by SBB belongs to the NEN.

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<sup>3</sup> During the period 1990-1996 the name of the Ministry showed several slight changes, ranging from Agriculture, Nature Management and Fisheries via Agriculture, Nature Management and Food Quality to Agriculture, Nature and Food Quality.

<sup>4</sup> MIDAS: Management Inhoudelijk Documentair Activiteiten Systeem

Table 1. Budget categories for the period 1990-1995

Budget item	Land acquisition and development (a) or management (m)
04.03.01 Relatienota (*)	m
04.03.02 Verwerving (rente+aflossing)	a
04.03.03 Natuurontwikkeling	a
04.03.04 Natuurbeheer	m
04.03.05 Nationale parken	m
04.03.06 Soortenbescherming en faunabeheer	m
04.03.07 Algemeen natuurbeleid	m
04.04 Bos- en landschapsbouw	a
04.05.07 Integraal Structuurplan Noorden des Lands (1990 only)	a

(\*) this item accounts for expenditure on the so-called RBO/RBON subsidies (until 2000)

For the management expenditure made by SBB, no overall data and *a fortiori* no data for NEN were available in the budget information before 1996. Therefore, they have been estimated on the basis of the development of the overall management budget for SBB in the period 1996-1999. This has been corrected for the share of nature management in the total management expenditure of SBB (estimated 50% from the known 1999 and 2000 data; the other 50% is spent mainly on recreation and education services).

In 1996, the budget categories were drastically redefined in comparison with 1990-1995. Furthermore, they are also different from the categories used since 2002. Therefore, a conversion operation has been performed to fit the 1996-1999 data into the categories used from 2002 onwards. The transfer rates from the 1996-1999 categories to the 2002+ categories in the year 2002 were assumed to be constant for the whole period 1996-1999. This is an approximation, but as no other data were available, it was the only possible way to build a time series.

Again, the primary data for year  $n$  have been derived from the budget publication for year  $n+2$ . A total of 30 categories have been included in building the indicators. These categories are similar to those given in Table 1 and shown in Annex 3.

For the period 2002-2006, data could be derived directly from the annual reports. In some case, it appeared that some data had been slightly adjusted in annual reports of later years. This could be described to a minor redefinition of the categories in 2006. In those cases, the most recent annual reports have been used.

All values are monetary units (€) on a nominal base. These nominal financial values were indexed to the 2005 price level, using the index shown in Annex 4.

The basis for the third sub-indicator is the MIDAS database. In this database a distinction between environment, nature and water can relatively easy be made. However, not all expenditure is covered by the database. To calculate the total expenditure on nature two calculation steps were performed. First the total expenditure on projects devoted to environment, water and nature was subtracted from the MIDAS database for each year (1996-2006). From this subtraction expenditure on all nature related projects was derived. The fraction of expenditure on nature relative to the total expenditure (nature + water + environment) was calculated. This fraction resulted in an allocation parameter (%). This allocation parameter varied between years, ranging from 42% (2001) up to 77% (2002). This

means that the total expenditure on nature (within the project database) ranged from 42% up to 77% of the total expenditure. Then this allocation parameter was multiplied with the 0.1% ODA expenditure target depicted in the HGIS-accounts. The resulted value is the estimated expenditure on nature.

In this calculation method it is assumed that the fraction 'nature' versus 'environment + water + nature' in the MIDAS project database is equal to the fraction of 'total ODA expenditure on nature' versus 'total ODA expenditure on environment + water + nature' in the HGIS-accounts. The difference between the expenditure on nature in the project database and the calculated expenditure based on the 0.1% ODA target (€ 44 million in 1997 to € 166 million in 2005) is caused by, amongst others, contributions to UN organizations on nature and subsidies to NGO's. These contributions are not implemented in the MIDAS project database.

Expenditure on biodiversity related issues of Greenpeace (2000-2005) were derived from the annual accounts 2000-2005. These annual accounts only give values expended by the type of campaign. These campaigns are defined such as "forests", "toxic waste", "oceans", "nuclear power" and so on. Budgets were lumped on three mentioned international campaigns (*i.e.*, forests, climate change, oceans). From these values no precise figure can be given on the expenditure to biodiversity, to other topics related to these campaigns or on maintaining apparatus. Expenditure of Greenpeace therefore must be considered as gross biodiversity funding.

Expenditure on nature and biodiversity by World Wildlife Fund (WWF) is also described in their annual accounts. Also here, no direct relation with expenditure outside the Netherlands could be made. An interview with the head of finance of WWF in the Netherlands, Mr. P. Vooijs led to a annual list of expenditure of WWF in the Netherlands to biodiversity and nature projects outside the Netherlands. Thus the figures of WWF between 2000-2005 give accurate values on expenditure while the values between 2006-2010 are rough estimates on expected income of WWF.

### ***Representativeness of the variables used***

The NEN is the national long term project for the conservation of biodiversity by means of the realisation of an area of interconnected nature reserves. Although there are other specific expenditures on biodiversity, for example species related measures, research and monitoring funds, recreation related measures and nature education programs, NEN forms the focus of the national efforts. Data on investment and maintenance of NEN, the sub-indicators 1 and 2, respectively, can therefore be considered as representative for overall monitoring of public funding for biodiversity conservation in the Netherlands.

The source of the original data are budgets and accounts of the Ministry of Agriculture, Nature and Food Quality, which is the ministry responsible for the realisation of the NEN. Contributions of other Departments are not included, as they will primarily concern other (*i.e.* non-EHS) nature, like buffer zones, cultural history, eco-passages, etc.

The governmental expenditure on international biodiversity represents those values that are managed by the ministry of Foreign Affairs. Within the presented figures expenditure by the ministry of Agriculture is included. It is not known if other governmental organizations have major nature expenditure outside the Netherlands. It is assumed that the values presented in the HGIS-accounts represent the whole governmental budget on nature policies outside NL.

The data on NGO's are representative as far the particular organisation is concerned. Taken together, WWF and Greenpeace are considered as representative for the private international expenditure.

### ***Geographical coverage***

All expenditure on NEN is made in the Netherlands.

The values on the governmental and NGO expenditure on international nature and biodiversity cover those of Dutch organisations. Most governmental projects (but not all) are located in the tropical regions. The same can be said for the WFF projects. Safely stated, the expenditure on biodiversity and nature is made on a global scale.

### ***Temporal coverage***

The NEN data cover the time period 1990-2005 with budgetary estimates from 2007 to 2010. The data on international biodiversity cover the time period 1996-2006 with budgetary estimates from 2007 to 2010.

### ***Data collection: methods, number of samples, frequency of sampling etc.***

NEN data have been collected by desk research from annual accounts and budgets. Data on international biodiversity were collected from annual accounts and interviews.

### ***Bias and gaps in the sampling***

At two instants during the period 1990-2006, the categories in the budget publication were more or less drastically redefined, in 1995 and in 2002<sup>5</sup>.

For 2000 and 2001, the realisations could be traced back from the 2002 and 2003 budget publications; therefore the categories used during the period 2000-2010 are consistent. The data for the period 1996-1999 were calculated by means of a conversion table from the annex to the budget publication 2002.

For the year 1995, the data had to be reconstructed by interpolation, since no realisation data were available from the budget publications in later years. For the period 1990-1994, realisation data were available, but they had to be recalculated into the categories used today. This has been described above in detail in the section 'description of data'.

In principle, data for nature management refer to NEN only. For the period up to 2000, a part of the agri-environment scheme expenditure could be spent within the NEN area, without explicit visibility in the accounts. This could not be repaired in the calculations.

The presented values on international governmental expenditure on nature are estimated values. For the period 1996-2005 these values can be considered as solid. However, the presented values in the time slice 1996-2010 are much weaker. Firstly, it is assumed that the ODA target of 0.1% GDP remains the same during the 1996-2010 census. Secondly, the GDP values are estimates calculated by the CPB. Thirdly, it is assumed that the fraction of expenditure on nature in ODA will further decline while expenditure on water will increase. Thus, it is assumed that the allocation parameter that describes nature expenditure, as described above, will have lower values in the 1996-2010 census. While this value was 71% in 2005, it is assumed this will drop to 67% in 2010. In conclusion, the estimates for the 2006-2010 census period are based upon two assumptions, firstly, on the assumption that ODA

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<sup>5</sup> A third, less drastic redefinition took place in 2006, with minor effects on the calculation of the values for 2006-2010.

expenditure remains at the 0.1% GDP target, and secondly, on the assumption that the fraction of ODA expenditure to nature drops from 71% in 2005 to 67% in 2010 due to increased policy attention towards water. It is unclear however, how these uncertainties are propagated throughout these figures.

Figures on private expenditure on biodiversity and nature are derived from annual accounts of NGO's. While the accounts of WWF aggregates to the level of expenditure in foreign countries, the accounts of Greenpeace as such do not. Additional information from WWF revealed that the data in the accounts should be adapted. After adjustment, the data presented are actual expenditures on the indicator at study. For Greenpeace this information was not available. The data must therefore be seen as gross values. Actual expenditure on biodiversity would probably be lower. Data on the census period 1996-1999 is missing as for estimations up to 2010.

### ***Data quality***

The government expenditure for NEN are official data from the Ministry of Agriculture, Nature and Food Quality, the government body responsible for the realisation and management of the NEN. All primary NEN data published in annual reports (and copied as reference data in budgets for later years) are official data, rounded up to thousands of Euro. Data for 1990-1999 were published in thousands of HFL and converted to Euro at the official rate (1 EUR = 2,20371 HFL). Annual reports have been decreed by an Act of Parliament ('Slotwet') after being subject to the assessment of the Court of Audit. Calculations on the primary data might introduce some uncertainties, in particular as a consequence of the attribution to certain categories, as has been described in the section 'Description of data'.

Quality of the data on international biodiversity has been discussed above.

### ***Potential for updating: monitoring ongoing/ ad hoc surveys***

NEN data for future years become available on an annual basis. In recent years, realised values for year  $n$  are published in the report published in year  $n+1$ , usually in May. In rare cases these data are adjusted in the reference value for the budget data of year  $n+2$ , as published in September of year  $n$ .

Intermediate adjustments for the values of year  $n$  are sometimes published in year  $n$  itself. This happens either on an ad hoc basis at any time, resulting from specific policy arguments (*Nota van Wijziging*), or at the annual budget reconsideration in spring of year  $n$  (*Voorjaarsnota*). In the latter case, the prognosis for future years  $n+2$ , can also be changed.

The conclusion should be, that in general the values can be considered fixed within six months after the end of the year for realised expenditure and can be foreseen up to approximately 5 years for future budgets, with a decreasing precision for more distant years.

None of the figures on governmental and private expenditure on international biodiversity could be derived directly from published year books and other reports. In the case of governmental expenditure specific consultancy with policy advisors at the ministry of Foreign Affairs is needed. However, the presented calculation method can easily be implemented in forthcoming years<sup>6</sup>. The same holds for private expenditure like WWF. Updating values must therefore be checked with the appropriate advisors.

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<sup>6</sup> As a result of the CBD project, contact has been established between the Statistics Netherlands (CBS), LEI and the Ministry of Foreign Affairs. CBS has the intention to adopt the method developed here. If this will be realised, data could be available on an annual or biannual basis.

### ***Responsible organisation/person for data collection***

Primary data for NEN are published by the Ministry of Agriculture, Nature and Food Quality. The legal basis for publication is the Accounting Act (*Comptabiliteitswet*). Calculations on data using the methodology presented here have been performed by the Agricultural Economics Research Institute (LEI).

For governmental expenditure on international biodiversity, the department of Foreign affairs is the main holder of information. Specific projects, like BBI-MATRA, are coordinated by the Ministry of Agriculture. This Ministry also holds track of ongoing projects and henceforward expenditure on biodiversity and nature. The budget for BBI-MATRA is about € 3 million per year.

### ***Owner and custodian of data***

See above. Primary data on NEN are public. For governmental expenditure on international biodiversity, the owner and custodian of data is the Ministry of Foreign Affairs. For NGO's (WWF, Greenpeace) the responsible heads of finances are owners.

## **4.2 Methods**

### ***Procedure of data processing (including software used)***

Data processing for historical values for NEN has been described in detail in the section 'Description of data', presented above. For future values in principle no processing on the primary data will be necessary if the items mentioned in Annex 2 are used. Only in cases where budget and accounts categories are redefined, additional calculations might be necessary. Technical processing of data has been taken place in Excel spreadsheets.

No particular external reference values have been used, apart from GDP: € 450 000 million (2003), population: 16.2 million and total money flow for nature and landscape in The Netherlands in 2003: € 1 000 million (MNP, 2005). All units are in million Euros indexed to the price level year 2005, by means of the index values of Annex 4. Values before 2001 have been converted to Euros with the official conversion factor 1 EUR = 2.20371 HFL.

For historic data, several calculations on the primary data were necessary to build a consistent time series. These calculations are mainly related to conversion of budget categories. Assumptions and restrictions have been indicated.

For the data on international biodiversity, all data are derived from year accounts complemented with interviews. The monetary values were derived on a nominal basis. In Excel all nominal values were indexed to the 2005 reference year, by means of the index values of Annex 4.

### ***Assumptions***

For the NEN data, see the section 'Description of data'.

For governmental expenditure on international biodiversity, it was assumed that the ODA accounts on nature include budgets spend on NGO's (like IUCN) and budgets devoted to programs like BBI-MATRA (ministry of Agriculture). The allocation parameters that account for budgetary expenditure on nature were calculated by cross referencing the MIDAS database of

the ministry of Foreign Affairs with the HGIS-accounts and by expert knowledge. For the latter part, errors may be made, but uncertainties on this parameter cannot be made. With regard to the projections up to 2010 the allocation parameters could only be established with expert knowledge, knowing that expenditure on water will increase over the coming years (official governmental policy on water) at the expense of nature. Achieved values on nature expenditure can therefore differ in the coming years as compared to values presented in Figure 3 (see Par. 1.2)

For Greenpeace it was assumed that budget spent on campaigns, like oceans, forests etc, could be regarded as expenditure on nature outside the Netherlands. This assumption was made because the annual accounts did not distinguish between budget expenditure inside and outside the Netherlands.

***Person responsible for calculations***

A. Gaaff, LEI (sub-indicators 1 and 2) and R. Verburg, LEI (sub-indicators 3 and 4).

### **4.3 Other**

***Costs***

The costs for data collection and calculations are labour costs linked with the retrieving of data presented in this study. No charges have been made for the primary data themselves; neither was it necessary to have surveys or monitoring activities.

***Future development***

No fundamental changes are foreseen at the moment. Possible (minor) changes could arise if the Statistics Netherlands (CBS: *Centraal Bureau voor de Statistiek*) incorporates the international expenditure data in its database.

Finally, if new international standards for expenditure for nature would be developed, this could have an influence on the indicators.

***Consulted experts/stakeholders on indicator development, results, interpretation***

Ministry of Finance: J.A. van Dommelen

Ministry of Foreign Affairs: L. van der Hoeven and M. Dadema (policy advisors)

WWF: P. Vooijs (head of finance)

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## Annex 1 Tables of results

*Nominal and indexed values (2005 price level) for the indicators 'government expenditure on land acquisition and nature development for the National Ecological Network (EHS)' and 'government expenditure on nature management in the National Ecological Network (EHS)'.*

Year	Land purchase and development, mln €		Nature management, mln €	
	nominal	2005 price level	nominal	2005 price level
1990	56.613	78.169	63.724	87.987
1991	59.550	79.983	68.860	92.489
1992	52.796	69.183	69.072	90.510
1993	54.234	69.948	73.197	94.405
1994	68.138	86.157	77.296	97.737
1995	76.604	95.149	86.056	106.890
1996	85.069	104.103	94.817	116.031
1997	109.131	130.609	102.011	122.087
1998	101.375	118.715	96.126	112.568
1999	82.909	95.561	99.546	114.737
2000	231.524	259.084	108.359	121.258
2001	267.589	288.202	119.120	128.296
2002	225.836	237.069	118.576	124.474
2003	174.239	178.444	109.977	112.631
2004	104.568	106.137	116.784	118.536
2005	107.043	107.043	139.491	139.491
2006	122.453	120.052	164.817	162.585
2007	170.165	163.557	150.938	145.077
2008	181.836	171.348	156.424	147.402
2009	172.739	159.584	162.201	149.849
2010	173.751	157.372	166.540	150.840

*Nominal and indexed values (2005 price level) for the indicators 'Government expenditure on international nature projects' and 'Expenditure of NGO's on international biodiversity related projects'.*

Year	Government expenditure, mln €		NGO expenditure, mln €			
	Nominal	2005 price level	World Wildlife Fund		Greenpeace	
			Nominal	2005 price level	Nominal	2005 price level
1996	124,631	152,516	21,456	26,256		
1997	170,105	203,583	31,976	38,269		
1998	182,514	213,732	23,170	27,133		
1999	205,691	237,081	31,891	36,758		
2000	231,265	258,794	34,051	38,104	10,310	11,663
2001	165,403	178,144	27,774	29,913	4,710	5,128
2002	305,763	320,972	27,126	28,475	3,055	3,242
2003	306,218	313,609	23,831	24,406	5,657	5,885
2004	335,287	340,316	26,769	27,171	2,459	2,508
2005	353,977	353,977	27,580	27,580	4,332	4,332
2006	380,220	372,764	27,300	26,765		
2007	383,114	368,237	30,100	28,931		
2008	390,540	368,015	32,160	30,305		
2009	401,200	370,647	33,730	31,161		
2010	412,050	373,206	35,300	31,972		

## Annex 2 Sources and calculation method of the NEN expenditure

Year	Source	Item land purchase and development	Calculation	Source	Item nature management	Calculation
1990	LNV, Begroting 1992	'Natuur', various items	See description of data	LNV, Begroting 1992	'Natuur', various items	See description of data
1991	LNV, Begroting 1993			LNV, Begroting 1993		
1992	LNV, Begroting 1994			LNV, Begroting 1994		
1993	LNV, Begroting 1995			LNV, Begroting 1995		
1994	LNV, Begroting 1995			LNV, Begroting 1995		
1995	LNV, Begroting 1995, 1998		Interpolation 1994, '96	LNV, Begroting 1995, 1998		Interpolation 1994, '96
1996	LNV, Begroting 1998		See description of data	LNV, Begroting 1998		See description of data
1997	LNV, Begroting 1999			LNV, Begroting 1999		
1998	LNV, Begroting 2000			LNV, Begroting 2000		
1999	LNV, Begroting 2001			LNV, Begroting 2001		
2000	LNV, Begroting 2002	None		LNV, Begroting 2002	'Beheer van de EHS'	
2001	LNV, Begroting 2003		LNV, Begroting 2003			
2002	LNV, Jaarverslag 2004		LNV, Jaarverslag 2004			
2003	LNV, Jaarverslag 2006		LNV, Jaarverslag 2006	'Beheer EHS'	None, however, see (*)	
2004	LNV, Jaarverslag 2006		LNV, Jaarverslag 2006		None, however, see (*)	
2005	LNV, Jaarverslag 2006		'Verwerving droge EHS' + 'Verwerving natte EHS' + 'Inrichting droge EHS' + 'Inrichting natte EHS'	LNV, Jaarverslag 2006	None, however, see (**)	
2006	LNV, Jaarverslag 2006			LNV, Jaarverslag 2006		None
2007	LNV, Begroting 2007			LNV, Begroting 2007		
2008	LNV, Begroting 2007			LNV, Begroting 2007		
2009	LNV, Begroting 2007			LNV, Begroting 2007		
2010	LNV, Begroting 2007	LNV, Begroting 2007				

(\*) This value differs from the Jaarverslag 2004 data; (\*\*) This value differs from the Jaarverslag 2005 data



### Annex 3 Budget categories included for the period 1996-1999

All categories shown in the following table were used, together with the given fractions for the categories Land purchase and development for NEN and Nature management NEN.

Budget item	Fraction assigned to land acquisition and nature development NEN (*)	Fraction assigned to nature management NEN (*)
13.02.01 Aankopen t.b.v. SBB	76,8%	0,4%
13.02.02 Overige staatsaankopen	76,8%	0,4%
13.02.03 Natuurterreinen en reservaten	76,8%	0,4%
13.02.04 Natuurontwikkeling	76,8%	0,4%
13.03.01 Landinrichtingskosten	12,9%	0,0%
13.03.02 Waterbeheersing	12,9%	0,0%
13.03.03 Gebiedsgerichte bestrijding van verdroging	12,9%	0,0%
13.03.04 Recreatie (inrichting)	12,9%	0,0%
13.03.05 Natuurterreinen en reservaten	12,9%	0,0%
13.03.06 Bosaanleg	12,9%	0,0%
13.03.07 Landschap (inrichting)	12,9%	0,0%
13.03.08 Overig	12,9%	0,0%
13.04.01 Rijkssubsidie SBB	0,0%	69,4%
13.04.02 Recreatie (beheer)	0,0%	69,4%
13.04.03 Bos	0,0%	69,4%
13.04.04 Natuur	0,0%	69,4%
13.04.05 Landschap (beheer)	0,0%	69,4%
13.04.06 Herstelbeheer	0,0%	69,4%
13.04.07 Nationale parken	0,0%	69,4%
13.04.08 Relatienota	0,0%	69,4%
13.04.09 Overig (beheer)	0,0%	69,4%
13.04.10 Programma Beheer	0,0%	69,4%
13.05.01 Recreatie (overige subsidies)	3,1%	15,0%
13.05.02 Bos (overige subsidies)	3,1%	15,0%
13.05.03 Natuur (overige subsidies)	3,1%	15,0%
13.05.04 Soortenbescherming en faunabeheer	3,1%	15,0%
13.05.05 Gebiedsgericht beleid	3,1%	15,0%
13.05.06 WCL-projecten	3,1%	15,0%
13.05.07 Stimuleringskader vernieuwing van het Landelijk gebied	3,1%	15,0%
13.05.08 Overige	3,1%	15,0%

*(\*) it should be noted, that the sum of these percentages is not 100%. This is due to the fact that part of the expenditure in the categories for 1996-1999 appeared not to be related to land purchase/nature development for NEN or nature management in the NEN areas.*



## Annex 4 Price index values

The index values were taken from the EOCED GDP deflator up to 2006 and fixed for 2006-2010.

Year	OECD GDP deflator	OECD index (2005=1)	year	OECD GDP deflator	OECD index (2005=1)
1990	2,3	1,3807	2000	3,0	1,1190
1991	2,8	1,3431	2001	3,9	1,0770
1992	2,5	1,3104	2002	2,6	1,0497
1993	1,6	1,2897	2003	2,5	1,0241
1994	2,0	1,2645	2004	0,9	1,0150
1995	1,8	1,2421	2005	1,5	1,0000
1996	1,5	1,2237	2006	2,0	0,9804
1997	2,25	1,1968	2007	2,0	0,9612
1998	2,2	1,1710	2008	2,0	0,9423
1999	1,6	1,1526	2009	2,0	0,9238
2000	3,0	1,1190	2010	2,0	0,9057

Sources: *OECD Economic Outlook 2003*:

<http://www.oecd.org/publications/outlook68/ eo/en/pdf/eo68-2-nl.pdf> (values 1990-2002);

<http://www.oecd.org/dataoecd/6/35/20213240.pdf> (values 2003-2006); values 2006-2010 were fixed at 2.0.

## Indicators for the Convention on Biodiversity 2010

In de reeks 'Indicators for the Convention on Biodiversity 2010' zijn de volgende documenten verschenen (*In the series 'Indicators for the Convention on Biodiversity 2010' the following documents have been published*):

### 2007

- 53.1** *Reijnen, M.J.S.M.* National Capital Index version 2.0
- 53.3** *Windig, J.J., M.G.P. van Veller & S.J. Hiemstra.* Biodiversiteit Nederlandse landbouwhuisdieren en gewassen
- 53.4** *Melman, Th.C.P. & J.P.M. Willemen.* Coverage protected areas.
- 53.6** *Weijden, W.J. van der, R. Leewis & P. Bol.* Indicatoren voor het invasieproces van exotische organismen in Nederland
- 53.7a** *Nijhof, B.S.J., C.C. Vos & A.J. van Strien.* Influence of climate change on biodiversity.
- 53.7b** *Moraal, L.G.* Effecten van klimaatverandering op insectenplagen bij bomen.
- 53.8** *Fey-Hofstede, F.E. & H.W.G. Meesters.* Exploration of the usefulness of the Marine Trophic Index (MTI) as an indicator for sustainability of marine fisheries in the Dutch part of the North Sea.
- 53.9** *Reijnen, M.J.S.M.* Connectivity/fragmentation of ecosystems: spatial conditions for sustainable biodiversity
- 53.11** *Gaaff, A. & R.W. Verburg.* Government expenditure on land acquisition and nature development for the National Ecological Network (EHS) and expenditure for international biodiversity projects
- 53.12** *Elands, B.H.M. & C.S.A. van Koppen.* Public awareness and participation

# Wot-onderzoek

## Verschenen documenten in de reeks Werkdocumenten van de Wettelijke Onderzoekstaken Natuur & Milieu

Werkdocumenten zijn verkrijgbaar bij het secretariaat van Unit Wettelijke Onderzoekstaken Natuur & Milieu, te Wageningen. T 0317 – 47 78 44; F 0317 – 41 90 00; E [info.wnm@wur.nl](mailto:info.wnm@wur.nl)  
De werkdocumenten zijn ook te downloaden via de Wot-website [www.wotnatuurenmilieu.wur.nl](http://www.wotnatuurenmilieu.wur.nl)

### 2005

- 1 *Eimers, J.W.* (Samenstelling). Projectverslagen 2004.
- 2 *Hinssen, P.J.W.* Strategisch Plan van de Unit Wettelijke Onderzoekstaken Natuur & Milieu, 2005 – 2009.
- 3 *Sollart, K.M.* Recreatie: Kennis en datavoorziening voor MNP-producten. Discussienotitie.
- 4 *Jansen, M.J.W.* ASSA: Algorithms for Stochastic Sensitivity Analysis. Manual for version 1.0.
- 5 *Goossen, C.M. & S. de Vries.* Beschrijving recreatie-indicatoren voor de Monitoring en Evaluatie Agenda Vitaal Platteland (ME AVP)
- 6 *Mol-Dijkstra, J.P.* Ontwikkeling en beheer van SMART2-SUMO. Ontwikkelings- en beheersplan en versiebeheerprotocol.
- 7 *Oenema, O.* How to manage changes in rural areas in desired directions?
- 8 *Dijkstra, H.* Monitoring en Evaluatie Agenda Vitaal Platteland; inventarisatie aanbod monitoringssystemen.
- 9 *Ottens, H.F.L. & H.J.A.M. Staats.* BelevingsGIS (versie2). Auditverslag.
- 10 *Straalen, F.M. van.* Lijnvormige beplanting Groene Woud. Een studie naar het verdwijnen van lanen en perceelsrandbegroeiing in de Meierij.
- 11 *Programma Commissie Natuur.* Onderbouwend Onderzoek voor de Natuurplanbureau-functie van het MNP; Thema's en onderzoeksvragen 2006.
- 12 *Velthof, G.L. (samenstelling).* Commissie van Deskundigen Meststoffenwet. Taken en werkwijze.
- 13 *Sanders, M.E. & G.W. Lammers.* Lokaliseren kansen en knelpunten van de Ecologische Hoofdstructuur – met informatie van de terreinbeheerders.
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- 15 *Hinssen, P.J.W.* Wettelijke Onderzoekstaken Natuur & Milieu. Werkplan 2006
- 16 *Melman, Th.C.P., R.G. Groeneveld, R.A.M. Schrijver & H.P.J. Huiskes* Ontwikkeling economisch-ecologisch optimaliseringsmodel natuurbeheer in combinatie met agrarische bedrijfsvoering. Studie in het licht van LNV-beleidsombuiging "van verwerving naar beheer"
- 17 *Vreke, J., R.I. van Dam & F.J.P. van den Bosch.* De plaats van natuur in beleidsprocessen. Casus: Besluitvormingsproces POL-aanvulling Bedrijventerrein Zuid-Limburg
- 18 *Gerritsen, A.L., J. Kruit & W. Kuindersma.* Ontwikkelen met kwaliteit. Een verkenning van evaluatiecriteria
- 19 *Bont, C.J.A. de, M. Boekhoff, W.A. Rienks, A. Smit & A.E.G. Tonnejck.* Impact van verschillende wereldbeelden op de landbouw in Nederland. Achtergronddocument bij 'Verkenning Duurzame Landbouw'
- 20 *Niet verschenen*

### 2006

- 21 *Rienks, W.A., I. Terluin & P.H. Vereijken.* Towards sustainable agriculture and rural areas in Europe. An assessment of four EU regions
- 22 *Knegt, B. de, H.W.B. Bredenoord, J. Wiertz & M.E. Sanders.* Monitoringsgegevens voor het natuurbeheer anno 2005. Ecologische effectiviteit regelingen natuurbeheer: Achtergrondrapport 1
- 23 *Jaarrapportage 2005.* WOT-04-001 – Monitor- en Evaluatiesysteem Agenda Vitaal Platteland
- 24 *Jaarrapportage 2005.* WOT-04-002 – Onderbouwend Onderzoek Natuurplanbureau-functie
- 25 *Jaarrapportage 2005.* WOT-04-385 - Milieuplanbureau-functie
- 26 *Jaarrapportage 2005.* WOT-04-394 – Natuurplanbureau-functie
- 27 *Jaarrapportage 2005.* WOT-04 - Kennisbasis
- 28 *Verboom, J., R. Pouwels, J. Wiertz & M. Vonk.* Strategisch Plan LARCH. Van strategische visie naar plan van aanpak
- 29 *Velthof, G.L. en J.J.M. van Grinsven (eds.)* Inzet van modellen voor evaluatie van de meststoffenwet. Advies van de CDM-werkgroep Harmonisatie modellen
- 30 *Hinssen, M.A.G., R. van Oostenbrugge & K.M. Sollart.* Draaiboek Natuurbalans. Herzien versie
- 31 *Swaay, C.A.M. van, V. Mensing & M.F. Wallis de Vries.* Hotspots dagvlinder biodiversiteit
- 32 *Goossen, C.M. & F. Langers.* Recreatie en groen in en om de stad. Achtergronddocument bij Natuurbalans 2006
- 33 *Turnhout, Chr. Van, W.-B. Loos, R.P.B. Foppen & M.J.S.M. Reijnen.* Hotspots van biodiversiteit in Nederland op basis van broedvogelgegevens
- 34 *Dideren, K en P.F.M. Verdonschot.* Graadmeter Natuurwaarde aquatisch. Typen, indicatoren en monitoring van regionale wateren
- 35 *Wameling, G.W.W., G.J. Reinds, J.P. Mol-Dijkstra, J. Kros, H.J. Wieggers.* Verbeteringen voor de Natuurplanner
- 36 *Groeneveld, R.A. & R.A.M. Schrijver.* FIONA 1.0; Technical description
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