

Annual Reports for 2008

Programme WOT-04

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Wettelijke Onderzoekstaken Natuur & Milieu



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Annual Reports for 2008

WOT-04

Working Document NO. 140

Statutory Research Tasks Unit for Nature &
the Environment

Wageningen, mei 2009

The series entitled 'Working Documents' presents interim results of research commissioned by the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M) from various external agencies. The series is intended as an internal communication channel and is not being distributed outside the WOt Unit. The content of this document are mainly intended as a reference for other researchers engaged in project commissioned by the Unit. As soon as final research results become available, these will be published through other channels

This document was produced in accordance with the Quality Manual of the Statutory Research Tasks Unit for Nature & the Environment, and has been approved by Paul Hinssen, programme leader at WOT N&M.

WOt Working Document No. 140 is the result of a research project commissioned by the Netherlands Environmental Assessment Agency (PBL), funded by the Ministry of Agriculture, Nature and Food Quality (LNV). This research report intends to contribute to the knowledge that is being used in more policy-oriented publications like the Nature Balance and Environmental Balance reports and thematic outlook reports.

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The Working Documents series is published by the Statutory Research Tasks Unit for Nature & the Environment, a division of Wageningen University and Research Centre. This Working Document is available from the secretary's office. **The document can also be downloaded from www.wotnatuurenmilieu.wur.nl.**

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Preface

Since 1 January 2005, the Statutory Research Tasks for Nature & the Environment have been implemented in accordance with the terms and conditions agreed upon by the Ministry of Agriculture, Nature and Food Quality and Stichting DLO in 2004, as laid down in the implementation contract entitled *Uitvoeringsovereenkomst WOT Natuur & Milieu*. At the same time, the format of the annual reports was revised.

Each WOT programme is now allocated its own working document, consisting of three parts: a summary report on the programme as a whole, a description of each individual project and a summary in English. The following working documents make up the 2008 annual reports for the Statutory Research Tasks for Nature & the Environment (WOT N&M):

No. 132: WOT-04-001 Umbrella Programme (Communication, Quality and Management)

No. 133: WOT-04-002 Basic Research

No. 134: WOT-04-003 Ecological & Environmental Consultancy

No. 135: WOT-04-005 M-AVP (Monitoring System for the Agenda for a Living Countryside programme)

No. 136: WOT-04-006 Nature Policy Assessment Task

No. 137: WOT-04-007 Environmental Policy Assessment Task

All documents mentioned above are written in Dutch. The present working document presents a summary in English of the 2008 results of the complete WOT programme **WOT-04**. The results of these projects have been applied in various products of the Netherlands Environmental Assessment Agency (PBL) and in the various working documents, reports and studies produced by the WOT N&M unit.

In addition, annual investments in the context of the Knowledge Base Theme on Green Spaces and Water (KB1) result in further knowledge development for WOT N&M. Reports on this subject are produced under the responsibility of the Knowledge Base Theme management.

A concise report on each project accounts for the way the available resources have been spent. These reports have been collected in the present document. Each project report presents administrative data on the project and a concise description of its aims and results.

Paul Hinssen

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**1 WOT-04-001 – Umbrella Programme
(Communication, Quality and Management)**

1.1 Report on the WOT-04-001 programme

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-001: Umbrella Programme for WOT N&M

1. Name and No. of Theme
WOT-04-001.
Umbrella programme for WOT N&M
2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:

The Ministry of Agriculture, Nature and Food Quality and the Executive Board of Wageningen University & Research Centre confirm the Statutory Research Tasks for Nature and the Environment (WOT N&M) in a series of implementation contracts. These tasks are subdivided into programmes. Programme No. WOT-04-001 is the 'umbrella' programme. This programme involves management of the Statutory Research Tasks Unit for Nature & the Environment, quality assurance, communication and knowledge management, as laid down in the WOT statute and the WOT implementation contract. Since these tasks are relevant to each of the other programmes, they cannot be accommodated in individual programmes.

3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

The Statutory Research Tasks Unit for Nature & the Environment aims to meet the knowledge needs ensuing from the statutory tasks for which the unit carries out the research. These statutory tasks and knowledge needs have been laid down in the implementation contracts for the Statutory Research Tasks Unit for Nature & the Environment. The Umbrella Programme does not answer any specific knowledge needs, but facilitates research by the other WOT N&M programmes.

Under the WOT statute, quality assurance, programme management, communication efforts and assistance to project managers all have to meet special requirements. Quality assurance at the Statutory Research Tasks Unit for Nature & the Environment has been implemented since 2003 by means of an ISO-certified quality management system. The certificate for this system was renewed for another three years in 2006. This quality management system is used to structure quality improvement efforts. Synchronisation with the Netherlands Environmental Assessment Agency's quality handbook will be undertaken as soon as the current reorganisation of the agency has been completed. The secretarial service is operational. Activities outlined in the 2006 communication plan have been further implemented in 2008. The scientific basis of contributions by the present programme is presented in WOT Reports, Working Documents and Studies. In addition, the Ministry of Agriculture, Nature and Food Quality and other target groups are being kept informed by means of the Kennis Online website and the WOT newsletter *WOT's New*.

4. Proposed and achieved results or interim results for 2008:

Project	2008 products
Management of WOT unit	2009 Action Programme, 2007 Progress Reports, maintenance of strategic plan, preliminary study for WOT evaluation.
Communication on WOT	Communication plan, WOt newsletter, website, studies, reports and working documents (only as regards production and logistics, as the content is supplied by the projects).
Quality assurance	Maintenance for the WOT quality management system and management review.
Knowledge Management	Maintenance of Strategy Chart, conversion of WOT strategic plan into an operational plan for knowledge management and implementation of operational plan.
Executive Management of Statutory Research Tasks Unit for Nature & the Environment	Monthly reports (financial aspects) and quarterly reports (organisational aspects). Customer satisfaction assessment PBL 2007.
Secretarial services	Ongoing service provision as laid down in WOT secretarial services documentation.

Project	Activities implemented in 2008
Management of WOT unit	2007 Progress Report, 2009 Action Programme, linked to Supervisory Committee meeting, preliminary study for WOT evaluation (WOT Internal Memorandum)
Communication on WOT	Newsletter (6 issues), Working Documents (3), WOT Reports (2), WOT Studies (3, plus 3 in preparation), updating the website and intranet site, contributions to KennisOnline website (editorial team), reports in KennisOnline e-news (31). Organising and facilitating various meetings, workshops and seminars.
Quality assurance	Internal audit (in consultation with Alterra), internal audit (WOT, September), management review (summer of 2008).
Knowledge Management	Updating Strategy Chart and operation plan for knowledge management (draft in autumn).
Management of Statutory Research Tasks Unit for Nature & the Environment	Allocation of projects (first quarter), monthly reports (financial aspects) and quarterly reports (organisational aspects). Customer satisfaction assessment PBL 2007.
Secretarial services	Ongoing secretarial services for programme supervisors as laid down in WOT secretarial services documents.

1.2 Project reports for WOT-04-001

Survey of WOT-04-001 projects

5233540-02 and LEI 21045 Communication on WOT	17
5233560-02 Management of WOT Unit	18
5233578-02 Secretarial services for WOT Unit	19
5233589-02 Quality Assurance	20
5233608-02 Knowledge Management	21
LEI 21044 Management of Statutory Research Tasks Unit for Nature & the Environment	22

Communication on WOT

Programma: WOT-04-001
Project resultats in 2008

Project name	Communication for WOT
Project No.	5233540-02 / LEI 21045
BAS code	WOT-04-001-002

Knowledge requirements of target group:

The Dutch government is in need of knowledge on nature, landscape and the environment in their administrative, economic and social contexts. The Statutory Research Tasks Unit for Nature & the Environment supplies this information in particular to the Ministry of Agriculture, Nature and Food Quality (LNV) and the Netherlands Environmental Assessment Agency (PBL). This project plays a crucial part in this process. The project is closely related to the research projects of the other WOT subprogrammes and to communication projects and activities of other WOT subprogrammes.

Research Objective:

The project entitled Communication for WOT N&M (which is part of the WOT Umbrella Programme) focuses on internal and external communication needs for WOT N&M insofar as this transcends individual programmes.

Proposed and achieved research results and products:

The main results are:

- In 2008, the project has resulted in clear, unambiguous communication on WOT N&M to clients and current or future staff. A major result is the enhanced image that WOT N&M has built up within as well as beyond the Wageningen UR context (e.g. through the results of the evaluation survey on the WOT Newsletter WOT's New).
- Publications: WOT's New newsletter (6 issues), WOT Studies (3), WOT Reports (2), WOT Working Documents (3), reports for the e-news service on the KennisOnline website (31).
- Contributions (organisation and facilitation) to the PBL Knowledge Fair, the Symposium on agriculture and nature in a European context and various workshops and lunchtime seminars.

Management of WOT unit

Programme: WOT-04-001
Project results in 2008

Project name	Management of WOT unit
Project No.	5233560-02
BAS code	WOT-04-001-001

Knowledge requirements of target group:
Not applicable

Research Objective:

- Programme coordination (vision, strategy and long-term programme)
- Planning and control (plan of action, monitoring and evaluation of progress)

Proposed and achieved research results and products:

Published

Annual reports for 2007, WOT-04-001 – Umbrella Programme. WOT Working Document No. 92.
 Annual reports for 2007, WOT-04-002 – Basic Research. WOT Working Document No. 93.
 Annual reports for 2007, WOT-04-003 Ecological & Environmental Consultancy. WOT Working Document No. 94.
 Annual reports for 2007, WOT-04-005 – Monitoring the Agenda for a Living Countryside (M-AVP). WOT Working Document No. 95.
 Annual reports for 2007, WOT-04-006 – Nature Policy Assessment Task. WOT Working Document No. 96.
 Annual reports for 2007, WOT-04-007 – Environmental Policy Assessment Task. WOT Working Document No. 97.
 Annual reports for 2007; Programme WOT-04, WOT Working Document No. 106.
 Hinssen, P.J.W. 2009 Plan of Action for the WOT N&M unit, nature and environmental policy assessment tasks. (In Dutch) WOT Internal Memorandum No. 1.

In preparation:

Hinssen, P.J.W. Outline of WOT N&M. (In Dutch) WOT Internal Memorandum No. 2.
 2008 WOT N&M Review. (In Dutch) Brochure.
 A description of WOT N&M. (In Dutch) Brochure.

Unpublished

2008 Management review for the WOT N&M quality management system. (In Dutch)
 Internal audit of WOT N&M; audit report and activities report. (in Dutch)
 2008 Audit report 2008, ISO 9001-2000 (In Dutch)
 Strategic planning for WOT N&M 2008-2012. (In Dutch)
 2007 Customer Satisfaction Assessment for the Netherlands Environmental Assessment Agency – Memorandum. (In Dutch)
 Statutory Research Tasks Unit for Nature & the Environment Powerpoint presentation. (In Dutch)

Secretarial services for WOT N&M

Programme: WOT-04-001
Project results in 2008

Project name	Secretarial services for WOT N&M
Project No.	5233578-02
BAS code	WOT-04-001-007

Knowledge requirements of target group: Not applicable
Research Objective: The 'Secretarial Services' project facilitates the implementation of the Statutory Research Tasks for Nature & the Environment at the DLO research institutes.
Proposed and achieved research results and products: The project takes the form of a process. Proposed tasks were implemented as and where required by the process.

Quality assurance

Programme: WOT-04-001
Project resultats in 2008

Project name	Quality assurance
Project No.	5233589-02
BAS code	WOT-04-001-004

Knowledge requirements of target group:

Not applicable

Research Objective:

The WOT statute requires the Statutory Research Tasks Unit for Nature & the Environment to operate an ISO-certified quality management system. The present project is intended to manage and implement this system.

Proposed and achieved research results and products:

The ISO certificate was renewed after a recertification procedure.
Favourable evaluation of the Statutory Research Tasks Unit for Nature & the Environment in 2008.

Knowledge management 2008

Programme: WOT-04-001
Project results in 2008

Project name	Knowledge Management 2008
Project No.	5233608-02
BAS code	WOT-04-001-005

Knowledge requirements of target group:

The Statutory Research Tasks Unit for Nature & the Environment (WOT N&M) has to offer expert and reliable assistance for the statutory research tasks on nature and the environment carried out by Wageningen University & Research Centre (WUR) for the Ministry of Agriculture, Nature and Food Quality (LNV). Hence, WOT N&M aims to offer efficient and effective knowledge-related processes within the chain of knowledge transfer linking research and policymaking, especially ensuring the link between WUR and the Netherlands Environmental Assessment Agency (PBL).

Research Objective:

WOT N&M aims to improve or innovate the process of handling knowledge, in order to strengthen its role as an expert and reliable partner in the implementation of statutory research tasks on nature and the environment for the Ministry of Agriculture, Nature and Food Safety (LNV).

Proposed and achieved research results and products:

Statutory Research Tasks Unit for Nature & the Environment (2007). Knowledge Fair, 3 April 2008. From basic research at Wageningen UR to products of the Netherlands Environmental Assessment Agency. (In Dutch) WOT Working Document No. 100, WOT N&M Wageningen.

Executive management of Statutory Research Tasks Unit for Nature & the Environment 2008

Programme: WOT-04-001
Project results in 2008

Project name	2008 Management of Statutory Research Tasks Unit for Nature & the Environment
Project No.	LEI 21044
BAS code	WOT-04-001-006

<p>Knowledge requirements of target group: Not applicable</p>
<p>Research Objective: The project involves the planning and control activities for the WOT N&M unit: - Drafting the annual plan of action and budget (based on LNV-DK's annual planning cycle and MNP's Action Programme). - Monitoring progress and evaluating the results.</p>
<p>Proposed and achieved research results and products: Planning & Control is to produce:</p> <ul style="list-style-type: none"> • Annual plan of action and budget estimate • Monthly surveys of implementation • Quarterly progress reports <p>2007 Customer Satisfaction Assessment</p>

2 WOT-004-002 – Basic Research

2.1 Report on WOT-04-002 programme

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-002: Basic Research

1. Name and No. of Theme
WOT-04-002
Basic Research for the Nature Policy Assessment Tasks
2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:

The WOT programme entitled Basic Research (WOT-04-002) is intended to develop knowledge that can be applied in the products of the Netherlands Environmental Assessment Agency (PBL) as part of the Nature Policy Assessment Task programme (WOT-04-006). The policy task for this programme is as follows:

The Nature Policy Assessment Task is a statutory instrument supporting Dutch nature policy (created under the act of 24 December 1997, regulating the creation of the Nature Policy Assessment Task). Its tasks include identifying trends and problems, evaluating policy achievements, forecasting the extent to which policy goals will be achieved and assessing social and land-use trends in terms of the opportunities and threats they present to nature. The programme produces a Nature Balance report each year and a Nature Outlook report every four years. These reports are commissioned by the Executive Board of the Ministry of Agriculture, Nature and Food Quality. In addition, the Netherlands Environmental Assessment Agency occasionally supplies exploratory studies or effect assessments for third parties, such as political parties or private nature conservation societies. To do so, it needs the Minister's permission.

3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

The programme provides answers to the approximately 40 knowledge-related questions formulated by the Netherlands Environmental Assessment Agency for themes 1 – 10 of the 2008 Plan of Action for the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M Working Document No. 78). These questions relate to four areas of knowledge, viz. Biodiversity, Landscape, Governance and Society and Economic Context of Nature and the Landscape, and fall under 10 'themes':

- a. Landscape quality
- b. Costs and benefits of nature
- c. Water
- d. Biodiversity
- e. Agriculture and nature/biodiversity in the EU
- f. European environmental and nature conservation policy
- g. Perceptions, wellbeing and public support; societal appreciation
- h. Policy implementation
- i. Administrative organisation
- j. Research infrastructure

4. Proposed and achieved results or interim results for 2008:All knowledge-related questions referred to in the previous section are expected to be the subject of WOT publications (WOT Working Documents, WOT Reports or WOT Studies) and/or journal articles. Complete references are included in the reports for each individual project. Many of the publications are still in preparation, as mentioned in the project reports.

2.2 Project reports for WOT-04-002

Survey of WOT-04-002 project:

2006

Theme 2: Policy implementation

Evaluating SBG/ILG
5233944-01 (2006/2.2) 35

Theme 6: Developments in agriculture

Opportunities for participation in countryside stewardship schemes by herbivore farmers
LEI 20652 (2006/6.4) 36

Theme 9: Costs and benefits of nature

Developing a model for a cost-effective nature conservation policy
5233315-01 (2006/9.2) 37

Theme 10: Research infrastructure

Information network on area management by the National Forestry Service (SBB)
LEI 20755 (2006/10.4) 38

2007

Theme 1: Administrative organisation

Sustainability in area-based policy
5233774-01 (2007/1.1) 39

Theme 2: Policy implementation

'Nature Management' programme for countryside stewardship: learning from neighbouring countries
LEI 20859 (2007/2.5) 40

Economic effects of the National Rural Investment Budget (ILG) on nature and the landscape
LEI 20872 (2007/2.6) 41

Theme 3: Landscape quality

High-quality landscape development
5233549-01 (2007/3.3) 42

Theme 4: Nature, well-being and public support

LOCALI
LEI 20829 (2007/4.2) 43

Public involvement and sustainable consumption
LEI 20950 (2007/4.3) 44

Theme 5: Significance of National Ecological Network (EHS)

Ecological values 1990–2000
5233531-01 (2007-5.1) 45

Assessing whether EHS species targets are being met
5233511-01 (2007/5.2) 46

A survey of ecological indicators for policy purposes
5233532-01 (2007/5.3) 47

Theme 6: Developments in agriculture	
Effects of agricultural changes on the landscape LEI 20899 (2007/6.2)	48
Management of lowlands peat area LEI 20945 / 5235697-01 (2007/6.3)	49
Analysis of economic efficiency and ecological efficacy of area conservation contracts LEI 20930 (2007/6.4)	50
Theme 7: Water policy	
Salt-water habitats 4396220101 (2007/7.1)	51
Theme 8: International aspects of nature policy	
Benchmarking the external policy environment for nature and the landscape LEI 20834 (2007/8.1 and 2008/6.4)	52
Benchmarking the implementation of Natura 2000 in EU countries 5233865-01 (2007/8.2 and 2008/6.5)	53
Benchmarking landscape ambitions 5233538-01 (2007/8.3 and 2008/6.6)	54
Theme 9: Costs and benefits of nature	
Developing a cost-effectiveness model LEI 31156 (2007/9.1)	55
Relation between biodiversity and cost-effectiveness LEI 31110 / 5233826-01 (2007/9.2 and 2008/2.3)	56
Optimal Timing LEI 20896 (2007/1.4 and 2007/9.5)	57
2008	
Theme 1: Landscape quality	
Remote sensing as a monitoring instrument 5235003-01 (2008/1.1)	58
Re-photographing landscapes 5235022-01 (2008/1.2)	59
Updating the land price and ownership map 5234990-01 (2008/1.3)	60
Importance of spatial factors in attracting new business and tourists 5234974-01 (2008/1.4)	61
Theme 2: Costs and benefits of nature	
Cost-effectiveness of the Dutch National Ecological Network: Exploring utilisation options of the biodiversity optimisation model and the effects of environmental scenarios LEI 31330 / 5235375-01 (2008/2.1)	62
Cost-effectiveness of nature conservation in the man-made landscape LEI 21072 / 3250115200 (2008/2.2)	63
Macro-economic developments and nature conservation policy: the benefits of the National Ecological Network LEI 21062 (2008/2.5)	64

Socio-economic consequences of environmental and nature conservation policies: policy evaluation and use of methods and models LEI 21098 (2008/2.6)	65
Theme 3: Water	
Groundwater situation in conservation areas 5235050-01 (2008/3.1)	66
Preliminary study of marine biodiversity modelling instruments 4396220103 (2008/3.2)	67
P and N limitation in freshwater bodies 5235160-01 (2008/3.3)	68
Theme 4: Biodiversity	
Provincial goal achievement indicators for the Dutch National Ecological Network (EHS): development and use 5235023-01 (2008/4.1)	69
Compatibility of ecological and environmental objectives 5235062-01 (2008/4.2)	70
Methods for monitoring the surface area of terrestrial habitat types by means of aerial photography 5235027-01 (2008/4.3)	71
Current and potential indispensable key patches for the Dutch National Ecological Network (EHS) 5235087-01 (2008/4.4)	72
Making the relation between spatial and environmental conditions for terrestrial plants operational 5235024 (2008/4.5)	73
Theme 5: Agriculture and nature/biodiversity in the EU	
Consequences of the CAP for nature and the landscape LEI 21035 (2008/5.1)	74
Regionalised options for CAP LEI 21330 (2008/5.3)	75
Effectiveness of area conservation contracts LEI 21097 (2008/5.4)	76
Theme 6: European environmental and nature conservation policy / International	
Preparatory work for the reports on the CBD 2010 indicators for the aquatic environment 5235177-01 and 5233526-01 (2008/6.1)	77
Natural habitat oriented environmental policy in a European perspective: an exploratory study 5235162-01 (2008/6.2)	78
An indicator for ecosystem goods and services 5235057-01 (2008/6.3)	79
Theme 7: Perception, well-being and support: societal appreciation	
Indicators for the relations between people and nature & landscape: perception and recreational use 5235101-01 (2008/7.1)	80

Indicators for the relations between people and nature & landscape: involvement and support LEI 21039 and WU 2100845400 (2008/7.2)	81
Significance of green spaces for the quality of the residential environment 5235061-01 (2008/7.3)	82
Landscape change perception 5235350 (2008/7.4)	83
Theme 8: Policy implementation / decentralisation of nature and landscape policy on ILG	
The Dutch 'Nature Management' Programme for countryside stewardship: learning from neighbouring countries (continued from 2008) LEI 21033 (2008/8.2)	84
Theme 9: Administrative organisation	
No projects were carried out under this theme in 2008	
Thema 10: Research infrastructure	
Metamodels for the 'Nature Planner' system 5235014-01 (2008/10.1)	85
Developing a geo-database for ecological quality assurance 5235059-01 (2008/10.2)	86
Developing an improved land allocation module for the IMAGE model. 5120393-01 (2008/10.3)	87
Validating STONE with data from LMM/BIN 5235188-01 and LEI 31409 (2008/10.4)	88
Exploring options for a cost module for the 'Nature Planner' framework 5235140-01 (2008/10.5)	89
ETC-LUSI 5233463-01 (2008/10.6)	90
Programme management 5235165-01	91
Reporting on Basic Research programme 5232455-03	92
Completing 2007 projects 5235283-01	93

Evaluating SGB/ILG

Programme: WOT-04-002
Project results in 2008

Project name	Evaluating SBG/ILG (2007/2.3)
Project No.	5233944-01 (2006/2.2)
BAS code	WOT-04-002-013

Knowledge requirements of target group:

There is a need for information, for each of the provinces to be selected, on

- the way the negotiations on performance agreements between the national and provincial authorities have developed and the extent to which local parties have been involved;
- the way negotiations on water table targets between provincial and local authorities have developed and what this implies for national commitments on water table drawdown (reducing soil desiccation)?
- the extent to which these two processes can be characterised as 'government' or 'governance'.

Research Objective:

The project will try to establish the extent to which the processes leading to agreements between national and provincial authorities can be characterised as 'government' or 'governance'. Subsequently, it will use an ex-ante approach to examine the way in which the provincial authorities have coordinated (or will coordinate) their area-based partners to implement the agreements (in terms of more 'government' or more 'governance').

Proposed and achieved research results and products:

Proposed results include a WOt Report and two background documents dealing with the three case studies and the evaluative instrument, respectively. Draft versions of the three reports have been produced.

Pleijte, M., J. Vreke, F. van den Bosch, A.L. Gerritsen, R.P. Kranendonk & P.H. Kersten. Reducing soil desiccation in the era of ILG. Between government and governance? (In Dutch) WOT Report No xx

Gerritsen A.L., R.P. Kranendonk, J. Vreke, F. Van den Bosch and M. Pleijte. Reducing soil desiccation in the era of ILG. Report on a case study in the Dutch provinces of Drenthe, Noord-Brabant and Noord-Holland. WOT Working Document xx.

Vreke, J., A.L. Gerritsen, R.P. Kranendonk, M. Pleijte, P.H. Kersten & F. van den Bosch. Evaluative instrument for governance. (In Dutch) WOt Working Document No. xx.

Opportunities for participation in countryside stewardship schemes by herbivore farmers

Programme: WOT-04-002
Project results for 2008

Project name	Opportunities for participation in countryside stewardship schemes by herbivore farmers
Project No.	LEI 20652 (2006/6.4)
BAS code	WOT-04-002-021

Knowledge requirements of target group:

Opportunities for farms to fit countryside stewardship activities (under the government's SN and SAN schemes for nature conservation by farmers and other landowners) into their operational farm management, and to implement management measures for large organisations managing wildlife areas.

Research Objective:

Assessing the feasibility of current targets.

Proposed and achieved research results and products:

Schrijver, R.A.M., D.P. Rudrum & T.J. de Koeijer, 2008. Economic feasibility of countryside stewardship on herbivore farms. (In Dutch) WOT Report No. 80. Wageningen, WOT N&M. 78 pp. 8 figs.; 23 tables.; 33 refs.; 1 annex.

Developing a model for a cost-effective nature conservation policy

Programme: WOT-04-002
Project results for 2008

Project name	Developing a model for a cost-effective nature conservation policy
Project No.	5233315-01 (2006/9.2)
BAS code	WOT-04-002-026

<p><i>Knowledge requirements of target group:</i> Knowledge-related question: What areas need to be conserved to achieve cost-effective habitat management, with effectiveness being measured as the number of protected species? Research question: What model structure should be used to maximise species richness, taking into account aspects like species composition, environmental quality, spatial coherence and 'nature target type' (i.e. the combination of plant and animal species preferred for a particular area)?</p>
<p><i>Research Objective:</i> The project aims to produce a GAMS (General Algebraic Modelling System) model to calculate which nature areas need conserving within a particular geographic area to protect as many species as possible at a given budget.</p>
<p><i>Proposed and achieved research results and products:</i> Groeneveld, R.A. & D.P. Rudrum, 2008. Habitat Allocation to Maximize Biodiversity, a technical description of the HAMBO model. Wot Working Document No. 116. Wageningen, WOT N&M.</p>

Information network

Programme: WOT-04-002
Project results for 2008

Project name	Information network on area management by the National Forestry Service (SBB)
Project No.	LEI 20755 (2006/10.4)
BAS code	WOT-04-002-024

<p><i>Knowledge requirements of target group:</i> Regular supply of information on the costs of managing forests and natural areas in the Netherlands.</p>
<p><i>Research Objective:</i> Accessing and analysing the administrative data kept by the Dutch National Forestry Service (SBB), in order to regularly derive data on relevant management costs (and revenues) for the purpose of the information network on area management.</p>
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none">• SBB application in the database management system Artis;• Memorandum: allocating SBB overhead to end products relevant to the Information Network on Area Management (In Dutch);• Data input in the Artis-database for 5 SBB districts.

Sustainability in area-based policy

Programme: WOT-04-002
Project results for 2008

Projecttitel:	Sustainability in area-based policy
Project No.	5233774-01 (2007/1.1)
BAS code	WOT-04-002-031

Knowledge requirements of target group:

The objectives of the project have been specified in three research questions:

1. What long-term political and social developments might affect regional policy arrangements relating to area-based policy initiatives at the interface between spatial and water-related aspects?
2. How is the decision-making process developing and how do two of the regional policy arrangements become entrenched in the local situation under the influence of the relevant long-term political and social developments?
3. What are the crucial decision moments, how is meaning assigned to the concept of sustainability in the intervening decision-making rounds and how can we explain this assignation of meaning from the dimensions of the regional policy arrangement?

Research Objective:

The Netherlands Environmental Assessment Agency (PBL) is trying to improve the relevance and value of its products and recommendations for policymakers. It has, however, no clear idea of the way sustainability is incorporated in specific policy processes. It is assumed that there are tensions between multi-actor negotiating processes at local and regional levels and the conservation of collective qualities like climate, land and nature (PBL, 2006). The project therefore examines the views of relevant policymakers and stakeholders about sustainability issues, the aspects of sustainability that emerge in the negotiations and how these aspects are actually implemented. Finally, PBL wants to know how policy developments and policy rules at higher levels affect the specification of sustainability at regional level.

Proposed and achieved research results and products:

Padt, F.J.G., F.G. Boonstra & M.A. Reudink (2008) The meaning of sustainability in area-based policy. (In Dutch) WOt Report No. 88, Wageningen, WOT N&M

'Nature Management' programme: learning from neighbouring countries

Programme: WOT-04-002
Project results for 2008

Project name	'Nature Management' programme for countryside stewardship: learning from neighbouring countries
Project No.	LEI 20859 (2007/2.5)
BAS code	WOT-04-002-041

Knowledge requirements of target group:

The target group would like to know what can be learned from activities in neighbouring countries as regards meeting the objectives of the Dutch government's 'Nature Management' countryside stewardship programme (Programma Beheer). The main issue is the role that centralised or decentralised government can play in this respect, and the coordination between centralised and decentralised government.

Research Objective:

The project aims to study how schemes comparable to the Dutch 'Nature Management' programme have been organised in neighbouring countries.

Proposed and achieved research results and products:

Smits, M.J., M.J. Bogaardt, D. Eaton, P. Roza & T. Selnes. Trees and money: the Dutch 'Nature Management' programme and comparable schemes in other countries (a quick-scan study). (In Dutch) WOt Working Document No. 84, WOT N&M, Wageningen.

Economic effects of ILG on nature and landscape

Programme: WOT-04-002
Project results for 2008

Project name	Economic effects of the National Rural Investment Budget (ILG) on nature and the landscape
Project No.	LEI 20872 (2007/2.6)
BAS code	WOT-04-002-042

Knowledge requirements of target group:

Information is required on the money flows and institutional/administrative aspects of the National Rural Investment Budget (ILG).

Research Objective:

Evaluating the economic effects of the ILG on nature and the landscape in various Dutch provinces. Particular attention will be paid to: (1) the characterisation of forms of institutional organisation and the corresponding economic/organisational aspects; (2) the arrangements that have been made to limit contract failure; (3) the way the ILG's institutional organisation works in practice; (4) the achieved or expected results. Results will, as far as possible, also be evaluated in terms of the efficacy of the methods used.

Proposed and achieved research results and products:

Slangen, L.H.G., N.B.P. Polman & R.A. Jongeneel (2008) Decentralising Dutch nature and landscape conservation from national to provincial governments; delegating tasks through the National Rural Investment Budget (ILG). (In Dutch) WOT Report No. 67, Wageningen, WOT N&M.

High-quality landscape development

Programme WOT-04-002
Project results for 2008

Project name	High-quality landscape development
Project No.	5233549-01 (2007/3.3)
BAS code	WOT-04-002-046

Knowledge requirements of target group:

The generic policy strategy called High-Quality Landscape Development (LOK), which was introduced in the 2004 National Spatial Strategy, concentrates on process objectives, emphasising the distribution of tasks between various layers of government. The national government no longer wants to impose its views about landscape quality. The aim is to induce or challenge provincial and local authorities, district water boards and private parties to form their own opinions on what constitutes landscape quality and to keep this in mind when initiating spatial planning developments.

In 2006, a method to evaluate the LOK policy strategy was developed, at the request of the Netherlands Environmental Assessment Agency (PBL) (Gerritsen, Kruit & Kuindersma, 2005). Although the proposed evaluation criteria, which focused on process aspects (since specific landscape targets that can be evaluated are lacking) allow users to assess whether provincial and local authorities are giving attention to landscape quality, they cannot assess whether the final results influence the landscape in favourable or unfavourable ways.

Research Objective:

The project entitled 'High-Quality Landscape Development: indicators of cultural innovation and architectural quality' aims to explore the opportunities to evaluate the quality of spatial planning developments. Ideally, the project should result in an indicator, or set of indicators, that should allow architectural quality and cultural innovation of spatial development to be evaluated.

Proposed and achieved research results and products:

Kruit, J., M. Brinkhuijzen & H. van Blerck, 2008. High-quality landscape development: Indicators of cultural innovation and architectural design. (In Dutch) WOT Working Document No. 117, WOT N&M Wageningen.

LOCALI

Programme: WOT-04-002
Project results for 2008

Project name	LOCALI
Project No.	LEI 20829 (2007/4.2)
BAS code	WOT-04-002-048

Knowledge requirements of target group:
Although many citizens are engaged in efforts to preserve and improve the quality of the Dutch landscape, little is known about local landscape management by residents. The Ministry of Agriculture, Nature and Food Quality has asked the Netherlands Environmental Assessment Agency (PBL) to analyse the factors determining the success of local landscape management.

Research Objective:
The project aims to analyse the factors underlying residents' contributions to the improvement of the landscape in the rural surroundings of their town or village, on the basis of four questions:

1. How can contributions by residents to landscape improvement, and the factors determining them, be defined?
2. How can the relevant facilities and policy instruments be defined?
3. What are the motives and circumstances that determine residents' willingness to contribute to the quality of the rural parts of their municipality?
4. What are the opportunities to increase the contributions of residents by means of additional facilities and policy instruments?

Proposed and achieved research results and products:
Overbeek, M.M.M., B.N. Somers & J. Vader (2008). Landscape and Public Participation. (In Dutch) WOt Report No. 65, WOT N&M, Wageningen

Overbeek, M.M.M. & J. Vader (2009) Juffrouw Ooievaar en Ed & Willem Bever: hoe een verschillende betrokkenheid bij landschap burgers tot een bijdrage inspireert (how different forms of commitment to landscape quality inspire residents to contribute) (In Dutch) WOt Study No. xx, Wageningen, WOT N&M

Public involvement and sustainable consumption

Programme: WOT-04-002
Project results for 2008

Project name	Public involvement and sustainable consumption
Project No.	LEI 20950 (2007/4.3)
BAS code	WOT-04-002-049

Knowledge requirements of target group:

The Netherlands Environmental Assessment Agency (PBL) requires information on the social context of sustainable consumption and on factors that can be modified by the authorities to promote sustainable consumption.

Research Objective:

A survey of the state of affairs and an evaluation of two current research programmes that offer opportunities to promote sustainable consumption.

Proposed and achieved research results and products:

Bakker, H.C.M., J.C. Dagevos & G. Spaargaren (2008). Sustainable consumption: Social context and policymaking opportunities. (In Dutch) WOt Report No. 71, WOT N&M, Wageningen.

Ecological values 1990-2000

Programme: WOT-04-002
Project results for 2008

Project name	Ecological values 1990–2000
Project No.	5233531-01 (2007-5.1)
BAS code	WOT-04-002-052

Knowledge requirements of target group:
Determining plant species indexes using Synbiosys.

Research Objective:
The indicator 'Ecological Value' is intended to monitor national and general biodiversity targets for the Dutch National Ecological Network (EHS). Whereas indexes for the 2000–2003 period are available, it has so far not been possible to determine indexes for the pre-2000 period, due to the lack of measurement data. The project aims to extend the database to the 1990–2000 period.

Proposed and achieved research results and products:
M.J.S.M. Reijnen, A. van Hinsberg, M. van Esbroek, B.de Knegt, R. Pouwels & J. Wiertz, 2009.
Ecological values 2.0: an indicator for national biodiversity targets. (In Dutch) WOT Report No. xx, Wageningen, WOT N&M.

Assessing whether EHS species targets are being met

Programme: WOT-04-002
Project results for 2008

Project name	Assessing whether EHS species targets are being met
Project No.	5233511-01 (2007/5.2)
BAS code	WOT-04-002-053

Knowledge requirements of target group:

The current spatial resolution of species distribution data is often unsuitable for the actual spatial pattern of the Dutch 'nature target types' (i.e. combinations of plant and animal species preferred for a particular area). Various refinement techniques are therefore used to spatially link species to nature target types. This results in a degree of uncertainty in determining the degree to which the targets have been met. Since area managers and perhaps also non-governmental data management organisations possess high-resolution distribution data, we need to assess whether these data can be used to validate the refined distribution maps.

Research Objective:

The study is expected to contribute to the validation of the data being used in the 'Ecological Value Indicator' for the Dutch National Ecological Network (EHS), which is part of the monitoring system for the Multi-Year Programme for the Agenda for a Living Countryside (by the Ministry of Agriculture, Nature and Food Quality) and the monitoring system for the National Spatial Strategy (by the Ministry of Housing, Spatial Planning and the Environment).

Proposed and achieved research results and products:

Pouwels, M.J.S.M., R. Reijnen, M.F. Wallis de Vries, A. van Kleunen, H. Kuipers & J.G.M. van der Gref, (2009) Water-related, environmental and spatial conditions for fauna: implementation in the LARCH model. (In Dutch) WOt Report xx, Wageningen, WOT N&M.

Advisory reports by the SOVON en Vlinderstichting wildlife study associations on the validation of current distribution maps.

A survey of ecological indicators for policy purposes

Programme: WOT-04-002
Project results for 2008

Project name	A survey of ecological indicators for policy purposes
Project No.	5233532-01 (2007/5.3)
BAS code	WOT-04-002-054

Knowledge requirements of target group:

In recent years, several ecological indicators have been developed for the Netherlands Environmental Assessment Agency (PBL) to allow a better, more objectified and quantified assessment of changes in ecological values. The Ecological Value Indicator is intended to monitor national and general biodiversity targets for the Dutch National Ecological Network (EHS). In addition, two new, interrelated indicators have been developed that allow monitoring of the ecological, environmental and spatial objectives and tasks for the EHS. There is a need to study the relations between these indicators and quality assurance issues, before further applications of the indicators can be implemented.

Research Objective:

1. Completion of a report on the Ecological Value Indicator and a preliminary version of an integrated survey of the available ecological indicators.
2. Quality assurance for the refined 'nature target types' map and calculation of spatial conditions.

Proposed and achieved research results and products:

M.J.S.M. Reijnen, A. van Hinsberg, M. van Esbroek, B.de Knegt, R. Pouwels & J. Wiertz, 2009. Ecological Value 2.0: an indicator for national policy targets. (In Dutch) WOt Report No xx Wageningen, WOT N&M.

J. Clement, A. van Hinsberg, H. Kuipers, M.J.S.M. Reijnen & I. Woltjer, 2009. Refining the 2003 'Nature Targets Map': 'A' Status. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M

M.J.S.M. Reijnen, A. van Hinsberg, H. Kuipers & R. Pouwels, 2009. Spatial, Water-related and Environmental Conditions to promote sustainable conservation of biodiversity in the Dutch National Ecological Network. (In Dutch) WOT-rapport xx, Wageningen, WOT N&M.

Effects of agricultural changes on the landscape

Programme: WOT-04-002
Project results for 2008

Project name	Effects of agricultural changes on the landscape
Project No.	LEI 20899 (2007/6.2)
BAS code	WOT-04-002-058

<p><i>Knowledge requirements of target group:</i> Knowledge-related question: What is the influence of developments in agriculture on areas designated as 'National Landscapes'?</p> <p>Research questions:</p> <ul style="list-style-type: none">• What is the role of farmers in preserving the core qualities of National Landscapes?• What are the main factors affecting agriculture in the National Landscapes?• What are the policy options?
<p><i>Research Objective:</i> Examining the role of agriculture in areas designated as National Landscapes. Examining the developments that affect the way farmers operate.</p>
<p><i>Proposed and achieved research results and products:</i> Verburg, R.W., H. Leneman, K.H.M. van Bommel & J. van Dijk. Does agriculture benefit the National Landscapes? An empirical analysis of agriculture and its effects on core landscape qualities. (In Dutch) WOt Report 83, Wageningen, WOT N&M.</p>

Management of lowlands peat area

Programme: WOT-04-002
Project results for 2008

Project name	Management of lowlands peat area
Project No.	LEI 20945 / 5235697-01 (2007/6.3)
BAS code	WOT-04-002-059

<i>Knowledge requirements of target group:</i>
<i>Research Objective:</i> This study examines the effects of current peat lowlands conservation strategies on the public budgets required. This is very much an exploratory project, and it is important to communicate with stakeholders about possible solutions. The project intends to contribute to the public debate on the future of peat lowlands in the Netherlands.
<i>Proposed and achieved research results and products:</i> Schrijver, R.A.M. A. Corporaal & A.H.F. Stortelder, 2008. High-level agriculture: farming in low-lying areas in the Netherlands. (In Dutch) In: F.M. Brouwer & G.H.P. Dirkx (eds.), 2008. Nature and landscape in rural areas: informing policymaking. (In Dutch) Wageningen, Statutory Research Tasks Unit for Nature & the Environment, WOt Study No. 8. The study is expected to be concluded in 2009 with a workshop and a report on this workshop.

Analysis of economic efficiency and ecological efficacy of area conservation contracts

Programme: WOT-04-002
Project results for 2008

Project name	Analysis of economic efficiency and ecological efficacy of area conservation contracts
Project No.	LEI 20930 (2007/6.4)
BAS code	WOT-04-002-060

Knowledge requirements of target group:

Analytical insights into the way area conservation contracts are functioning. Insights into the practical operation of area conservation contracts.

Research Objective:

The project entails an analytical and quantitative exploration of the economic and ecological effectiveness of collective area conservation contracts. The analysis compares collective area conservation contracts (including multiple parties) and contracts with individual parties.

Proposed and achieved research results and products:

Slangen, L.H.G., R.A. Jongeneel, N.B.P. Polman, J.A. Guldmond, E.M. Hees & E.A.P. van Well (2008). Economic and ecological effectiveness of collective nature and wildlife conservation contracts. (In Dutch) WOt Report No. 84, Wageningen, WOT N&M

Salt-water habitats

Programme: WOT-04-002
Project results for 2008

Project name	Salt-water habitats
Project No.	4396220101 (2007/7.1)
BAS code	WOT-04-002-061

Knowledge requirements of target group:

1. Specifying the Ecological Value Indicator for salt water bodies.
2. Trends in policy-relevant indicators since 1990.
3. Actual or potential importance of protected areas for particular species.
4. A literature study of fisheries and fishery policy and the ecological effects of fisheries.

Research Objective:

The project aims to produce a clear overview of marine biodiversity, from the perspective of an integrated ecosystem approach, focusing on fisheries as the main users affecting the ecosystem.

Proposed and achieved research results and products:

Aarts, B.G.W., L. van den Bremer, E.A.J. van Winden & T.K.G. Zoetebier (2008). Trend data and reference values for Dutch coastal birds. (In Dutch) WOt Report No. 79, Wageningen, WOT N&M.

Densen, L.T. & M.J. van Overzee (2008). Fifty years of North Sea fisheries and fisheries management. (In Dutch) WOt Report No 81, Wageningen, WOT N&M.

Lindeboom, H.J., R. Witbaard, O.G. Bos & H.W.G. Meesters (2008). Area protection for the North Sea: habitat types, conservation targets and management measures. (In Dutch) WOt Working Document No 114. Wageningen, WOT N&M.

Meesters, H.W.G. & R. ter Hofstede (2009). The state of salt-water habitats in the Netherlands. Fish, benthos and sea mammals. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M.

Benchmarking the external policy environment for nature and the landscape

Programme: WOT-04-002
Project results for 2008

Project name	Benchmarking the external policy environment for nature and the landscape
Project No.	LEI 20834 (2007/8.1 and 2008/6.4)
BAS code	WOT-04-002-064

Knowledge requirements of target group:

A survey of knowledge available in neighbouring countries about the influence of EU policies on nature and the landscape. What is known in neighbouring countries about the effects on nature and the landscape of EU regulations like the Nitrate Directive, the changeover to farm subsidies and the environmental measures for farms? What publications are available on what topics, and what conclusions do they draw? What was the context in which these publications were produced?

Research Objective:

A scientific comparison between various EU Member States in terms of the consequences of EU policies (Nitrate Directive, CAP) and their effects on nature and the landscape. In particular, we aim to assess what is known in the Netherlands, England, Flanders and North Rhine-Westphalia about the effects on nature and the landscape of the Nitrate Directive, the changeover to farm subsidies and the environmental measures for farms.

Proposed and achieved research results and products:

M.J.W. Smits & M.J. Bogaardt, 2008. Available knowledge about the effects of EU policies on nature and the landscape. (In Dutch) WOt Working Document No. 112.

Benchmarking the implementation of Natura 2000 in EU countries

Programme: WOT-04-002
Project results for 2008

Project name	Benchmarking the implementation of Natura 2000 in EU countries
Project No.	5233865-01 (2007/8.2 and 2008/6.5)
BAS code	WOT-04-002-065

Knowledge requirements of target group:

The general knowledge-related question that the study is trying to answer is how the Birds and Habitat Directives have been implemented in various countries, especially in terms of the management and monitoring of N2000 areas, and how the process of implementation relates to the current support for the policy on N2000 areas.

Research Objective:

All EU countries are implementing the Birds and Habitat Directives, and most countries have already selected the relevant areas. The countries are now at a stage where they have to set up systems for management and monitoring.

The project aims to compare the situations in Belgium, Germany and England in order to examine how the management and monitoring of N2000 areas have been organised or will be organised, and how the process of implementation and monitoring relates to the current support for the policy on N2000 areas. It tries to find out what lessons can be learned from this for the further implementation of the N2000 policy and other (European) environmental and conservation policies, and which of these lessons can be applied in the Netherlands.

Proposed and achieved research results and products:

Bouwma I.M., D. A. Kamphorst, R. Beunen & R. van Apeldoorn, 2009. Natura 2000 Benchmark A comparative analysis of the discussion on Natura 2000 management issues. WOT Report No.90, Wageningen, WOT N&M.

Presentation (in Dutch) given at the Department of Regional Affairs, Division East.

Benchmarking landscape ambitions

Programme: WOT-04-002
Project results for 2008

Project name	Benchmarking landscape ambitions
Project No.	5233538-01 (2007/8.3 and 2008/6.6)
BAS code	WOT-04-002-066

Knowledge requirements of target group:

There is a need in the Netherlands for information about landscape policies in neighbouring countries and their implementation.

Research Objective:

Countries around the Netherlands have very divergent ambitions for landscape conservation and use a great variety of instruments to achieve this. This makes it difficult to measure the efficacy of the Dutch landscape policies against that of policies in other countries. The project therefore aims to compare the ambitions for landscape conservation in North Rhine-Westphalia (G), Flanders (B) and England (UK), and their effects, with those in the Netherlands.

Proposed and achieved research results and products:

Results achieved:

1. Final English draft : Benchmarking of Landscape Policy in North-West Europe (Wascher, Pedroli & Schröder, 2008) *Manuscript for Landscape and Urban Planning. DRAFT 15 May 2008*
2. Dutch version: Benchmark van landschapsbeleid (Wascher, Pedroli & Schröder, 2008) Dutch summary for *WOT publication*.
3. Publication: Landscape policy in North-West Europe (In Dutch) (Wascher, Pedroli & Schröder, 2008) in: F.M. Brouwer & G.H.P. Dirx (eds.), 2008. Nature and landscape in rural areas: informing policymaking. (In Dutch) WOt Study No. 8, Wageningen, WOT N&M, pp 13-18.

Proposed results:

Paper in *Landscape and Urban Planning* in 2009 (In prep.)

Developing a cost-effectiveness model

Programme: WOT-04-002
Project results for 2008

Project name	Developing a cost-effectiveness model
Project No.	LEI 31156 (2007/9.1)
BAS code	WOT-04-002-068

Knowledge requirements of target group:

How can an ecological network be designed to preserve the maximum number of target species in the most cost-effective way?

Research Objective:

The project aims to build on the 2006 HAMBO model (project No. 20742, 'Developing a model for a cost-effective nature conservation policy') to develop the SERES (SElection of REserve Sites) model. SERES calculates how the Dutch National Ecological Network (EHS) should be designed in order to preserve a given number of target species at minimum cost, or to maximise the number of target species preserved within a given budget. The SERES calculations take account of the 'nature target type' (i.e. combinations of plant and animal species preferred for a particular area) for the areas at stake, the target species associated with these nature target types, the spatial situation of the areas and the spatial requirements of the species. SERES will be developed in such a way as to ensure that it can process sufficient quantities of data to analyse the entire EHS, and that it meets the quality assurance protocols for models used by the Agricultural Economics Research Institute (LEI).

Proposed and achieved research results and products:

D. Rudrum & G. Kruseman (2009) Description of the SERES module. (In Dutch) WOT Report No xx, Wageningen, WOT N&M

Relation between biodiversity and cost-effectiveness

Programme: WOT-04-002
Project results for 2008

Project name	Relation between biodiversity and cost-effectiveness
Project No.	LEI 31110 / 5233826-01 (2007/9.2 and 2008/2.3)
BAS code	WOT-04-002-069

<p><i>Knowledge requirements of target group:</i> Previous cost-effectiveness studies have assessed the relation between costs and environmental conditions in the areas included in the Dutch National Ecological Network (EHS). The present study goes one step further: it examines the relations between costs and the quality (in terms of biodiversity) of natural areas.</p>
<p><i>Research Objective:</i> (1) Examining the relation between costs and biodiversity. (2) Testing the robustness of the results by means of sensitivity analyses regarding the assumptions on generic deposition policy and on the costs expected to be incurred.</p>
<p><i>Proposed and achieved research results and products:</i> Oltmer, K, K. van Bommel, D. Rudrum, G. Kruseman & R. Reijnen (2009) Cost-effectiveness of the terrestrial part of the Dutch National Ecological Network – relation between biodiversity and environmental conditions. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M</p>

Optimal Timing

Programme: WOT-04-002
Project results for 2008

Project name	Optimal Timing
Project No.	LEI 20896 (2007/1.4 and 2007/9.5)
BAS code	WOT-04-002-072

<p><i>Knowledge requirements of target group:</i> The core concepts among the knowledge requirements are optimal timing and irreversible processes in nature conservation policy. The project will focus on developing and applying an evaluation instrument (social cost-benefit analysis) that takes account of these issues.</p>
<p><i>Research Objective:</i> The projects aims, firstly, to analyse the relation between economic climate, growth, land markets and the implementation of the Dutch National Ecological Network (NEN) by land acquisition and, secondly, to identify the role of irreversible processes in ecology and nature conservation and to examine ways of successfully incorporating this in a social cost-benefit analysis. In addition, the project will study the role of path-dependency in the process of making spatial planning decisions (focusing on industrial estates).</p>
<p><i>Proposed and achieved research results and products:</i> Woltjer G.B., J.L. Luijt & R. Jongeneel, A land market cycle in the Netherlands. Paper presented at the European Association of Agricultural Economists (EAAE) conference, 26-29 August 2008, in Ghent. Woltjer, Geert, Jan Luijt, Marie-José Smits, Marc-Jeroen Bogaardt, Janneke Vader, René Verburg & Friso de Vor (2009) Macro-economics, optimal timing and nature policy. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M</p>

Remote sensing as a monitoring instrument

Programme: WOT-04-002
Project results for 2008

Project name	Remote sensing as a monitoring instrument
Project No.	5235003-01 (2008/1.1)
BAS code	WOT-04-002-100

<p><i>Knowledge requirements of target group:</i> Can missing information on minor green landscape elements and green spaces in built-up areas be collected by an automated system so that they can be included in the monitoring process? What are the costs of implementing such a system for the entire country and what is the potential accuracy of the information?</p>
<p><i>Research Objective:</i> National databases do not supply all the information on minor green landscape elements and green spaces in built-up areas that is required for monitoring purposes. The study aims to ascertain whether the missing information can be collected from aerial photographs using an automated system.</p>
<p><i>Proposed and achieved research results and products:</i> Kramer, H., J. Oldengarm & L. Roupioz. Classifying small-scale green elements in urban and rural areas by means of aerial photographs (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.</p> <p>Lunchtime presentation at the Netherlands Environmental Assessment Agency (PBL), Bilthoven. Monitoring small-scale green elements in towns and cities: aerial photographs as a source of information in methods to include urban green spaces in a GIS environment. (in Dutch) January 2009.</p>

Re-photographing landscapes

Programme: WOT-04-002	
Project results for 2008	
Project name	Re-photographing landscapes
Project No.	5235022-01 (2008/1.2)
BAS code	WOT-04-002-101
<i>Knowledge requirements of target group:</i> The project explores whether it would be possible to use repeat photographs to reveal the consequences of spatial developments and policy choices for the landscape.	
<i>Research Objective:</i> Current presentation techniques (graphs, tables and maps) are insufficient to give national and regional policymakers and authorities a clear idea of the long-term consequences of spatial developments and policy choices for the landscape. This project explores the feasibility of using repeated photographs in order to contribute to the intention of the Netherlands Environmental Assessment Agency (PBL) to present changes in the landscape in a more transparent yet systematic way.	
<i>Proposed and achieved research results and products:</i> Kruit, J. & P. Veer, 2009. <i>Rephotographing landscapes:using landscape photographs from the Hubert de Boer collection as a starting point for revealing recent developments in the Dutch landscape.</i> (In Dutch) WOT Working Document No. 129. Wageningen, WOT N&M.	

Updating the land price and ownership map

Programme: WOT-04-002
Project results for 2008

Project name	Updating the land price and ownership map
Project No.	5234990-01 (2008/1.3)
BAS code	WOT-04-002-102

Knowledge requirements of target group:

The Ministry of Agriculture, Nature and Food Quality (LNV) and the Netherlands Environmental Assessment Agency (PBL) have asked the following questions:

- Various PBL models require up-to-date land price and ownership maps.
- Who owns and manages various landscape elements?
- What are the costs of managing these elements so as to ensure their long-term conservation?

Research Objective:

The study aims to update the 2001 national land price map and the 2004 national land ownership map and to identify who owns and manages various landscape elements, using these data to estimate the management costs of these landscape elements.

Proposed and achieved research results and products:

Smidt, R.A., J. van Os & I.G. Staritsky, 2008. *Composing national maps of landscape elements, land ownership and management.* (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

Jong, J.J. de, J. van Os & R.A. Smidt, 2008. Management and costs of landscape elements. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

Luijt, J, T. Kuhlman & J. van Dijk, 2008. Updating the land price map for PBL. (In Dutch) The Hague, LEI, WOt Working Document No. 138, Wageningen, WOT N&M

Importance of spatial factors in attracting new business and tourists

Programme: WOT-04-002	
Project results for 2008	
Project name	Importance of spatial factors in attracting new business and tourists
Project No.	5234974-01 (2008/1.4)
BAS code	WOT-04-002-103
<p>Knowledge requirements of target group:</p> <ol style="list-style-type: none"> 1. What spatial factors affect the decisions by international companies to settle in the Netherlands? 2. Do spatial factors (particularly aspects of the Dutch landscape) play a part in attracting foreign tourists to the Netherlands, and if so, which ones? 3. What developments can be identified (or expected) as regards the decisions by companies to settle in particular locations and as regards the preferences of tourists, and how can the Dutch government make use of these developments to increase the spatial quality of the country? 	
<p>Research Objective:</p> <p>The project aims to:</p> <ol style="list-style-type: none"> 1. identify the relations between (a) spatial factors and decisions by businesses to settle in particular locations, and (b) spatial factors and the decision by foreign tourists to spend their holidays in the Netherlands (phase 1); 2. to survey the available knowledge on this issue and identify any knowledge gaps (phase 1); 3. to study specific aspects of these relations in greater detail (phase 2); 4. to outline future prospects on the basis of the research findings (phase 2). 	
<p>Proposed and achieved research results and products:</p> <ul style="list-style-type: none"> • B. Breman, J. Luttik & M. Jacobs. Recommendations to make the Netherlands more attractive to tourists: Love thy neighbours? (In Dutch) <i>Spi</i>/No. 5 (253-254) p. 29-32 • Breman, B., J. Luttik & J. Vreke (2009) Attractive aspects of the Dutch landscape – A study of the relation between spatial factors and foreign tourism. (In Dutch) WOt Report No. 95, Wageningen, WOT N&M • J. Luttik, B. Breman & J. Vreke (2009) Landscape as a blind spot: a study of the relation between spatial factors and the decisions to settle in particular locations by foreign companies in the Netherlands. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M. <p>Luttik, J. & P. Veer. Does green space matter? Landscape elements and quality of life as considered by expats in the Netherlands. Article for Landscape Research (joint product of KB1 and WOt; to be submitted in 2009)</p>	

Cost-effectiveness of the Dutch National Ecological Network

Programme: WOT-04-002	
Project results for 2008	
Project name	Cost-effectiveness of the Dutch National Ecological Network: Exploring utilisation options of the biodiversity optimisation model and the effects of environmental scenarios
Project No.	LEI 31330 / 5235375-01 (2008/2.1)
BAS code	WOT-04-002-104
<p><i>Knowledge requirements of target group:</i></p> <ul style="list-style-type: none"> • Completion of the SERES biodiversity optimisation model for the Dutch National Ecological Network (EHS). • How can SERES be linked to the existing database of costs and environmental conditions for the EHS to allow integrated analyses? • What costs and biodiversity correspond to different levels of environmental conditions and different spatial scenarios? • What is the sensitivity of the combination of the SERES and LARCH models and the cost-effectiveness database, and what does this imply for the level of uncertainty in the results? 	
<p><i>Research Objective:</i></p> <p>Cost-effectiveness analyses for the EHS require a method to analyse and optimise costs and biodiversity in advance for various scenarios in terms of environmental conditions, spatial issues and other targets besides biodiversity, such as recreation. This should enable us to identify the relation between the biodiversity in various habitat types and the costs and suitable measures.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <p>Rudrum, D., J. Verboom, G. Kruseman, H. Leneman, R. Pouwels, A. van Teeffelen & J. Clement. (2009) Cost-effectiveness of the terrestrial part of the Dutch National Ecological Network: A preliminary exploration of spatial optimisation in nature conservation. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M.</p>	

Cost-effectiveness of nature conservation in the man-made landscape

Programme: WOT-04-002	
Project results for 2008	
Project name	Cost-effectiveness of nature conservation in the man-made landscape
Project No.	LEI 21072 / 3250115200 (2008/2.2)
BAS code	WOT-04-002-105
<p><i>Knowledge requirements of target group:</i></p> <ul style="list-style-type: none"> • What indicators/indexes can be used to measure biodiversity, while taking account of the need for operationalisation within the framework of evaluating the relation between measures and effects? • How can businesses contribute to the conservation or enhancement of biodiversity? • How can representative companies be selected for the implementation of fictitious measures to conserve or enhance biodiversity? • How can the measures be built into the models of these representative companies? • What is the nature of the tradeoff between biodiversity and costs? 	
<p><i>Research Objective:</i></p> <p>The study aims to identify possible measures that can be used to cost-effectively conserve or enhance biodiversity in man-made landscapes. It focuses on biodiversity in so-called white areas, that is, areas for which no specific ecological policy has been developed. It does so in the framework of the upcoming 'health check' for the European agricultural policy. In view of the potential reallocation of existing subsidies, which will be based on products and services deemed relevant to society, it is as yet unclear what contributions various stakeholders could make.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <p>Schrijver, R.A.M. (2009) Biodiversity in a man-made landscape: a business economics analysis. (In Dutch) WOt Working Document No. xx. Wageningen, WOT N&M</p>	

Macro-economic developments and nature conservation policy: the benefits of the National Ecological Network (EHS)

Programme: WOT-04-002	
Project results for 2008	
Project name	Macro-economic developments and nature conservation policy: the benefits of the National Ecological Network
Project No.	LEI 21062 (2008/2.5)
BAS code	WOT-04-002-108
<p><i>Knowledge requirements of target group:</i> Analytical information on the type of marketable benefits offered by the Dutch National Ecological Network (EHS), derived from the net added value of the recreational sector. Estimating the marketable and monetarisable benefits of the EHS.</p>	
<p><i>Research Objective:</i> The project involves a qualitative and quantitative exploration of the marketable and monetarisable benefits of the EHS. The first phase of the analysis aims to identify the significance of the EHS for the recreational industry (including the catering industry) and derives the benefits of the EHS from the net added value of the recreational industry. The next phase will then concentrate on deriving benefits from the net added value of private nature conservation associations and the National Forestry Service (Staatsbosbeheer).</p>	
<p><i>Proposed and achieved research results and products:</i> Nico Polman, Louis Slangen, Arianne de Blaeij, Janneke van Dijk & Janneke Vader (2009) Macro-economic developments and nature conservation policy: the benefits of the National Ecological Network (provisional title) (In Dutch)</p>	

Socioeconomic consequences of environmental and nature conservation policies: policy evaluation and use of methods and models

Programme: WOT-04-002	
Project results for 2008	
Project name	Socio-economic consequences of environmental and nature conservation policies: policy evaluation and use of methods and models
Project No.	LEI 21098 (2008/2.6)
BAS code	WOT-04-002-109
<p><i>Knowledge requirements of target group:</i> The target group wants to know what criteria and requirements have to be met by evaluations of environmental and nature conservation policies to ensure a thorough evaluation of the socio-economic consequences of such policies. Specific information is needed about the indicators required for such evaluations, as well as their operationalisation and quantification.</p>	
<p><i>Research Objective:</i> The project aims to develop a framework for the evaluation of environmental and nature conservation policies in terms of their socio-economic consequences. This framework will then be applied in four case studies.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> • Jongeneel, R.A. & H. Leneneman (eds.), Evaluation of socioeconomic consequences of environmental and nature conservation legislation: A framework, four case studies and a checklist. (In Dutch) WOt Report No. 96, Wageningen, WOt N&M 	

Groundwater situation in conservation areas

Programme: WOT-04-002
Project results for 2008

Project name	Groundwater situation in conservation areas
Project No.	5235050-01 (2008/3.1)
BAS code	WOT-04-002-110

Knowledge requirements of target group:

Mapping the groundwater situation in areas with water table-dependent 'nature target types' (i.e. combinations of plant and animal species preferred for a particular area) requires information on the quality and suitability of various types of data on the groundwater situation. In addition, there is a need for a systematic methodology to combine various types of groundwater-related information and make them suitable to generate maps on the current groundwater situation, while at the same time quantifying their accuracy.

Research Objective:

Water table drawdown is a major problem in efforts to meet national and international biodiversity targets. The Netherlands Environmental Assessment Agency (PBL) requires a national map providing up-to-date ecohydrology data for locations with ecosystems (or intended ecosystems) depending on groundwater. As yet, no such map is available. The project aims to develop a map of the groundwater situation in conservation areas. The parameters to be presented on this map relate to water table and groundwater quality characteristics and their accuracy (reliability). This map should allow local and national changes in the groundwater situation to be quantified, as well as to link the groundwater situation as indicated on the map to the preconditions for the intended ecosystems.

Proposed and achieved research results and products:

The part of the project that concerns water tables in conservation areas has been completed and will soon be published as WOt Report No. 89, entitled 'Are groundwater levels in nature reserves becoming too low?' (In Dutch) In addition, a draft article for an international journal has been completed and will soon be submitted to the Wetlands journal.

Preliminary study of marine biodiversity modelling instruments

Programme: WOT-04-002
Project results for 2008

Project name	Preliminary study of marine biodiversity modelling instruments
Project No.	4396220103 (2008/3.2)
BAS code	WOT-04-002-111

Knowledge requirements of target group:

What is the best approach for the Netherlands Environmental Assessment Agency (PBL) to model marine biodiversity? What models are available? What are the current national and international developments in this field?

Research Objective:

Marine ecosystems are being ever more intensively used. This will require more integrated evaluations regarding utilisation and management measures, which may be supported by a set of modelling instruments. PBL is especially interested in biodiversity. The project aims to establish a strategy for the development of such a set of modelling instruments.

Proposed and achieved research results and products:

Klok, T.C., R. Hille – Ris Lambers, P. de Vries, J.E. Tamis & J.W.M. Wijsman (2009) Quick scan modelling instruments for marine biodiversity policy, WOT Report xx, Wageningen, WOT N&M

P and N limitation in freshwater bodies

Programme: WOT-04-002
Project results for 2008

Project name	P and N limitation in freshwater bodies
Project No.	5235160-01 (2008/3.3)
BAS code	WOT-04-002-112

Knowledge requirements of target group:

In what water bodies and under what circumstances can phosphorus and nitrogen be limiting factors? There is a need to identify the aspects for which international consensus exists and those on which opinions differ.

Research Objective:

Phosphorus is generally regarded as the element that causes eutrophication effects such as algal blooms in freshwater bodies. There is evidence, however, that nitrogen may also play an important part in this. This may be important for the establishment of standards in the EU Water Framework Directive, as well as for efforts to reduce eutrophication of specific water bodies and for manure policies.

Proposed and achieved research results and products:

Loeb, R. & P.F.M Verdonschot (2009) The complexity of nutrient limitation in surface waters. (In Dutch) WOT Working Document No. 128, Wageningen WOT N&M.

Loeb, R. & P.F.M Verdonschot, 2008. Processes determining limitation in aquatic systems - a review. Presentation at the Cost869 WG2 workshop on "N/P limitation and interactions between N and P in surface water" Athens-Anavyssos, Greece, 17-19 September 2008.

Loeb, R. & P.F.M Verdonschot, (2009) The complexity of nutrient limitations in surface waters. (In Dutch) Presentation at the Netherlands Environmental Assessment Agency (PBL) in Bilthoven. (In Dutch) (In Prep)

Provincial goal achievement indicators for the Dutch National Ecological Network (EHS): development and use

Programme: WOT-04-002
Project results for 2008

Project name	Provincial goal achievement indicators for the Dutch National Ecological Network (EHS): development and use
Project No.	5235023-01 (2008/4.1)
BAS code	WOT-04-002-113

<p><i>Knowledge requirements of target group:</i></p> <p>The current set of goal achievement indicators for the Dutch National Ecological Network has not yet been fully specified at provincial level. The indicators need to be specified for both current and potential quality. Such specification requires information on the importance of the distribution of 'nature target types' (i.e. combinations of plants and animals preferred for a particular area) across the Dutch provinces, as well as on the differences between provinces as regards the importance of the various target types and on methods for qualified comparisons of the resulting quality data. The 2010 interim assessment requires a survey of available data and their suitability for use in the indicator system. The final aim is to clarify: (1) what a particular province has contributed to the conservation, recovery and development of populations and ecosystems for whose conservation the Netherlands has international responsibilities, and (2) whether the collective contributions of all provinces are sufficient or whether certain provinces could contribute more.</p>
<p><i>Research Objective:</i></p> <p>The project has two aims:</p> <ul style="list-style-type: none"> • Developing and applying a set of indicators of potential and current goal achievement in the terrestrial part of the EHS, at provincial level, for the years 1990-2004-2010, which meets the quality assurance requirements set by the Ministry of Agriculture, Nature and Food Quality and complies with the agreements between the national and provincial governments laid down in the National Rural Areas Investment Budget Act. • Exploring the feasibility of interim assessments.
<p><i>Proposed and achieved research results and products:</i></p> <p>Greft-van Rossum, J.G.M. van der et al. (2009) Provincial goal achievement indicators for the Dutch National Ecological Network. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M</p>

Compatibility of ecological and environmental objectives

Programme: WOT-04-002	
Project results for 2008	
Project name	Compatibility of ecological and environmental objectives
Project No.	5235062-01 (2008/4.2)
BAS code	WOT-04-002-114
<p><i>Knowledge requirements of target group:</i> The questions to be answered by this project are:</p> <ul style="list-style-type: none"> • Are the classification criteria of the various habitat types unambiguous? • Are ecological and environmental objectives spatially compatible? <p>Knowledge about these aspects is required for policy evaluations and may be useful in coordinating various policy development programmes.</p>	
<p><i>Research Objective:</i> Efforts to ensure the quality of the Dutch National Ecological Network (EHS) include the development of a typology for ecological quality (known as Index NL) that has the support of all parties involved (national and provincial governments as well as area managers). At the same time, systems are designed to monitor and evaluate ecological quality. These efforts are intended to identify the ambitions of the national and provincial governments that could eventually result in administrative agreements about the ecological quality of the EHS.</p> <p>Agreements between the national and provincial governments have also been recorded in the form of maps showing the environmental and ecological objectives. Since current environmental and ecological regulations have been developed in different policy development programmes at different departments and ministries, however, it is likely that the regulations are not always compatible. The present project aims to identify gaps in their compatibility.</p>	
<p><i>Proposed and achieved research results and products:</i> Sanders, M.E. & J.G.M Greff-van Rossum, van der, (in prep) Habitat types and environmental objectives: An assessment of controlling options provided by the policy instruments. (In Dutch) (preliminary title). WOt Report No. xx, Wageningen, WOt N&M , Wageningen, WOT N&M.</p>	

Methods for monitoring the surface area of terrestrial habitat types by means of aerial photography

Programme: WOT-04-002	
Project results for 2008	
Project name	Methods for monitoring the surface area of terrestrial habitat types by means of aerial photography
Project No.	5235027-01 (2008/4.3)
BAS code	WOT-04-002-115
<p><i>Knowledge requirements of target group:</i> There is a need for a reproducible procedure to refine the existing classification used in the Basic Map of Natural Areas in terms of habitat and management types. The procedure should result in a national database of selected habitat and management types.</p>	
<p><i>Research Objective:</i> The project aims to develop methods for using aerial photographs and additional data to refine the current classification used in the Dutch Basic Map of Natural Areas in terms of habitat and management types. These refinement methods must be transparent and reproducible, so as to allow changes in the surface area occupied by the various habitat and management types to be monitored in future. The main result of the project will be a national database including a selection of habitat and management types.</p>	
<p><i>Proposed and achieved research results and products:</i> Hazeu, G.W., J. Oldengarm, J. Clement, H. Kramer, M.E. Sanders, A.M. Schmidt & I. Woltjers (2009) Remote sensing techniques for further specification of the dune areas in the Dutch Basic Map of Natural Areas. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M</p>	

Current and potential indispensable key patches for the Dutch National Ecological Network (EHS)

Programme: WOT-04-002	
Project results for 2008	
Project name	Current and potential indispensable key patches for the Dutch National Ecological Network (EHS)
Project No.	5235087-01 (2008/4.4)
BAS code	WOT-04-002-116
<p><i>Knowledge requirements of target group:</i> How can patches with current or potential value at species level be spatially combined?</p> <p>How can information on species be used to select locations within the EHS that are crucial for the sustainable conservation of national biodiversity in the Netherlands, both in the short term (high current ecological value) and in the longer term (high potential value)?</p>	
<p><i>Research Objective:</i> The aim of the project is to identify locations within the EHS that are crucial to the conservation of biodiversity in the Netherlands.</p>	
<p><i>Proposed and achieved research results and products:</i> Pouwels, R., C. van Swaay, R. Foppen & H. Kuipers (2009) Identifying key patches in the Dutch National Ecological Network based on the current and potential presence of birds and butterflies. (preliminary title). (In Dutch) WOt Working Document No. xx, Wageningen WOT N&M.</p>	

Making the relation between spatial and environmental conditions for terrestrial plants operational

Programme: WOT-04-002
Project results for 2008

Project name	Making the relation between spatial and environmental conditions for terrestrial plants operational
Project No.	5235024 (2008/4.5)
BAS code	WOT-04-002-143

<p><i>Knowledge requirements of target group:</i> In 2007, the simple model for environmental, water-related and spatial conditions for a sustainable conservation of biodiversity was expanded by including the relations between environmental and water-related conditions on the one hand and target animal species (birds and butterflies) on the other, as well as the relations between spatial conditions and target plant species. What is still lacking is the relations between environmental (water-related) conditions on the one hand and target plant species on the other, as well as the interaction between environmental (water-related) conditions and spatial conditions required for plants. The basic knowledge required for this expansion is available, e.g. from the so-called 'Nature Planner' model system.</p>
<p><i>Research Objective:</i> The project aims to predict whether particular plant species will be sustainably present in the Dutch National Ecological Network, by simplifying known relations between target plant species and environmental, water-related and spatial conditions.</p>
<p><i>Proposed and achieved research results and products:</i> Grefst-van Rossum, J.G.M. van der et al., (2009) Water-related, environmental and spatial conditions for plants: Operationalisation for the terrestrial part of the Dutch National Ecological Network EHS. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M</p>

Consequences of the CAP for nature and the landscape

Programme: WOT-04-002	
Project results for 2008	
Project name	Consequences of the CAP for nature and the landscape
Project No.	LEI 21035 (2008/5.1)
BAS code	WOT-04-002-117
<i>Knowledge requirements of target group:</i> There is a need for up-to-date information about the current debate in the Netherlands, England, Germany, France and Lithuania on the relation between the EU's Common Agricultural Policy (CAP) and societal concerns like biodiversity, landscape protection and the environment.	
<i>Research Objective:</i> The project aims to examine the level of public support in a number of EU Member States for plans to give societal concerns like biodiversity, landscape protection and the environment a more prominent position in the CAP.	
<i>Proposed and achieved research results and products:</i> The draft report has been completed and has been discussed with the client. After some adjustment, it will be published as a WOt Working Document. M.J. Smits, M.J. Bogaardt, D. Eaton, A. Karbauskas & P. Roza, Including societal concerns in the EU's Common Agricultural Policy; a survey of views in the Netherlands, Germany, England, France and Lithuania. (In Dutch) Wageningen, WOT N&M, Working Document No. xx	

Regionalised options for CAP

Programme: WOT-04-002	
Project results for 2008	
Project name	Regionalised options for CAP
Project No.	LEI 21330 (2008/5.3)
BAS code	WOT-04-002-119
<i>Knowledge requirements of target group:</i>	
The target group wants to know what effect various options in the EU's Common Agricultural Policy (CAP) have on farm incomes, nature and the landscape	
<i>Research Objective:</i>	
<p>In 2007, the Netherlands Environmental Assessment Agency (PBL) commissioned a study by the Agricultural Economics Research Institute (LEI) into 'options for the CAP policy' (Helming & Schrijver, 2008). The results of this study were published in a PBL report (PBL, 2007), presented at The Hague in late 2007. This study did not yet include detailed research into the effects in different regions. In addition, the research only included the dairy farming sector, not arable farming, and did not quantify the effects on the landscape and on biodiversity. Since it was to be used in the debate about the 'health check', it included 'robust' measures, with major redistribution effects.</p> <p>The present study, which aims to examine the effects of possible and realistic policy options for a redistribution of the available budget for farm support in land-based agriculture, will therefore involve a detailed investigation of the regional distribution of the effects, and on the effects on arable farming as well as herbivore farming. It will also quantify the effects on biodiversity and the landscape.</p>	
<i>Proposed and achieved research results and products:</i>	
The project is to be completed in 2009. The title of the report is not yet known.	

Effectiveness of area conservation contracts

Programme: WOT-04-002
Project results for 2008

Projecttitel:	Effectiveness of area conservation contracts
Project No.	LEI 21097 (2008/5.4)
BAS code	WOT-04-002-120

Knowledge requirements of target group:

There is a need for information on the local implementation of provincial policies on area-specific contracts for countryside stewardship (area conservation contracts), especially as regards the role of committees for specific areas and similar parties. Information is required on the number of organisations acting as local and regional partners, the nature and composition of these organisations, their activities and organisational structure, their individual or shared characteristics and their ability to implement the intended area conservation policies. The study will also examine organisations which are not formally designated as area-specific committees but do in fact function as such. Examples of these include the organisations supervising the National Landscapes and the committees known as Reconstructiecommissies.

Research Objective:

The project aims to analyse the area-specific committees and their role in facilitating, establishing and specifying the National Rural Investment Budget (ILG) .

The introduction of the ILG in January 2007 changed the way rural areas are controlled. The ILG gave the provincial authorities new responsibilities regarding the development and implementation of area conservation policies, using funding from the national government, their own budgets and other sources. The essence of the new governance philosophy is that the provincial authorities collaborate with municipal authorities, regional water boards and civil society organisations in coordinating the programming and implementation of national policies on rural areas. Many provinces use area-specific or region-specific committees for this purpose, but there are also other options (such as the organisations supervising the National Landscapes, and conservation societies like Geldersch Landschap. We refer to all these organisations collectively as local and regional partners. The study aims to assess how many area-specific committees or local and regional partners are involved; what they do; how they are organised; their profiles and whether they are able to implement the intended area conservation policies.

Proposed and achieved research results and products:

The project will result in a report based on literature studies and two surveys (among provincial authorities and area-specific committees). The survey results remain to be processed. The report is expected to be completed at the end of March. Partial results (relating to the provincial authorities) and partial reports will be available from January 2009.

Jongeneel, R, N.B.P Polman, L.H.G Slangen & H. Leneman (2009) Area-specific committees: an analysis of their significance for area conservation policy. (In Dutch) WOT Report No. xx, Wageningen, WOT N&M

Preparatory work for the reports on the CBD 2010 indicators for the aquatic environment

Programme: WOT-04-002	
Project results for 2008	
Project name	Preparatory work for the reports on the CBD 2010 indicators for the aquatic environment
Project No.	5235177-01 and 5233526-01 (2008/6.1)
BAS code	WOT-04-002-121
<p><i>Knowledge requirements of target group:</i> Worldwide and European systems of indicators has been developed to assess to what extent the objectives of CBD have been met. This system must now be adapted to the Dutch situation. The present project focuses on the aquatic environment, as this has so far received relatively little attention.</p>	
<p><i>Research Objective:</i> The Netherlands is one of the partners in the Convention on Biological Diversity (CBD). One of the main goals of CBD is to halt the loss of biodiversity by 2010 (the so-called 2010 target). A 'Quick Scan' of the EU's biodiversity targets for 2010 is expected to be carried out in 2009, and the 2010 Nature Balance report will also have these targets as one of its themes. The present project aims to identify those water-related CBD 2010 indicators that will be needed to describe the Dutch situation, and to develop any indicators that are not yet available, in preparation for the two reports on the 2010 biodiversity targets. The study has focused in more detail on two indicators: 'invasive alien species' and 'freshwater quality'.</p>	
<p><i>Proposed and achieved research results and products:</i> Lange, H.J. de, G.H.P. Arts & W.C.E.P. Verberk (2008) Exploring the CBD 2010 indicators for fresh water. Survey and specification of indicators relevant to the Netherlands. (In Dutch) WOT Working Document No. 122. Wageningen, WOT N&M.</p>	

Natural habitat oriented environmental policy in a European perspective: an exploratory study

Programme: WOT-04-002
Project results for 2008

Project name	Natural habitat oriented environmental policy in a European perspective: an exploratory study
Project No.	5235162-01 (2008/6.2)
BAS code	WOT-04-002-122

Knowledge requirements of target group:

To what extent is the environmental pressure on natural habitats in other parts of Europe similar to that in the Netherlands? What policies have been or are being developed in areas facing problems similar to those in the Netherlands to improve environmental conditions for natural habitats?

The following research questions have been formulated to specify this general question:

- What EU areas are facing environmental pressures similar to those in the Netherlands, and what areas can be identified where natural habitats are under pressure from very different factors?
- What policies have been or are being developed in those areas facing similar problems as the Netherlands to improve environmental conditions for natural habitats? Are such policies being implemented at a central or decentralised level?

Research Objective:

Dutch authorities are trying to reduce environmental problems affecting natural habitats, such as soil desiccation and eutrophication. While this is a challenging task, successful policies can contribute to efforts to meet national and international biodiversity targets.

The present project examines:

- the extent to which natural habitats in other parts of the EU face environmental and other pressures similar to those in the Netherlands;
- the policies put in place by other EU Member States (or regions within those states) to reduce environmental pressures, as regards those areas facing environmental pressures similar to those in the Netherlands.

Comparing the Dutch situation with that in other parts of the EU could help optimise Dutch policies to improve environmental conditions for natural habitats.

Proposed and achieved research results and products:

- Doorn, A. van & M. Paulissen (2009) Natural habitat oriented environmental policy in a European perspective: An exploratory study. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M.
- Article in Dutch (in prep.)
- Lunchtime presentation at the Netherlands Environmental Assessment Agency on 16 June 2009.

An indicator for ecosystem goods and services

Programme: WOT-04-002	
Project results for 2008	
Project name	An indicator for ecosystem goods and services
Project No.	5235057-01 (2008/6.3)
BAS code	WOT-04-002-123
<p><i>Knowledge requirements of target group:</i></p> <ul style="list-style-type: none"> • There is a need for knowledge about ecosystem services. The conceptual framework developed and published within the context of the Millennium Ecosystem Assessment must be specified and described in qualitative and quantitative terms for the Dutch situation. This includes not only the services produced within the Netherlands, but also 'imported' services. • There is also a need for knowledge about the relation between ecosystem services and biodiversity. Functional relations for each distinguishable ecosystem service must be analysed and described, including aspects of biodiversity, using Mean Species Abundance (MSA) as the primary biodiversity indicator. Finally, there is a need for knowledge about biodiversity in the systems that produce the 'imported' ecosystem services. 	
<p><i>Research Objective:</i></p> <p>Quantification of goods and services delivered by ecosystems and the role of biodiversity levels in this respect have long been the subject of scientific research. In recent years it has become a theme in international policy documents and national and European research programmes. Describing and quantifying ecosystem goods and services in relation to the biodiversity in the systems is also important for the mathematical models being developed at the Netherlands Environmental Assessment Agency (PBL). The project aims to gather and analyse the available quantitative information on goods and services delivered by biodiversity, in order to contribute to the ongoing PBL project entitled 'Relationships between biodiversity and ecosystem goods and services'. The study will focus on <i>a design for a potential indicator (or set of indicators) for the Netherlands</i> regarding the relations between biodiversity, ecosystem goods and services and existing spatial databases for the Netherlands. The project will explore the feasibility of a model describing the goods and services produced by Dutch biodiversity and ecosystems.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <p>Braat, L.C. & T.C.P. Melman, with J. Clement, R. Smidt, J. van Os & B.Elbersen (2009) Indicators of sustainable use of ecosystem services: an exploratory study. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M</p>	

Indicators for the relations between people and nature & landscape: perception and recreational use

Programme: WOT-04-002
Project results for 2008

Project name	Indicators for the relations between people and nature & landscape: perception and recreational use
Project No.	5235101-01 (2008/7.1)
BAS code	WOT-04-002-127

<p><i>Knowledge requirements of target group:</i> First of all, there is a need to understand how existing indicators, models and research studies regarding the perception and recreational use of nature and the landscape relate to each other. The second question concerns the indicators that the Netherlands Environmental Assessment Agency (PBL) would like to use for these aspects of the 'nature for people' concept. The third and final question concerns the development of such indicators.</p>
<p><i>Research Objective:</i> Although PBL has produced large volumes of research findings on the use and perception of nature and the landscape by people, the information obtained from such studies often proves difficult to compare. The project therefore aims to develop a robust, scientifically based set of indicators that has the necessary support, at least within PBL.</p>
<p><i>Proposed and achieved research results and products:</i> A conceptual framework has been designed, which also proposes a number of choices. This has been discussed at a workshop attended mostly by PBL staff. The goal of the workshop was to specify the research question: what indicators of people's perception and recreational use of nature and the landscape are most essential for PBL? The workshop revealed that there was a need for a coherent and comprehensive set of indicators, rather than for a limited number of key indicators: in many cases, the participants did not choose between options, but regarded both options as equally relevant.</p> <p>Vries, S. de (2009) Perception and recreational use of nature & the landscape: towards a robust and widely supported set of indicators of the public's appreciation for nature and the landscape. (In Dutch) WOt Working Document No. xx. Wageningen, WOT N&M</p>

Indicators for the relation between people and nature & landscape: involvement and support

Programme: WOT-04-002
Project results for 2008

Project name	Indicators for the relations between people and nature & landscape: involvement and support
Project No.	LEI 21039 and WU 2100845400 (2008/7.2)
BAS code	WOT-04-002-128

Knowledge requirements of target group:

The project aims to develop a theoretically and methodologically sound set of indicators of citizens' support for nature and the landscape, that would allow an optimised comparison of studies into public support for these issues. This should help us assess the appreciation for nature and the landscape in society, and indicate which expectations are justified with respect to the social acceptability of and support for policies on nature and the landscape.

Research Objective:

Although PBL has produced large volumes of research findings on the use and perception of nature and the landscape by people, as well as citizens' involvement in and support for nature and the landscape, the information obtained from such studies often proves difficult to compare. As a result of this, (i) it is very hard or even impossible to provide an integrated measure of appreciation and an unequivocal qualification of citizens' support for and perceptions of nature and the landscape, and (ii) it is often unclear how the various available data flows relate to each other and how they can be linked in a scientifically sound and robust manner.

Proposed and achieved research results and products:

A successful exchange of views with relevant PBL staff, other researchers and the relevant policy coordinator was organised in November 2008.

Bakker, H.C.M. de & C.S.A. van Koppen (2009), Towards social support studies. (In Dutch) WOt Working Document No. 145, Wageningen, WOT N&M.

Significance of green spaces for the quality of the residential environment

Programme: WOT-04-002	
Project results for 2008	
Project name	Significance of green spaces for the quality of the residential environment
Project No.	5235061-01 (2008/7.3)
BAS code	WOT-04-002-129
<p><i>Knowledge requirements of target group:</i> What types of green space contribute most to the quality of the residential environment in what type of neighbourhood and for which groups of residents, and what mechanisms determine this?</p>	
<p><i>Research Objective:</i> The project aims to examine the significance of urban green spaces for the quality of the residential environment, from the residents' perspective.</p>	
<p><i>Proposed and achieved research results and products:</i> Phase 2 has only been partially completed and will be completed in 2009.</p> <p>Salverda, I.E. & J. Vreke, Urban green spaces and the quality of the residential environment. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M</p>	

Landscape change perception

Programme: WOT-04-002
Project results for 2008

Project name	Landscape change perception
Project No.	5235350 (2008/7.4)
BAS code	WOT-04-002-130

Knowledge requirements of target group:

How can the public's perception of changes in the landscape be examined in such a way as to take into account the complexity of psychological reactions to changes and the highly dynamic social and physical context?

Research Objective:

The project aims to develop a method to examine society's appreciation of landscape changes.

Proposed and achieved research results and products:

One experiment has been completed, and the results of a literature study will be presented in an essay which is currently being written. The findings will be published in the following WOT Working Documents:

Winsum-Westra, M. van, Berg, A.E. van den, Donders, J.F. & Jagt, S. van der (2009). Implemented or planned? Experimental research into the perception of landscape changes. (In prep.) (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

Jagt, S. van der & Berg A.E. van den (2009). How do people react to landscape changes? (In prep.) (In Dutch) Working Document No. xx, Wageningen, WOT N&M.

The Dutch 'Nature Management' programme for countryside stewardship: learning from neighbouring countries

Programme: WOT-04-002
Project results for 2008

Project name	The Dutch 'Nature Management' Programme for countryside stewardship: learning from neighbouring countries (continued from 2008)
Project No.	LEI 21033 (2008/8.2)
BAS code	WOT-04-002-132

Knowledge requirements of target group:

The target group would like to know what can be learned from activities in England and Denmark as regards meeting the objectives of the Dutch government's 'Nature Management' countryside stewardship programme (Programma Beheer). The main issue is the role that centralised or decentralised government can play in this respect, and especially the coordination between centralised and decentralised government. How have policy goals been defined? How are policies being evaluated in terms of effectiveness, efficiency and level of participation? What policy instruments are being used for quality assurance? How is ecological quality being assessed and safeguarded?

Research Objective:

Activities in 2007 included a project to describe the regulations used in the Dutch 'Nature Management' programme and a quick scan to find out how schemes comparable to this programme have been organised in neighbouring countries. The 2008 activities included a closer assessment and comparison of the schemes in England and Denmark, as well as the Dutch scheme, focusing on the relation between centralised and decentralised government, especially as regards quality assurance. Quality monitoring systems were analysed on the basis of two policy instruments, monitoring systems to coordinate ecological quality and ex-ante studies and evaluations on the effectiveness and efficiency of nature conservation policies and the level of participation in such policies. We also studied the relations between monitoring systems and evaluations (especially as regards the use of monitoring data in evaluations).

Proposed and achieved research results and products:

Smits, M.J.W., T. Selnes & M.J. Bogaardt, Countryside stewardship in an international perspective – comparing the Netherlands, Denmark and England. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

Metamodels for the 'Nature Planner' system 2008

Programme: WOT-04-002
Project results for 2008

Project name	Metamodels for the 'Nature Planner' system
Project No.	5235014-01 (2008/10.1)
BAS code	WOT-04-002-134

Knowledge requirements of target group:

There is a need for knowledge about changes in vegetation resulting from changes in nutrient deposition levels, hydrology and management. These changes are specified as changes in 'ecological value', in terms of the occurrence of individual species and vegetation types. One aspect that requires further study is the way in which 'ecological value' is characterised.

Research Objective:

The 'Nature Planner' is a system of models that predicts changes in ecological values resulting from changes in nutrient deposition, hydrology and management. There is a need for a simple description of the behaviour of the Nature Planner system, for instance in the form of regression equations or rules-of-thumb for the relations between interventions and effects.

Proposed and achieved research results and products:

Dobben, H.F. van (2009) Meta-model of the 'Nature Planner' system. (In Dutch) WOT Report No. xx, Wageningen WOT N&M.

Developing a geo-database for ecological quality assurance

Programme: WOT-04-002
Project results for 2008

Project name	Developing a geo-database for ecological quality assurance
Project No.	5235059-01 (2008/10.2)
BAS code	WOT-04-002-135

Knowledge requirements of target group:

The Netherlands Environmental Assessment Agency (PBL) is developing indicators for the degree to which ecological goals, intended ecological quality and environmental and spatial conditions are being achieved, and to identify problems encountered in efforts to achieve them. These indicators can be used to support the Quality Assurance programme for the National Ecological Network (EHS), activities to implement the EHS, the Monitoring System for the Agenda for a Living Countryside programme (M-AVP) and the National Spatial Strategy (*Nota Ruimte*). To this end, a number of spatial databases are being developed that will be combined into a geo-database in the present project. These include maps showing the existing natural areas in the Netherlands, such as the Basic Map for Natural Areas. Other databases include the map of 'nature target types' (i.e. combinations of plant and animal species preferred for a particular area), which can be used to derive maps showing 'distance to target', for instance for land use. Compared to a specific map, the design of the geo-database allows many resulting maps to be developed, depending on the components used. This means that the result is tailored to the preferences of different users, who can decide, for instance, whether areas covered by countryside stewardship schemes should be included in the National Ecological Network (EHS) or not. We intend to examine how a geo-database and the range of possible results maps can meet the requirements for the 'A' quality status.

Research Objective:

The project aims to develop a geo-database including geo-information on natural areas that can be used to support PBL and the Quality Assurance programme for the National Ecological Network (EHS). The geo-database will meet the requirements for the 'A' quality status of WUR/WOt.

Proposed and achieved research results and products:

- Texts required to obtain the 'A' quality status have been written and included in a report.
- A trial version of the database has been constructed.
- A map of natural areas for 2007 has been produced and compared with the 2004 version.
- The Basic Map of Wetlands has been completed and included.
- A Master Plan has been designed and included in the database.

Sanders, M.E., J. Clement, H. Kramer, Y. van Randen & I. Woltjer, (2009) GeoOrakel Natuur; A geo-database of natural areas for cartography purposes. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M

Developing an improved land allocation module for the IMAGE model

Programme: WOT-04-002
Project results for 2008

Project name	Developing an improved land allocation module for the IMAGE model.
Project No.	5120393-01 (2008/10.3)
BAS code	WOT-04-002-136

<p><i>Knowledge requirements of target group:</i> The objectives are addressed in the following research questions:</p> <ul style="list-style-type: none"> • How can the current practice of modelling land use/cover types, and specifically the land allocation module of IMAGE, be improved by explicitly addressing land use system types? • How can we simulate spatial and temporal changes in land use systems on a global scale? • How can land use intensities be used to better describe land use system changes? • How can modelling of different land-use intensities be implemented in the IMAGE model, especially in agreement with the LEITAP model? • How can the improved land allocation module contribute to the functioning of the IMAGE model as a whole?
<p><i>Research Objective:</i> Development of an improved land use change module for the IMAGE model in order to make the best use of the current knowledge of dynamics in the land use system and improved assessments of the IMAGE model. Land use intensity and land use system information will be used to describe the dynamics of land use more accurately and improve the linkage to impact assessment modules, such as the GLOBIO module for biodiversity.</p>
<p><i>Proposed and achieved research results and products:</i> <u>Publications:</u> -Letourneau, A., Verburg, P.H., Neumann, K. & Stehfest, E. 2009. Development of a novel method for land allocation within the IMAGE integrated assessment model. WOt Report (to be delivered 31 January 2009) -Neumann, K., Verburg, P.H., Stehfest, E. & Mueller, C. 2009. The yield gap of grain production – a global and regional perspective. To be submitted to a peer-reviewed journal <u>Presentations:</u> -Progress presentation at IMAGE workshops on: 31 March 2008/1 April 2008 (Bilthoven) and 14 and 15 October (Wageningen) -Interactive session on the interpretation/validation of the land use system map at the Wageningen IMAGE workshop (14 and 15 October). - 'A new land allocation model for IMAGE', presentation by Peter Verburg at the Global Land Use Data Workshop, 22-23 May 2008, Vienna, Austria</p> <p>The design of the new land allocation module developed in this project has been produced in constant interaction with the stakeholders at PBL. At several moments, the concepts, data and practicalities were discussed and the design modified. The main result of the project is a prototype of the land allocation model and documentation, including a set of improved data sets for use in the simulations. Consolidation and improvement of the modelling concepts in the next phase of this project should lead to an operational version that has been sufficiently verified to be used in integrated assessments at PBL.</p>

Validating STONE with data from LMM/BIN

Programme: WOT-04-002
Project results for 2008

Project name	Validatiing STONE with data from LMM/BIN
Project No.	5235188-01 and LEI 31409 (2008/10.4)
BAS code	WOT-04-002-137

Knowledge requirements of target group:

The following questions need to be answered to allow a protocol to be developed:

- What data from LMM (the national measuring network for the effects of fertiliser policy) are available for the developers of the STONE nutrient emission model (Alterra, PBL), and how can these data be used to calibrate the model?
- What options are available for developing a calibration and validation procedure?
- Which of these options would be most suitable for the protocol?

Research Objective:

Several approaches could be used to calibrate and validate the STONE instruments with data from the LMM. The choice of a particular approach influences the results and scenario analyses that STONE is used for. The project aims to develop a soundly based protocol for the calibration and validation of STONE.

Proposed and achieved research results and products:

STONE is being validated based on the geographical situation of the farms and the STONE plots. The validation has not revealed any major differences at national scale between the measured and simulated manure applications and nitrate concentrations. Water tables as simulated by STONE are 23 cm lower than the measured values. This result contradicts the validation of the hydrological model based on water table measurements. Significant differences between measured and modelled values have been found at the scale level of groundwater bodies and farm types. These differences are probably largely due to inaccuracies of land use data. The results obtained have been documented in a draft report, which will be completed in the early months of 2009.

Salm, C. van der, L.J.M. Boumans, G.B.M. Heuvelink & T. van Leeuwen (2009) Validating the STONE nutrient emission model using measurement data from the Dutch national measuring network for the effect of fertiliser policy (LMM). (In Dutch) WOt Working Document No. xx, WOT N&M Wageningen.

Exploring options for a cost module for the 'Nature Planner' framework

Programme: WOT-04-002	
Project results 2008	
Project name	Exploring options for a cost module for the 'Nature Planner' framework
Project No.	5235140-01 (2008/10.5)
BAS code	WOT-04-002-138
<p><i>Knowledge requirements of target group:</i> The project aims to: Explore what a 'cost module' should look like (Part A):</p> <ul style="list-style-type: none"> • What questions should such a module be able to answer? • What quality requirements must the system meet? • What input can be used by the system? • What would such a system look like in technological terms? • What investments are needed for the further phases (implementation of the definitive model, feeding the database, linkage to Nature Planner system)? <p>Anticipate the cost-effectiveness assessment that the Netherlands Environmental Assessment Agency (PBL) will be undertaking in 2009 (Part B).</p> <ul style="list-style-type: none"> • Investing in a number of 'white spots' in the cost calculations, with priorities to be further specified. <p>Designing the database of assessment data.</p>	
<p><i>Research Objective:</i> Alterra has in recent years undertaken a number of studies linking the costs and effects of habitat management in natural areas. Several of these studies have linked management measures to their effects on the vegetation in such areas, based on calculations using the Nature Planner system. The cost calculations were based on the cost standards published by Alterra since 2006. So far, no module is available that can link costs to the input and output of the Nature Planner system, and calculations are being done 'by hand', using spreadsheets. The present study explores ways to design systematic cost calculations for habitat management in natural areas. The idea is to develop a 'cost module' that can be linked to the Nature Planner system, but can also be used as a stand-alone module.</p>	
<p><i>Proposed and achieved research results and products:</i> Jong, J.J. de, J.K. van Raffe & G.W.W. Wamelink (2008) Cost module: Developing a cost module for the Nature Planner system. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M</p> <p>This report presents the results of the study commissioned by the Netherlands Environmental Assessment Agency (PBL):</p> <ul style="list-style-type: none"> • Exploring the need for a cost module. • Describing the present Nature Planner system and the database for cost standards. • Quality requirements for the cost modules. • Technical description of the system. • Additional requirements for the Nature Planner system and the database for cost standards. <p>The report is still 'in preparation', as the results of the SELS study on costs in the Nature Planner framework, which are to be included in the report, are not yet available. The results of part B of the present study have been incorporated in the proposal for the project entitled 'Developing a cost module for the Nature Planner system', which is expected to start in 2009.</p>	

ETC-LUSI

Programme: WOT-04-002	
Project results for 2008	
Project name	ETC-LUSI
Project No.	5233463-01 (2008/10.6)
BAS code	WOT-04-002-139
<p><i>Knowledge requirements of target group:</i> The Netherlands Environmental Assessment Agency (PBL) is in need of improved coordination with European research and policies regarding land use and spatial information.</p>	
<p><i>Research Objective:</i> The ETC-LUSI consortium assists the European Environmental Agency (EEA), the European Commission and other European Topic Centres (ECTs) in analysing spatial environmental data and designing European data infrastructures. Contributions from national expertise play an important role in this service.</p>	
<p><i>Proposed and achieved research results and products:</i> Climate Change and Biodiversity in Coastal Zones: Impacts & Adaptation. A literature review. Draft, 2008. W. Geertsema, S. van Rooij & M.J. Epe CAP expenditures and their targeting to environmentally sensitive areas in the Netherlands. RDP payments 2000-2006, 2008. Berien Elbersen, Anne van Doorn & Han Naeff Framework for territorial assessment in the context of present and future rural development. Outline report for Task 5, Berien Elbersen et al., 2008 Regional and territorial development of mountain areas. Integrated assessment of Europe's mountain areas, 2008. Martin Price, Task Manager, based on reports from: Marta Pérez-Soba, Gerard Hazeu & Laure Roupioz, Alterra Marian Mierla & Iulian Nichersu, Danube Delta National Institute, Romania C. Iadanza, A. Trigila, L. Guerrieri, M. Falconi & F. Fumanti, ISPRA, Italy Gebhard Banko, Umweltbundesamt, Austria Juan Arevalo, Universitat Autònoma de Barcelona, Spain Quality assessment of GLOBCOVER global land cover database. ETC-LUSI Activity 1.2.2. Validation GLOBCOVER, 2008. Sander Múcher & Gerard Hazeu. Alterra, Wageningen</p>	

Programme management

Programme: WOT-04-002
Project results for 2008

Project name	Programme management
Project No.	5235165-01
BAS code	WOT-04-002-141

Knowledge requirements of target group:

The purpose of the WOT-04-002 programme, entitled Basic Research for the Nature Policy Assessment Task, is to strengthen the knowledge base that enables the Netherlands Environmental Assessment Agency (PBL) to fulfil its Nature Policy Assessment Task.

Research Objective:

The project aims to ensure the efficient and effective organisation and management of the programme, as part of the 'knowledge cycle' implemented by PBL and WOT.

Proposed and achieved research results and products:

WOT Report (2009, in prep.). Annual reports for 2008. WOT Working Document No. 140, Wageningen, WOT N&M (this report).

Hinssen, P.J.W., 2008. 2009 Plan of Activities. Statutory Research Tasks Unit for Nature & the Environment (WOT-04). Nature Policy Assessment Task. WOT Internal Memorandums 1, Wageningen, WOT N&M.

Reporting on Basic Research programme

Programme: WOT-04-002	
Project results for 2008	
Project name	Reporting on Basic Research programme
Project No.	5232455-03
BAS code	WOT-04-002-142
<i>Knowledge requirements of target group:</i> The Dutch government is in need of knowledge on nature, landscape and the environment in their administrative, economic and social contexts. The Statutory Research Tasks Unit for Nature & the Environment (WOT N&M) supplies this information in particular to the Ministry of Agriculture, Nature and Food Quality (LNV) and the Netherlands Environmental Assessment Agency (PBL). This project plays a major part in this process.	
<i>Research Objective:</i> Unequivocal reporting on the WOt products delivered by the Nature Policy Assessment Task unit. The aim is to create a clear distinction between those PBL publications for which PBL is entirely responsible (such as statutory products and thematic assessments) and results of basic research for which the primary responsibility rests with Wageningen University and Research Centre and the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M), rather than with PBL. Media contacts about the publications are covered by the WOT N&M 'Umbrella Programme'.	
<i>Proposed and achieved research results and products:</i> The following numbers of publications were completed in 2008: WOt Reports: 20 WOt Working Documents: 20 In addition, a 'Knowledge Fair' was held at PBL, and a joint symposium was organised with the Agricultural Economics Research Institute (LEI), on the relation between agriculture and nature in a European context. Finally, contributions were made to lunchtime talks and seminars at PBL.	

Completing 2007 projects

Programme: WOT-04-002
Project results for 2008

Project name	Completing 2007 projects
Project No.	5235283-01
BAS code	WOT-04-002-144

Knowledge requirements of target group:

Work to complete projects from the 2007 Plan of Action. These are activities that require no more than a few person-days. These tasks have been combined into one project to save on administrative costs.

Research Objective:

These are generally activities that were unforeseen or were not or incorrectly budgetted for, such as reviewing project reports and/or adjusting them to reviewers' comments, presentations of project results or other forms of information dissemination.

Proposed and achieved research results and products:

The results and products are reported under the corresponding research projects.

3 WOT-04-003 – Ecological & Environmental Consultancy

3.1 Report on WOT-04-003 programme

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-003: Ecological & Environmental Consultancy

1. Name and No. of Theme
WOT-04-003,
Ecological & Environmental Consultancy
2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:

The Ministry of Agriculture, Nature and Food Quality and the Executive Board of Wageningen University & Research Centre confirm the Statutory Research Tasks for Nature and the Environment (WOT N&M) in a series of implementation contracts. The implementation contract for the Ecological & Environmental Consultancy programme was signed in December 2007, and covers the 2008–2012 period. It defines the tasks and operational agreements ensuing from the statutory advisory tasks.

The budget required for the activities as of 2008 has been definitively allocated by the Ministry of Agriculture, Nature and Food Quality. The action programme for 2008 was drafted and implemented on the basis of the working agreement entitled *WOT-Advisering N&M*. This includes the following additional budget resources:

- * 100,000 euros in the Minerals and Environmental Quality programme (BO-05) for the working groups of the Committee of Experts for the Fertilisers Act;
- * Funding by the Dutch Board for the Authorisation of Pesticides (CTGB), for advice to be supplied.

The sum of 95,000 euros requested for the knowledge base to maintain key expertise for the WOT Ecological & Environmental Consultancy theme was allocated for the first time in 2008. This budget has been invested in the key expertise.

3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

See the implementation contract WOT-Advisering N&M and the corresponding working agreements. These have been specified for 2008 as follows:

Task	Contact	Knowledge required in 2008
Advising LNV on IWC	Stefan Verbunt (LNV-DN)	Dutch contribution to IWC
Advising LNV on ASCOBANS	Stefan Verbunt (LNV-DN)	Dutch contribution to ASCOBANS
Advising LNV on TWO	Stefan Verbunt (LNV-DN)	Dutch contribution to TWO
Antarctica research	Gelare Nader (LNV-DN)	Dutch contribution to international research for protection and management
Committee of Experts on the Fertilisers Act	De Bode (LNV-DK)	Advice on fertilisers policy
Advising CTGB	Werner Pol (CTGB)	Advice on authorisation of pesticides
CTGB instruments	Werner Pol (CTGB)	Instruments for the assessment of pesticide authorisation

4. Proposed and achieved results or interim results for 2008;

Task	Results achieved in 2008
Advising LNV on IWC	Annual progress reports on whale research; annual reports of IWC meetings
Advising LNV on ASCOBANS	Annual reports on ASCOBANS meetings, working group and Harbour Porpoise Recovery project
Advising LNV on TWO	Monitoring results, research paper on seals (once every 5 years), Quality Status Report (Marine Mammals), advice provided on request
Antarctica research	Scientific publications, membership commitments for various international bodies, written advice, participation in expedition (Dec. 2007 – Feb. 2008); preparations for future joint expeditions.
Committee of Experts for the Fertilisers Decree	Advisory reports provided on request
Advising CTGB	Advisory reports provided on request
CTGB instruments	Helpdesk, website, training, quality assurance

3.2 Project reports for WOT-04-003

Survey of WOT-04-003 projects:

439.62009.02 Advising LNV on IWC	105
439.62010.02 Advising LNV on ASCOBANS	106
439.62011.02 Advising LNV on TWO	107
439.62013.02 Antarctica research	108
5232850-01 Committee of Experts on the Fertilisers Act	110
5233523-01 Maintenance and support for software packages for Ctgb	113
5235040-01 Programme management for the WOT Ecological & Environmental Consultancy programme	115

Advising LNV on IWC

Programme: WOT-04-003
Project results in 2008

Project name	Advising LNV on IWC
Project No.	439.62009.02
BAS code	WOT-04-003-003

Knowledge requirements of target group:

The Netherlands is a member of the International Whaling Commission (IWC) because the Dutch government wants to be able to influence international policies on the management of cetaceans. The position adopted by the Dutch delegation in the IWC is in favour of protection. Since several of the world's countries hold a different opinion on this subject, it is important that the Dutch preferences for policies and the ensuing management are based on solid scientific evidence. The instruments the Dutch government uses to influence international policymaking are its participation in the Scientific Committee, which formulates the scientific advice for all whale species, and its contributions to Committee meetings.

Research Objective:

The project contributes to the implementation of the government's policy on whale management. Participating in the Scientific Committee ensures that the Dutch point of view co-determines the scientific advice provided by this Committee to the Commission. Members of the project team take part in the annual Commission meetings as members of the Dutch delegation, in order to assist the delegation in its decisions. This is particularly important when ad hoc advice is required on the consequences of compromise proposals tabled during the meetings.

The ultimate goal of the project is to ensure that the policy on cetaceans formulated by the Dutch government is heard in the appropriate forum and to monitor whether the various aspects of this policy are reflected in the actual management.

Proposed and achieved research results and products:

IWC 2008. Netherlands. Progress report on cetacean research, May 2007 to May 2008, with statistical data for the calendar year 2007. compiled by Meike Scheidat. 2008. *Ir*. Annual Report of the International Whaling Commission. IWC, Cambridge, UK.

Castro, C., Acevedo, J., Allen, J., Dalla Rosa, L., Flórez-González, L., Aguayo-Lobo, A., Rasmussen, K., Llano, M., Garita, F., Forestell, P., Secchi, E.R., Garcia Godos, I., Ferrina, D., Kaufman, G., Scheidat, M. & Pastene, L.A. 2008. Migratory movements of humpback whales (*Megaptera novaeangliae*) between Machalilla National Park, Ecuador and Southeast Pacific. Working paper presented at the 60th IWC, Santiago de Chile, Chile. SC/60/SH. 6 pages

Scheidat, M. 2008. Report of the Scientific Committee meeting of the International Whaling Commission, Santiago, Chile 1-13 June 2008. 17 pages

Advising LNV on ASCOBANS

Programme: WOT-04-003
Project results in 2008

Project name	Advising LNV on ASCOBANS
Project No.	439.62010.02
BAS code	WOT-04-003-004

Knowledge requirements of target group:

The status of small cetaceans in the North Sea and Baltic Sea is a cause of concern. Harbour porpoise populations in particular have been severely reduced over the last few decades. In addition, there is evidence (in the form of data on stranded animals and sightings) that other species are also decreasing. In order to stop the decline and promote recovery, a number of countries, including the Netherlands, have concluded the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), under the auspices of the Bonn Convention. To ensure the implementation of the Agreement and the achievement of its goals, the member states have drawn up a Conservation and Management Plan, with a corresponding Work Plan. The Work Plan is evaluated every three years during a meeting of all member states (Meeting of Parties, or MOP), and a new Plan formulated. The draft Work Plan is drawn up by the Advisory Committee, which also implements the definitive Work Plan. The Netherlands contributes to the work of this Committee.

Research Objective:

The project aims to contribute to the implementation of Dutch policies on the management of small cetaceans in the area covered by the Agreement, especially the Dutch commitments relating to its own coastal waters, including the Dutch continental shelf. Active participation in the Advisory Committee ensures that Dutch views on the conservation and management of small cetaceans, and Dutch research activities in this field, are presented at international forums and contribute to the successful achievement of ASCOBANS' objectives. The Department of Nature of the Dutch Ministry of Agriculture, Nature and Food Quality has asked the IMARES research institute to represent the Netherlands as a member of the Advisory Committee and to act as scientific adviser to the Dutch delegation at the MOP. In addition, incidental advice is provided to the Ministry of Agriculture, Nature and Food Quality as required. This project helps implement the intended national and international policies on the protection and management of small cetaceans. In addition, the feedback from the results achieved at the MOP and in the Advisory Committee supports the internal Dutch decision-making process on these issues and keeps it up to date as required.

Proposed and achieved research results and products:

- Conservation Plan for Harbour Porpoises (*Phocoena phocoena* L.) in the North Sea, final draft to be presented at MOP 6 in 2009.
- Report of the 15th Meeting of the Advisory Committee to ASCOBANS, Bonn, Germany, 31.3. to 4.4.2008 (www.ascobans.org)

Advising LNV on TWO

Programme: WOT-04-003
Project results in 2008

Project name	Advising LNV on TWO
Project No.	439.62011.02
BAS code	WOT-04-003-005

Knowledge requirements of target group:

Policies on and management of Common and Grey Seals and Harbour Porpoise in and near the Wadden Sea have been laid down in the 5-year Seal Management Plan (SMP), which has been agreed by the responsible ministers in the three countries adjoining the Wadden Sea. This SMP is the practical specification of a Trilateral Wadden Sea Agreement (Trilaterale Waddenzee Overeenkomst, TWO) as confirmed by the Agreement on the Conservation of Seals in the Wadden Sea, concluded under the Bonn Convention. The responsible authorities need research and advice to support the policymaking process for this SMP, as well as its implementation and the resulting recommendations. In addition, there is a need for advice on the international management of seals outside the Wadden Sea.

IMARES, and specifically Dr Sophie Brasseur, was requested by the Ministry of Agriculture, Nature and Food Quality (LNV) to provide the research and advice for the Dutch contribution to the trilateral agreement and the advice on international management of seals outside the Wadden Sea.

Research Objective:

The project aims to contribute to the implementation of the Dutch government's policy on the management of seals and porpoises in the Wadden Sea. This contribution takes the form of participation in activities and meetings of the Trilateral Seal Expert Group (TSEG), which are organised and implemented jointly with the Common Wadden Sea Secretariat (CWSS). In addition, the project has two secondary aims: (a) assisting and advising the Department of Regional Affairs, southern division, of the Ministry of Agriculture, Nature and Food Quality as regards seal management in the south-western Delta region and (b) assisting and advising the Dutch government, specifically the Department of Nature of the Ministry of Agriculture, Nature and Food Quality, to support its position on international issues relating to the management of seals, especially endangered species, outside the Wadden Sea area.

Proposed and achieved research results and products:

-Aerial Surveys of Harbour Seals in the Wadden Sea in 2008: Back to Pre-epizootic Level, and Still Growing: Wadden Sea Harbour Seal Population in 2008, by the Trilateral Seal Expert Group (TSEG) (25 November 2008) <http://www.waddensea-secretariat.org/news/news/Seals/Annual-reports/seals2008.html>

Antarctica research

Programme: WOT-04-003
Project results in 2008

Project name	Antarctica research
Project No.	439.62013.02
BAS code	WOT-04-003-002

Knowledge requirements of target group:

Ecological knowledge that is relevant to international habitat management and protection in Antarctica (as regards fisheries management; zoning and protected areas; protection of species and biodiversity; climate-related problems). The target group wants to know the significance of sea ice for the population sizes and diversity of Antarctic animal species.

Research Objective:

As a voting party to the Antarctic Treaty since 1991, the Dutch government is committed to investing in research in the Antarctic region. To this end, various ministries have jointly initiated the Netherlands AntArctic Programme (NAAP). In the context of WOT N&M, the Dutch Ministry of Agriculture, Nature and Food Quality has commissioned Wageningen IMARES (Institute for Marine Resources & Ecosystem Studies) to do research to support the Dutch voting position and stance in the treaty system.

Proposed and achieved research results and products:

Refereed international journal publications

- Creuwels, J.C.S., Van Franeker, J.A., Doust, S.J., Beinssen, A., Harding, B. & Hentschel, O. 2008. Breeding strategies of Antarctic Petrels *Thalassoica antarctica* and Southern Fulmars *Fulmarus glacialisoides* in the high Antarctic and implications for reproductive success. *IBIS* 150: 160-171.
- Flores, H., Haas, C., Van Franeker, J.A. & Meesters, E. 2008. Density of pack-ice seals and penguins in the western Weddell Sea in relation to ice thickness and ocean depth. *Deep-Sea Research II* 55: 1068-1074.
- Flores, H., Van de Putte, A.P., Siegel, V., Pakhomov, E.A., Van Franeker, J.A., Meesters, H.W.G. & Volckaert, F.A.M. 2008. Distribution, abundance and ecological relevance of pelagic fishes in the Lazarev Sea, Southern Ocean. *Marine Ecology Progress Series* 367: 271-282
- Krapp, R.H., Berge, J., Flores, H., Guliksen, B. & Werner, I. 2008. Sympagic occurrence of Eusirid and Lysianassid Amphipods under Antarctic Pack Ice. *Deep-Sea Research II* 55: 1015-1023.

Other publications

- Van Franeker, J.A. 2008. Chapter 8: Antarctic Tourism. pp 155-164 in: Rijnsdorp, A.D. & Heessen, H.J.L. (eds.) 2008. Biodiversity of the high seas: Final Report Lot 1. Wageningen IMARES Report C085/08. IMARES, IJmuiden 265pp.
- Van de Putte, A.P. 2008. Ecology and evolution of fishes in the Southern Ocean, with special focus on the myctophid *Electrona antarctica*. PhD Thesis (7 Nov 2008), Katholieke Universiteit Leuven, 200pp. ISBN 978-90-8649-215-2.

In press (*expedition ANT-24-2 papers*)

- Flores, H., Van Franeker, J.A., Feij, B., Meijboom, A. & Van Dorssen, M. (*In press*).

Macrozooplankton and micronekton in the surface layer and under sea ice. Berichte zur Polarforschung.....

Van Franeker, J.A., Feij, B., Flores, H., Meijboom, A. & Van Dorssen, M. (*In press*). Marine birds and mammals in the Lazarev Sea: the summer influx (Polarstern ANT-24-2, LAKRIS summer expedition). Berichte zur Polarforschung.....

Van Franeker, J.A., Feij, B., Meijboom, A. & Müller, E. (*In press*). Sea ice conditions during Polarstern expedition ANT-24-2, December 2007 - January 2008. Berichte zur Polarforschung....

Conference posters/presentations/abstracts

Van Franeker, J.A., Feij, B., Meijboom, A., Van Dorssen, M. & Flores, H. 2008.
 I The Importance of sea ice – predators (van Franeker et al.)
 II The importance of sea ice - prey (Flores et al)
 III Amazing diversity (Riehl et al). Posters presented at Koninklijke Nederlandse Akademie van Wetenschappen, Polar Symposium, 14 May 2008, Amsterdam. (Program and Abstracts pp 20-22).

Van Franeker, J.A., Flores, H., Feij, B., Meijboom, A. & Van Dorssen, M. 2008. The Importance of sea ice - predators. Poster S1.8/P89. Polar Research - Arctic and Antarctic Perspective in the International Polar Year. SCAR/IASC IPY Open Science Conference, St.Petersburg, Russia, 8-11 July 2008. Abstract Volume p 270.

Flores, H., Van Franeker, J.A., Meijboom, A., Van Dorssen, M. & Feij, B. 2008. The Importance of sea ice - prey. Poster S1.8/P25. Polar Research - Arctic and Antarctic Perspective in the International Polar Year. SCAR/IASC IPY Open Science Conference, St.Petersburg, Russia, 8-11 July 2008. Abstract Volume p 249.

Flores, H., Van Franeker, J.A., Siegel, V., Strass, V., Haraldson, M., Bathmann, U. & Wolff, W.J. 2008. Distribution and abundance of euphausiids under sea ice. Oral contribution modified from Poster S1.8/P24. Polar Research - Arctic and Antarctic Perspective in the International Polar Year. SCAR/IASC IPY Open Science Conference, St. Petersburg, Russia, 8-11 July 2008. Abstract Volume p 248-249. (Awarded "Best Oral Presentation Early Career Scientist").

Van De Putte, A.P., Flores, H., Van Franeker, J.A. & Volckaert, F.A.M. 2008. The Lanternfish *Electrona antarctica* in the Southern Ocean: an energetic and seasonal perspective. Poster S1.8/P87. Polar Research - Arctic and Antarctic Perspective in the International Polar Year. SCAR/IASC IPY Open Science Conference, St. Petersburg, Russia, 8-11 July 2008. Abstract Volume p 269. (Awarded "Best Poster Presentation Early Career Scientist").

Riehl, T., Brenke, N., Flores, H., Zapata Guardiola, R. & Schroedl, M. 2008. Amazing Diversity. Poster S1.8/P70. Polar Research - Arctic and Antarctic Perspective in the International Polar Year. SCAR/IASC IPY Open Science Conference, St.Petersburg, Russia, 8-11 July 2008. Abstract Volume p 263.

Creuwels, J.C.S., Engelhard, G.H. & Van Franeker, J.A. 2008. Foraging strategies of Fulmarine petrels in Antarctica. Oral Contribution Nr 054, p.37 in Fourth International Albatross and Petrel Conference, Cape Town, 11-15 August, 2008. Conference Programme and Abstracts.

Information in the form of photos, videos and texts on many websites, including:
 - www.pooljaar.nl/poolijs/
 - www.kennisonline.wur.nl/WOT/WOT-04/003/002
 - www.jafweb.nl

Plus the sites of AWI, IMARES; NWO; Cousteau Society, Youtube ...

Media attention & contributions:
 Radio: Vroege Vogels; VPRO Noorderlicht (Dutch radio programmes),
 Printed media: Noord-Hollands Dagblad; Resource; photographs contributed to books.

Committee of Experts on the Fertilisers Act (CDM)

Programme: WOT-04-003	
Project results in 2008	
Project name	Committee of Experts on the Fertilisers Act (CDM)
Project No.	5232850-01
BAS code	WOT-04-003-008
<p><i>Knowledge requirements of target group:</i> Providing a scientific basis for the standards, default values and fertiliser recommendations in the Fertilisers Act. The Fertilisers Act regulates the nitrogen and phosphate flows in Dutch agriculture in order to reduce the environmental impact of excess nitrogen and phosphate.</p>	
<p><i>Research Objective:</i> Drawing up recommendations to provide a solid scientific basis for standards, default values and fertiliser recommendations for the Fertilisers Act.</p>	
<p><i>Proposed and achieved research results and products:</i> Recommendations to LNV:</p> <ul style="list-style-type: none"> • 1 April Protocol for the assessment evaluation of substances under the Fertilisers Act. • Summary of manure market monitoring data in 2006. • Summary of manure market monitoring data in 2007. • Summary of manure market monitoring data in 2008. • 28 January 2008. Detailed review of nutrient balances for animal housing units and gaseous nitrogen losses from intensive livestock farming. • 27 March 2008. Updated nitrogen fertiliser recommendations for fruit trees. • 27 March 2008. Updated nitrogen fertilisation recommendations for roses. • 23 April 2008 Review of Mambo model. • 22 June 2008. Draft recommendation on fertiliser value (parliamentary motion Mr Waalkens). • 3 December 2008. Uptake, retention and excretion of nitrogen, phosphorus and potassium by red deer. • 8 October 2008. Requests to include Humeststof, NatuC, Aquakalk and Calciumgranulaat in Annexes I and III of the Implementation Decision for the Fertilisers Act. • 3 December 2008. Analysis of fertilisation and yields of production grasslands and fodder maize at dairy farms required ('BIN2'). • Updated nitrogen fertilisation recommendations for leeks. Draft sent to LNV by e-mail on 18 December. • Measures to reduce ammonia emissions from aboveground manure spreading. • Throughout the year. About 10 assessments of applications, supplementary information and objections to previous decisions under the regulations on exemptions for manure production rights under the fertilisers Act (POR) (not published on website). <p>Reports and products:</p> <ul style="list-style-type: none"> • Aarts, H.F.M, C.H.G. Daatselaar & G. Holshof (2008) Fertilisation, fertiliser usage and yields of grassland and fodder maize on dairy farms. (In Dutch) Report No. 208, Plant Research International. • Dijk, T.A. van, J.J.M. Driessen, P.A.I. Ehlert, P.H. Hotsma, M.H.M.M. Montforts, S.F. Plessius en O. Oenema, 2008. Protocol for the assessment of substances under the Fertilisers Act. Version 1.1. (In Dutch) Wageningen, WOT N&M. Working Document No. 2008/85. 	

- Groenestein, C.M., C. van Bruggen, P. Hoeksema, A.W. Jongbloed & G.L. Velthof, 2008. Detailed assessment of animal housing balances and gaseous nitrogen losses from intensive livestock farming. (In Dutch) WOt Report No. 60, Wageningen, WOT N&M.
- Hoogeveen, M.W. & H.H. Luesink, Summary of 2008 monitoring data on the Dutch manure 'market'. (In Dutch) WOt Report No. 86, Wageningen, WOT N&M.
- Hoogeveen, M.W., H.H. Luesink & J.N. Bosma. 2008. Summary of 2007 monitoring data on the Dutch manure 'market'. (In Dutch) WOt Report No. 72. Wageningen, WOT N&M.
- Hoogeveen, M.W., H.H. Luesink & J.N. Bosma. 2008. Summary of 2006 monitoring data on the Dutch manure 'market'. (In Dutch) Wageningen.
- Jongbloed, A.W. & V.A. Hindle. 2008. Uptake, retention and excretion of nitrogen, phosphorus and potassium by red deer. (In Dutch) Report No. 159, Animal Science Group, Wageningen UR.
- Luesink, H.H., P.W. Blokland, J.N. Bosma & M.W. Hoogeveen. 2008. Monitoring the 2007 manure market. Background report. (In Dutch) LEI Report No. 2008-041. Den Haag, LEI.
- Schröder, J.J., J.C. van Middelkoop, W. van Dijk & G.L. Velthof, 2008. Quick Scan on nitrogen replacement values in animal manure: knowledge update and potential consequences of adjusting default values. (In Dutch) WOt Report No. 85. Wageningen, WOT N&M 55 blz.
- Velthof, G.L. (ed). Workshop on manure market. Programme and papers Workshop on the manure market. Ede, Reehorst, 24 June 2008. Bode, M. & O. Oenema. Monitoring the manure market. (In Dutch); including the following essays:
- Grinsven, H. van & H. Verbruggen, The manure market from an economic perspective. (In Dutch)
- Grinsven, H. van, O. Oenema & J. Willems. Demand for animal manure and standard setting for phosphate utilisation. (In Dutch)
- Verbruggen H. Developments in the manure market: an economic enquiry from a European perspective. (In Dutch)
- Dijk, van W. P. Dekker & J. de Haan, Manure uptake by arable farms: what is the total demand? (In Dutch)
- Tamminga S. & L. Sebek, Animal feeds and manure policy. (In Dutch)
- Verdoes, N. G. Meijer, J. Uenk & H. Verkerk, Manure processing: deriving greater value from manure. (In Dutch)
- Wempe J. Sustainability and innovation. (In Dutch)
- Heijmans M. Farmers and authorities need courage to close mineral cycles. (In Dutch)

Reports in the process of being completed:

- Dijk, W. van & H. ten Berge (Eds) (2009) Agricultural nitrogen use in selected EU countries: Comparison of recommendations and restrictions. PPO report (in process of being completed).
- Schröder, J.J., H.F.M. Aarts, J.C. van Middelkoop, G.L. Velthof, J.W. Reijs & B. Fraters. 2008. Nitrates Directive requires limited inputs of manure and mineral fertilizer in dairy farming systems. Report by Plant Research International, Wageningen (in process of being completed)
- Velthof, G.L., C. van Bruggen, C.M. Groenestein, B.J. de Haan, M.W. Hoogeveen en J.F.M. Huijsmans 2008. Methodology to calculate ammonia emissions by Dutch agriculture. (In Dutch) WOt Report No. 70, Wageningen, WOT N&M (in process of being completed).
- Velthof, G.L. (ed). 2009. Nitrogen application standards and fertiliser replacement values. A compilation of studies by CDM to provide a solid basis for the Fourth Action programme of the Nitrates Directive. (In Dutch) WOt Working Document (in process of being completed).

Presentations:

- Gerard Velthof (CDM) A methodology to calculate ammonia emissions from Dutch agriculture. (In Dutch) Ammonia Symposium, Utrecht, 9 June 2008.
- Hans van Grinsven (MNP) 'Views on the manure market'. (In Dutch) Presentation at CDM

workshop 'Towards a state of equilibrium on the manure market'. Ede, 24 June 2008.

- Oene Oenema (CDM) 'Exploring possible solutions for the manure market'. (In Dutch) Presentation at CDM workshop 'Towards a state of equilibrium on the manure market'. Ede, 24 June 2008.

Memorandums

- Dijk, W. van & J. Schröder. Calculations to provide a solid basis for nitrogen application standards for the Fourth Action programme. (In Dutch) Version 14 November 2008
- Ehlert, P.A.I., E. Temminghoff, A. Reijneveld & Oenema, O. Cover memo 'Towards phosphate status dependent phosphate application standards'. (In Dutch) 19 December 2008.
- Ehlert, P.A.I. Phosphate applications standards based on the phosphate status of the soil. (In Dutch) Memorandum 9 December 2008. Alterra Soil Science Centre
- Oenema O. Guidelines for reports to the Committee of Experts on the Fertilisers Act (CDM). (In Dutch)
- Oenema O. Guidelines for review reports to the Committee of Experts on the Fertilisers Act (CDM). (In Dutch)
- Velthof, G.L. & O. Oenema Regional differentiation of nitrogen application standards in the Netherlands to comply with Nitrates Directives. 5 February 2008
- Velthof, G.L., H. ten Berge, J. Schröder, W. van Dijk & W. van Geel. Expert assessment of nitrogen-saving measures. (In Dutch) 1 July 2008

Maintenance and support for software packages for the Dutch Board for the Authorisation of Plant Protection Products and Biocides (Ctgb)

Programme: WOT-04-003
Project results in 2008

Project name	Maintenance and support for software packages for the Dutch Board for the Authorisation of Plant Protection Products and Biocides (Ctgb)
Project No.	5233523-01
BAS code	WOT-04-003-006

Knowledge requirements of target group:

No specific knowledge development is required; the project uses available knowledge. What is required is quality assurance for the software used to assess authorisation applications, support for users of the software and elimination of any bugs in the software.

Research Objective:

The project aims to contribute to the above objective by providing high-quality maintenance and support for the software packages being used by the Dutch Board for the Authorisation of Plant Protection Products and Biocides (Ctgb).

Proposed and achieved research results and products:

In the course of 2008, the helpdesk has assisted users of the TOXSWA, SWASH, PEARL and GeoPEARL models. The assistance consisted of advice on the use and/or installation of the software. The TOXSWA-SWASH helpdesk (Adriaanse, Beltman, de Jong, Ter Horst, & Te Roller) answered 16 questions on TOXSWA and 13 questions on SWASH. The PEARL-GeoPEARL helpdesk (van den Berg, Boesten & van Kraalingen) answered 14 questions on PEARL and 5 questions on GeoPEARL.

In March 2008 we brought out a bug-fix release for FOCUS-SWASH, allowing SWASH to be used on Windows platforms in different languages. An updated version of the user manual was prepared for this version of FOCUS-SWASH. The beta version of FOCUS-SWASH was completed in late 2008, allowing users to simulate the revised run-off scenarios.

A draft report on the hydrology and substance transport processes in FOCUS_TOXSWA was completed, in the context of the quality assurance project. The documentation for FOCUS-TOXSWA_221 was completed in order to be eligible for the 'A' quality status for software. A document describing the new functionalities in GeoPEARL version 3.3.3 compared to version 2.2.2 was prepared. A procedure for installing FOCUS-PEARL_333 on Vista platforms was designed and documented.

Products:

1. Berg, F. van den, J. te Roller, P.I. Adriaanse & J.G. Groenwold. FOCUS_SWASH v 2.1 software, 2008. Bug-fix release for the use of SWASH for EU authorisation of crop protection agents. (In Dutch)
2. Berg, F. van den, P.I. Adriaanse, J. A. te Roller, V.C. Vulto & J.G. Groenwold. SWASH Manual 2.1 - User's Guide version 2. WOt Working Document No. 83, 60 pp.

3. Berg, F. van den, A. Tiktak, J.G. Groenwold, D.W.G. van Kraalingen, A.M.A. van der Linden & J.J.T.I. Boesten, 2008. Documentation update for GeoPEARL_3.3.3, WOt Working Document No. 103, 24 pp.
4. Kraalingen, D.W.G. & J. Groenwold, 2008. Procedure for installing FOCUS_PEARL_333 on Windows Vista platforms. (In Dutch) 5pp.
5. Berg, F. van den, W.H.J. Beltman & P.I. Adriaanse, 2008. Documentation on FOCUS_TOXSWA_221 for the purpose of obtaining the 'A' quality status. (In Dutch)
6. Beltman W.H.J., A. de Jong & P.I. Adriaanse, 2008. Beta version of FOCUS_TOXSWA_R with revised run-off scenarios for the purpose of EU assessment of surface water exposure. (In Dutch)
7. Adriaanse, P.I., 2008. TOXSWA model for behaviour of pesticides in small surface waters. Description of processes and hydrology in TOXSWA (version FOCUS including metabolites). Draft report November 2008, 78 pp.

Programme management for the WOT Ecological & Environmental Consultancy programme

Programme: WOT-04-003	
Project results in 2008	
Project name	Programme management for the WOT Ecological & Environmental Consultancy programme
Project No.	5235040-01
BAS code	WOT-04-003-007
<p><i>Knowledge requirements of target group:</i> Supervision, planning and control are required to ensure effective and efficient resource use and project implementation in the WOT-04-003 programme.</p>	
<p><i>Research Objective:</i> Supervision and planning & control activities aim at an effective and efficient use of resources and implementation of projects under the WOT Ecological & Environmental Consultancy programme.</p>	
<p><i>Proposed and achieved research results and products:</i> Effective and efficient use of resources and implementation of projects under the WOT-04-003 programme.</p> <p>Annual reports for *2007*, WOT-04-003 Ecological & Environmental Consultancy. Wot Working Document No. 94.</p>	

4 WOT-04-005 – Monitoring the Agenda for a Living Countryside (M-AVP)

4.1 Report on WOT-04-005 programma

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-005: Monitoring the Agenda for a Living Countryside

1. Name and No. of Theme

WOT-04-05: Monitoring the Agenda for a Living Countryside programme (M-AVP)

2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:

The 'Agenda for a Living Countryside' (AVP) was presented in April 2004 as a joint policy strategy by the Netherlands Ministries of Agriculture, Nature and Food Quality (LNV), Housing, Spatial Planning and the Environment (VROM) and Transport, Public Works and Water Management (V&W), with the intention of ensuring that rural areas are prepared for future changes. The Agenda for a Living Countryside programme is based on an integrated approach and focuses on economic, ecological, social and cultural aspects of rural areas. Monitoring is necessary to test the progress made by the policy strategy and to explain the degree to which the policies designed are actually implemented. Policy implementation is based on the Multi-Year Programme for the Agenda for a Living Countryside (MJP2), which was completed in February of 2006, and on the National Rural Areas Investment Budget Act (WILG).

In 2008, the focus of the M-AVP programme shifted to some extent from programme development to programme management. The objective of the M-AVP programme is to ensure the systematic collection, centralised storage and presentation of monitoring data required to evaluate the effectiveness and efficiency of the rural areas policy defined in the AVP. The reporting, justification and evaluation system requires data regarding effects, results, achievements and budgets. The M-AVP acts as the central data manager and has to coordinate and organise the necessary data logistics and provide the centralised data storage (digital records). The system only stores the processed results of measurements, based on a well-defined measurement strategy, rather than the underlying measurement data. The system can then be used to generate reports and possibly also data presentations by means of a viewer.

The monitoring system also serves to signal relevant issues: developments in the rural areas policy field that do not relate directly to the policy objective but may have effects that require new policies or changes in existing policies. In addition, monitoring and evaluation can make essential contributions to efforts to improve the transparency of policies and their implementation, as well as to knowledge development, knowledge dissemination and justification of rural areas policy.

3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

- What assessment strategies will be used for the effect indicators?
- What are the 2007 values of the effect indicators (baseline assessment)?
- What will the information system to monitor the AVP look like?
- How can quality assurance for a system like the AVP Monitor be achieved?
- How can the 'messages' produced by the M-AVP be made accessible to a larger audience?
- How can the use of digital national policy maps be improved?

4. Proposed and achieved results or interim results for 2008:

The following products have been delivered:

- Annual Plan of Action for the entire M-AVP programme for 2008.
- Database and updated viewer, including standardised reporting for Parliament and a draft input module.
- Proposal to redesign the database.
- Factsheets for all MJP2 (second Multi-Year Programme) indicators for AVP and brochure on baseline assessment.
- Advice on quality assurance.
- Definitive version of WOT Study.
- Preliminary content for database.
- User's guide for digital national policy maps.
- Trial version of visualisation website. Panoramic photographs of rural areas.
- Coordination of the monitoring and evaluation activities for the M-AVP system and coordination with other monitoring initiatives (National Spatial Strategy, ILG-PEIL)

Some of the products intended for 2008 have not been completed:

- Definitive version of input module.
- Technical reporting.
- Definitive version of research paper.

4.2 Project reports for WOT-04-005

Survey of WOT-04-005 projects:

5231932-03		
Using policy maps		127
5232767-01		
M-AVP information system		128
5232768-01		
Documentation for the M-AVP		129
5232769-01		
Coordination of M-AVP programme		130
5233912-01		
Quality assurance for indicators		131
5234064-01		
Baseline assessment of ecological effect indicators		132
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Baseline assessment of indicator of socioeconomic viability		133
5234113-01		
Baseline assessment of effect indicators for the agricultural reconstruction areas		134
5234132-01		
Baseline assessment of effect indicators for recreation		135
5235045-01		
Effects of the Monitoring system for the 'Agenda for a Living Countryside' (M-AVP)		136
5235067-01		
Management of Monitoring system for the Agenda for a Living Countryside (M-AVP)		137
5235473-01		
Visualising the Monitoring system for the Agenda for a Living Countryside (M-AVP)		138

Using policy maps

Programme: WOT-04-005
Project results in 2008

Project name	Using policy maps
Project No.	5231932-03
BAS code	WOT-04-005-014

Knowledge requirements of target group:

The target group wants to be able to effectively use policy data contained in digital maps when examining and interpreting these maps, for instance when comparing a map showing proposed national policy options with one showing accurate regional data. This need arose as users realised that the publication of the second Multi-Year Programme (MJP2) could have been accompanied by a viewer with digital maps, which had been omitted out of fear of incorrect interpretations.

Research Objective:

Improving the use of digital national policy maps.

Proposed and achieved research results and products:

Ideas for a user's guide and options for visualisation were presented for evaluations to the participants at a workshop.

The user's guide is available at www.geo3.nl and as a Working Document: L.A.E. Vullings, Connie Blok, Manon van Heusden, Anoeek Huisman, Guido Vonk & Jan-Maurits van Linge. Using Digital National Policy Maps effectively. Guide to the development of digital national policy maps. (In Dutch) WOT Working Document.

M-AVP information system

Programme: WOT-04-005
Project results in 2008

Project name	M-AVP information system
Project No.	5232767-01
BAS code	WOT-04-005-003

Knowledge requirements of target group:

The target group is in need of a viewer-accessible system for the systematic collection, centralised storage and presentation of monitoring data required to evaluate the effectiveness and efficiency of the rural areas policy defined in the AVP.

Research Objective:

The aim of this project is to complete the implementation of the Monitoring system for the Agenda for a Living Countryside.

Proposed and achieved research results and products:

The website will soon be accessible via www.vitaalplatteland.nu through the 'monitoring' option. The input module will be used as of 1 April 2009 to survey the data supplied by the provincial authorities, and the first module for standardised reporting will be completed in the early months of 2009, after which reports to Parliament can be generated as soon as provincial data have been entered.

Documentation for the M-AVP

Programme: WOT-04-005
Project results in 2008

Project name	Documentation for the M-AVP
Project No.	5232768-01
BAS code	WOT-04-005-004

Knowledge requirements of target group:

There is a need to understand the process by which the Monitoring system for the Agenda for a Living Countryside (M-AVP) was created and the lessons which can be drawn from this process; this has been the subject of a WOt Study and a journal article. In addition, a report on the baseline assessment of the effects of the M-AVP is required for the government's spring policy memorandum.

Research Objective:

- Completing the WOt Study.
- Completing the journal article.
- Preparing a report on the baseline assessment of the effect indicators.

Proposed and achieved research results and products:

The WOt Study will be presented to Mr A. van de Zande on 24 February 2009. L.A.E. Vullings. 2009. (In Dutch) WOt Study 7

The report on the baseline assessment of the effect indicators has been submitted to policy departments for approval: Agricola, H, P.Sinnige & L.A.E. Vullings. 2009. Report on the baseline assessment of the effect indicators for the Monitoring system for the Agenda for a Living Countryside: The State of the Countryside. (In Dutch) WOt Report.

The journal article awaits completion.

Coordination of M-AVP programme

Programme: WOT-04-005
Project results in 2008

Project name	Coordination of M-AVP programme
Project No.	5232769-01
BAS code	WOT-04-005-005

Knowledge requirements of target group:

The target group is interested in an efficient and effective programme and the timely availability of realistic action plans, evaluations and interim reports.

Research Objective:

The project aims to ensure an efficient and effective programme.

Proposed and achieved research results and products:

The project result will be an efficient and effective programme.

Quality assurance for indicators

Programme: WOT-04-005	
Project results in 2008	
Project name	Quality assurance for indicators
Project No.	5233912-01
BAS code	WOT-04-005-007
<p><i>Knowledge requirements of target group:</i> The Department of Rural Affairs of the Dutch Ministry of Agriculture, Nature and Food Quality would like to know whether the Monitoring system for the Agenda for a Living Countryside (M-AVP) meets the existing and future requirements, and how the quality of the M-AVP can be improved and assured (where necessary).</p>	
<p><i>Research Objective:</i></p> <p>The original objectives were:</p> <ol style="list-style-type: none"> 1. Designing an assessment framework and procedure (based on ISO standards) to test the quality of indicators, for the purpose of quality assurance. 2. Using this framework to test the quality of a selection of indicators, viz. a number of indicators for the baseline assessments of M-AVP and the Habitats Directive. 3. Exploring opportunities to improve the quality of indicators (if required). This involves examining ways of dealing with the mismatch between data supply and demand. 4. Writing a report on the findings of these case studies. The report will also include recommendations for improved quality assurance (risk reduction) and for improving the quality of existing indicators (if required). <p>After consultations with the client, these objectives have been adapted and expanded to include the evaluation of recommendations for possible quality improvement and assurance for M-AVP as a policy information system, that is, the system as a whole, rather than focusing purely on the indicators. The study therefore aims to answer the following questions:</p> <ol style="list-style-type: none"> 1. What requirements does the quality of a policy information system have to meet, or should such a system be able to meet? 2. Does the M-AVP meet these requirements? 3. How can the quality of the M-AVP system be improved and assured in the future (if necessary)? 	
<p><i>Proposed and achieved research results and products:</i> The findings of the study are currently being recorded in a report entitled 'The quality of a policy information system: quality assurance recommendations for the Monitoring system for the Agenda for a Living Countryside.' (In Dutch) (Schmidt et al., In prep).</p>	

Baseline assessment of ecological effect indicators

Programme: WOT-04-005	
Project results in 2008	
Project name	Baseline assessment of ecological effect indicators
Project No.	5234064-01
BAS code	WOT-04-005-009
<p><i>Knowledge requirements of target group:</i> Effective monitoring of the effect indicators requires baseline assessments with which follow-up assessments can be compared.</p>	
<p><i>Research Objective:</i> Implementing baseline assessments for the ecological effect indicators.</p>	
<p><i>Proposed and achieved research results and products:</i> The outcome of the baseline assessment for the first two indicators will be available from March 2009, in the monitoring system (accessible at http://www.vitaalplatteland.nu/content/lopendeZaken/monitoring.html) and in a report: Agricola, H, P.Sinnige & L.A.E. Vullings. 2009. Report on the baseline assessment of the effect indicators for the Monitoring system for the Agenda for a Living Countryside: State of the Countryside. (In Dutch) WOt Report. The third indicator is still being developed.</p>	

Baseline assessment of indicator of socioeconomic viability

Programme: WOT-04-005	
Project results in 2008	
Project name	Baseline assessment of indicator of socioeconomic viability
Project No.	5234065-01
BAS code	WOT-04-005-013
<i>Knowledge requirements of target group:</i> Accurate monitoring of the effect indicators requires baseline assessments with which follow-up assessments can be compared.	
<i>Research Objective:</i> Implementing baseline assessment for the effect indicators of socioeconomic viability.	
<i>Proposed and achieved research results and products:</i> The outcome of the baseline assessments will be available from March 2009, in the monitoring system (accessible at http://www.vitaalplatteland.nu/content/lopendeZaken/monitoring.html) and in a report: Agricola, H, P.Sinnige & L.A.E. Vullings. 2009. Report on the baseline assessment of the effect indicators for the monitoring system for the Agenda for a Living Countryside: State of the Countryside. (In Dutch) WOT Report.	

Baseline assessment of effect indicators for the agricultural reconstruction areas

Programme: WOT-04-005	
Project results in 2008	
Project name	Baseline assessment of effect indicators for the agricultural reconstruction areas
Project No.	5234113-01
BAS code	WOT-04-005-011
<p><i>Knowledge requirements of target group:</i> Preparing the baseline assessment of effect indicators for the 'agricultural reconstruction areas of sandy soils' theme in the context of the Monitoring programme for the Agenda for a Living Countryside.</p>	
<p><i>Research Objective:</i> Implementing baseline assessment for the indicators of the 'agricultural reconstruction areas of sandy soils' theme .</p>	
<p><i>Aanpak en tijdpad:</i> Besloten is voor het thema Reconstructie als effectindicatoren te benoemen de verzameling van alle in de ander thema's (natuur, recreatie, landschap, landbouw en sociaal economische vitaliteit) benoemde indicatoren. Daartoe zal bij de afzonderlijke thema's een uitsnede gemaakt worden op het schaalniveau van de reconstructiegebieden. De resultaten zullen vervolgens binnen dit project worden samengebracht.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> • Implementing the baseline assessment for the 'reconstruction areas' for each of the AVP themes. • Producing a factsheet to explain and justify the approach used for the baseline assessment. • Presenting the results of the baseline assessment. 	

Baseline assessment of effect indicators for recreation

Programme: WOT-04-005
Project results in 2008

Project name	Baseline assessment of effect indicators for recreation
Project No.	5234132-01
BAS code	WOT-04-005-018

<p><i>Knowledge requirements of target group:</i> Baseline assessment of target values for three effect indicators for recreation in the context of the Monitoring system for the Agenda for a Living Countryside (M-AVP): Recreational Use, Satisfaction and Accessibility.</p>
<p><i>Research Objective:</i> Implementing the baseline assessment for the effect indicators for recreation.</p>
<p><i>Proposed and achieved research results and products:</i> Results regarding Recreational Use: Recreational use of recreation areas by residents of the Randstad area (the ring of major cities in the west of the Netherlands) is 25% lower than among residents of other parts of the country.</p> <p>Results regarding Satisfaction: Satisfaction with the recreational opportunities in the Randstad area was rated at 65.8% of the maximum score, compared to 74.5% in the rest of the country, a difference of 8.7 percentage point.</p> <p>Results regarding accessibility: In 2007, anybody living in the Netherlands was within 10 minutes' cycling distance of recreational green space.</p> <p>These results have been presented to the client in a memorandum, and will be published in a report in 2009, together with results on effect indicators for other functions.</p>

Effect indicators of the Monitoring system for the 'Agenda for a Living Countryside' (M-AVP)

Programme: WOT-04-005	
Project results in 2008	
Project name	Effects of the Monitoring system for the 'Agenda for a Living Countryside' (M-AVP)
Project No.	5235045-01
BAS code	WOT-04-005-002
<p><i>Knowledge requirements of target group:</i></p> <ul style="list-style-type: none"> Implementing the baseline assessment on the basis of the established indicators for the measurement network for the Agenda for a Living Countryside, acting as intermediaries between researchers and policy staff at the Ministry of Agriculture, Nature and Food Quality, and ensuring the progress of the project. 	
<p><i>Research Objective:</i></p> <p>The 2008 objective of the Monitor-AVP Indicators projects is:</p> <ul style="list-style-type: none"> to ensure that the baseline assessment of the established effect indicators is implemented; to report on the baseline assessment. 	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> Factsheets to explain and justify the approach chosen for the baseline assessment for each theme. Results of baseline assessment for each policy theme. Collecting the baseline assessments of the various themes in a publication intended for a wide readership, entitled: State of the Countryside (2009). (In Dutch) 	

Management of Monitoring system for the Agenda for a Living Countryside (M-AVP)

Programme: WOT-04-005	
Project results in 2008	
Project name	Management of Monitoring system for the Agenda for a Living Countryside (M-AVP)
Project No.	5235067-01
BAS code	WOT-04-005-001
<p><i>Knowledge requirements of target group:</i> The target group requires an efficient and effective monitoring system, allowing reliable and unequivocal information to be retrieved at all times.</p>	
<p><i>Research Objective:</i> The objective of the M-AVP programme is to ensure the systematic collection, centralised storage and presentation of monitoring data required to evaluate the effectiveness and efficiency of the rural areas policy defined in the AVP. The aim of the management project is to ensure that the objectives of the M-AVP programme are achieved. This implies keeping the system up to date and implementing changes as soon as possible and in the agreed way (as described in the implementation document).</p>	
<p><i>Proposed and achieved research results and products:</i> The project will result in an efficient and effective monitoring system, allowing correct and unequivocal information to be retrieved at all times.</p> <p>As of March 2009, the Monitoring system for AVP will be accessible at http://www.vitaalplatteland.nu/content/lopendeZaken/monitoring.html .</p>	

Visualising the Monitoring system for the Agenda for a Living Countryside (M-AVP)

Programme: WOT-04-005	
Project results in 2008	
Project name	Visualising the Monitoring system for the Agenda for a Living Countryside (M-AVP)
Project No.	5235473-01
BAS code	WOT-04-005-015
<i>Knowledge requirements of target group:</i>	
While the main task of monitoring system is to provide administrative data, it would also be useful to visualise what the data mean in the actual context of the countryside	
<i>Research Objective:</i>	
The project aims to visualise the M-AVP to give policy-makers as well as others a better idea of the effects and impacts of the AVP policy on rural areas in the Netherlands. We decided to do this by means of 360° panoramic photographs, taken at strategic sites which have been selected in consultation with provincial authorities and local area managers. At set times during the term of the National Rural Investment Budget, new photographs will be taken at the same sites, to serve as a 'field monitor'.	
<i>Proposed and achieved research results and products:</i>	
For each province, a number of key sites will be presented on a website, showing panoramic photographs to monitor the local situation during the upcoming ILG term. The website is currently accessible at http://webgrs.wur.nl/cgi/miscellaneous/theo/avp/AVPstart/kaartje.htm . The project currently covers two provinces (Gelderland and Drenthe); the other provinces will be addressed in 2009. Eventually, the project will also be accessible through the AVP monitoring system.	

5 WOT-04-006 – Nature Policy Assessment Task

5.1 Report on WOT-04-006 programme

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-006: Nature Policy Assessment Task

1. Name and No. of Theme
WOT-04-006,
Nature Policy Assessment Task
2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:

The Nature Policy Assessment Task is a statutory instrument supporting Dutch nature policy (created under the act of 24 December 1997, regulating the creation of the Nature Policy Assessment Task). It serves to identify trends and problems, evaluate policy achievements and forecasts of the extent to which existing policies are achieving their aims, as well as presenting social and land-use trends in terms of opportunities for and threats to wildlife. The programme produces a Nature Balance report each year and a Nature Outlook report every four years. These reports are commissioned by the Executive Board of the Ministry of Agriculture, Nature and Food Quality. In addition, the Netherlands Environmental Assessment Agency occasionally supplies exploratory studies or effect assessments for third parties, such as political parties or private nature conservation societies. To do so, it needs the Minister's permission.

3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

The programme has contributed to the answers given by the Netherlands Environmental Assessment Agency (PBL) to questions which the Ministry of Agriculture and the Ministry of Housing, Spatial Planning and the Environment had asked in their Framework Letter. The overall report will be produced by PBL. **The present report can thus be regarded as an annex to the overall PBL report to its commissioning clients, the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM) and the Dutch Ministry of Agriculture, Nature and Food Quality (LNV).**

4. Proposed and achieved results or interim results for 2008:

The plan of action of the Nature Policy Assessment Task programme includes the direct contributions made to the task by the DLO research institutes. As was the case in previous years, the 2008 basic research carried out to supply information for the Nature Policy Assessment Task (knowledge development) has been allocated a separate programme (WOT-04-002)

The results of the programme are the products for the Nature Policy Assessment Task. The programme uses models, data and analyses supplied by other programmes (basic research) of the Dutch Ministry of Agriculture, Nature and Food Quality, and coordinates their delivery.

The 2008 action plan included the following components:

- A. Statutory products, viz. the 2008 Nature Balance report and the Environmental and Nature Compendium, as well as thematic assessments on 'Climate and Nature', 'Social benefits of the landscape' and 'Cost-effectiveness'. In addition, research has been done to support the evaluation of the Dutch International Policy Programme on Biodiversity (BBI)

and contributions have been made to the second Goal Achievement Monitoring system for the National Spatial Strategy.

- B. Quick-response tasks.
- C. Development and maintenance of consistency across the available instruments (information logistics, indicators, models, quality improvement).
- D. Management, quality assurance, communication and support.

A.1 Producing the 2008 Nature Balance report

The eleventh Nature Balance report was published in September 2008. The present programme contributed about 70% of its content. The contribution included an evaluation of Dutch nature conservation and landscape policy in general, in light of the latest ecological and social developments. In addition to these standard components it gave special attention to the evaluation of the ecology of freshwater and salt-water bodies.

A.2 Producing and updating the Environmental and Nature Compendium (MNC).

The MNC website was further expanded and updated in 2008, and investments have been made to improve the public's awareness of the website. The MNC includes data obtained from a large number of agencies and is tested for statistical quality by Statistics Netherlands (CBS). The contributions to the Compendium by the present programme mostly relate to the Landscape, Ecosystems, Nature & Society and Nature Conservation Policy components. The effort required for this, including coordination, covers about 10% of the total project, excluding data collection.

A.3 Thematic assessments

Of the three proposed thematic assessments, on 'Climate and nature', 'Social significance of the landscape' and 'Cost-effectiveness', only the first has been fully implemented, as PBL has decided not to publish the other two as separate reports, but to integrate them into the Nature Outlook report that will be published in 2011. In addition, research has been done for the evaluation of the Dutch International Policy Programme on Biodiversity (BBI) and contributions have been made to the second Goal Achievement Monitoring system for the National Spatial Strategy (published in the summer of 2008).

B Quick Response Tasks

Under the statutory Nature Policy Assessment Task, the Minister of Agriculture can ask PBL to initiate ad hoc activities, while PBL can offer unsolicited advice to the Ministry, or can contribute to integrated products of the assessment agency. In 2008, PBL offered advice on the Natura-2000 management plans, Forces Hampering Habitat Development, Landscape Agenda, Ecological and Water-related services and Functional Biodiversity. The recommendations were used by PBL to inform the relevant policy processes.

C. Development and maintenance of instruments

The web-portals, explorers, indicators database and meta-data system were serviced in 2008. The collaborative 'Quality Assurance Drive' project has now also improved the quality of the models used at Wageningen University & Research Centre for PBL research, which had persistent flaws, and ensured that nearly all of them now meet the basic quality requirements; in addition, plans for further improvement have been designed. The coordination of data supply remains a matter of concern. It is not only hampered by fragmented data management and barriers to data availability, but the specific objectives of various agencies managing data often result in data recording structures that differ from those required for the PBL's objectives. This can only be solved through interdepartmental collaboration.

D. Management and communication

Coordination and governance issues are requiring a great deal of time and effort, due to the prevailing network structure (both within and beyond Wageningen UR) as well as the programme's coordinating tasks for basic research (WOT-04-002).

Contributions to PBL products are being disseminated via PBL's communication channels. This is discussed in regular consultations between PBL's communication staff and the Statutory Research Tasks Unit for Nature & the Environment. A sound scientific basis for contributions by the present programme is being provided in WOt Reports, Working Documents and Studies. In addition, the Ministry of Agriculture, Nature and Food Quality and other target groups are being kept informed by means of the Kennis Online website and the WOt newsletter *WOt's New*.

5.2 Project reports for WOT-04-006

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Nature Balance 2008: Core Team

Programme WOT-04-006
Project results in 2008

Project name	Nature Balance 2008: Core Team
Project No.	5230003-70
BAS code	WOT-04-006-050.1

Knowledge requirements of target group:
The Nature Balance report is an annual report on developments in the ecological and landscape quality of the Netherlands in light of prevailing policies.

Research Objective:
The present subproject is an umbrella project. Its main contribution is project management by the acting project leader and the secretarial staff. This includes the administrative, coordinating and organising tasks that help produce the 2008 Nature Balance report, including editing and the production of tables, graphs and figures, in the context of the activities of the core production team.

Proposed and achieved research results and products:
Jorritsma, I.T.M., 2008. Natura 2000, Sense of Urgency and Water Framework Directive: on ecological targets and management measures. (In Dutch) WOt Working Document

Netherlands Environmental Assessment Agency (PBL), 2008. Nature balance 2008. (In Dutch)

Nature Balance 2008: climate, water, spatial planning and landscape

Programme: WOT-04-006	
Project results in 2008	
Project name	Nature Balance 2008: climate, water, spatial planning and landscape
Project No.	5230003-71
BAS code	WOT-04-006-050.2
<p><i>Knowledge requirements of target group:</i> The aim of this project is to explore how climate change is affecting opportunities for aquatic habitats through water policies, and especially how aquatic habitats can benefit from other policy areas (water policy for the 21st century and policies on the region along the large Dutch rivers and the Randstad ring of major cities in the west of the country). The explorative study is supplemented by a study focusing on a specific type of habitat, viz. marshlands.</p>	
<p><i>Research Objective:</i> The 2008 Nature Balance report describes the current ecological and landscape quality in the Netherlands, focusing on aquatic habitats, in relation to prevailing policies. The present project aims to answer one of the questions involved: What landscape changes will be caused by the water-related measures that will be necessitated in the near future by climate change, and what effects will this have on aquatic and other natural habitats?</p>	
<p><i>Proposed and achieved research results and products:</i> Wolfert, H.P., Pieterse, N. & Vos, C.C., 2008. Opportunities for aquatic habitats and the landscape. (In Dutch) In: PBL, Nature Balance 2008. Netherlands Environmental Assessment Agency, Bilthoven. pp. 119-140.</p> <p>Wolfert, H.P., Fakkkel, E., Maas, G.J., Makaske, B., Van den Brink, N.G.M., Pieterse, N., Querner, E.P. & Vos, C.C. Opportunities for aquatic habitats: background report to the 2008 Nature Balance report. (In Dutch) Wageningen, Statutory Research Tasks Unit for Nature & the Environment. (in prep.).</p>	

Nature Balance 2008: Appreciation, use and perception of water

Programme: WOT-04-006	
Project results in 2008	
Project name	Nature Balance 2008: Appreciation, use and perception of water
Project No.	5230003-72
BAS code	WOT-04-006-050.3
<p><i>Knowledge requirements of target group:</i> Making available information about:</p> <ul style="list-style-type: none"> • the volume of waterbound recreation, opportunities for waterbound recreation (i.e. the supply), conditions that have to be met to allow such recreational activities and relations between efforts to meet these conditions and measures to improve aquatic natural habitats; • the influence of waterbound recreation on the efforts to meet the ecological objectives in Natura2000 areas; • the influence of large and smaller water bodies on people's perception of the landscape. 	
<p><i>Research Objective:</i> The project aims to examine the utilisation and perception of water, as well as the potential consequences for efforts to meet the ecological objectives in Natura2000 areas and the opportunities (i.e. the supply) for waterbound recreation.</p>	
<p><i>Proposed and achieved research results and products:</i> Vreke J., N. van der Wulp, J. Donders, M. Goossen, S. de Vries, T. de Boer & R. Henkens (2008) Recreational use of water. (In Dutch) Wageningen, WOt Working Document No. 123. Henkens, R.J.H.G. (2008) Qualitative analysis of problems in the relation between Natura2000 areas and waterbound recreation. (In Dutch) Wageningen, WOt Working Document No. 119.</p>	

Preparing the 2009 Nature Balance

Programme: WOT-04-006
Project results in 2008

Project name	Preparing the 2009 Nature Balance
Project No.	5230003-74 / LEI 21181
BAS code	WOT-04-006-050.8

Knowledge requirements of target group:

The Netherlands Environmental Assessment Agency (PBL) needs a survey of relevant literature, policy goals and the corresponding indicators, to prepare for the 2009 Nature Balance report.

Research Objective:

PBL determines the subjects to be included in the annual Nature Balance report. The Statutory Research Tasks Unit for Nature & the Environment contributes to the Nature Balance report, for instance by commissioning research projects at Wageningen University and Research Centre / Alterra. The present project involves a survey of those topics that will be included in the 2009 Nature Balance report and to which Wageningen UR and especially the Statutory Research Tasks Unit for Nature & the Environment and Alterra can contribute.

The project includes identifying those topics that are relevant to the 2009 Nature balance report, as well as assessing what knowledge is already available and what knowledge gaps remain. This particularly concerns knowledge available at Wageningen UR.

Proposed and achieved research results and products:

- a database of relevant literature for the theme of the 2009 Nature Balance report;
- a survey of policy goals for the theme;
- a survey of potential indicators for the purpose of policy evaluation.

These are all products intended for internal use by Wageningen UR and PBL.

Environmental and Nature Compendium

Programme: WOT-04-006
Project results in 2008

Project name	Environmental and Nature Compendium
Project No.	5230005-07 / LEI 21212
BAS code	WOT-04-006-009

Knowledge requirements of target group:

Reliable and up-to-date facts and figures on aspects of nature and the landscape, in accessible and readable form.

Research Objective:

The project to produce WOt N&M's 2008 contribution aims to:

- coordinate activities at Wageningen University and Research Centre (WUR) to generate up-to-date information for the Environmental and Nature Compendium;
- update and expand the indicators presented on the www.milieuennatuurcompendium.nl website, for which Wageningen UR is responsible, particularly those indicators that relate to the Landscape theme (website), including the production of factsheets, and those indicators that include a biodiversity component;
- establish and publish CBD indicators for the website (CBD = Convention on Biological Diversity);
- contribute to further updates to the website.

Proposed and achieved research results and products:

Twenty-one indicators were updated in 2008. Draft texts for 10 further indicators are available, with the corresponding maps, graphs and tables. These indicators are expected to be put on the website in the first six months of 2009.

Fact sheets have been added to all updated indicators. For some indicators, only the text has been updated, not the data. Work on a new National Landscapes file has continued. This file contains about 25 indicators, which will be put on the website in the first six months of 2009.

The Netherlands Environmental Assessment Agency (PBL) is coordinating the drafting of texts and figures for the CBD indicators.

Secondments

Programme: WOT-04-006
Project results in 2008

Project name	Secondments
Project No.	5230007-08
BAS code	WOT-04-006-012

Knowledge requirements of target group:

The Netherlands Environmental Assessment Agency (PBL) needs to utilise the ecological and environmental knowledge that is available or is being developed at Wageningen UR.

Research Objective:

Enhancing the utilisation of Wageningen UR knowledge in PBL products.

Proposed and achieved research results and products:

Optimised utilisation of Wageningen UR knowledge in PBL products.

Thematic assessment of the relation between recreation and nature & landscape

Programme: WOT-04-006	
Project results in 2008	
Project name	Thematic assessment of the relation between recreation and nature & landscape
Project No.	5230008-11
BAS code	WOT-04-006-053
<p><i>Knowledge requirements of target group:</i> There is a need for information about the relations between nature and the landscape on the one hand and aspects like recreational use, health and wellbeing, social cohesion, economic development, property value effects and the physical environment on the other.</p>	
<p><i>Research Objective:</i> Preparing the contributions to be made by Wageningen UR researchers to the thematic assessment (TA) on the social significance of nature and the landscape.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> • A start-up meeting was held in April 2008. • F.R. Veeneklaas, Thematic assessment of the social significance of nature and the landscape. A survey of ongoing and completed relevant research (largely at WUR). (In Dutch) Internal Memorandum, Alterra, 14 April 2008. • Birgit Elands, Shared responsibility: involvement, public support, target groups and roles (competences, discretionare powers). (In Dutch) Internal Memorandum, WU/DOW, 28 April 2008. 	

Completion of Birds and Habitat Directives project

Programme: WOT-04-006
Project results in 2008

Project name	Completion of Birds and Habitat Directives project
Project No.	5230009-32
BAS code	WOT-04-006-001

Knowledge requirements of target group:

This study was initiated in response to the question asked by the Ministry of Agriculture, Nature and Food Quality in its Framework Letter to the Netherlands Environmental Assessment Agency (PBL) to assess how the protection of areas registered under the Birds and Habitat Directives is working out in practice, as regards both ecological objectives and socioeconomic effects on the areas concerned.

Research Objective:

The project aims to outline the prospects for meeting the targets of the Birds and Habitat Directives in the Netherlands. The report identifies the policy efforts required to meet the ecological targets of these directives. The project also looks, however, at all those people who are involved or have to become involved in implementing these directives, and at current and future trends in Dutch society.

An extensive report on this subject was published in 2007:

M.P. van Veen & I.M. Bouwma. Prospects for the Birds and Habitat Directives in the Netherlands. (In Dutch) MNP publication No. 500409001

Since the Dutch approach, involving the embedding of certain areas in the National Ecological Network (EHS) is rather unusual, the project team has been asked to write an article for a peer-reviewed scientific journal about the contributions made by the EHS to the spatial coherence between the areas designated as Natura2000 sites.

Proposed and achieved research results and products:

The first draft of the journal article has been completed; we will notify WOT N&M when the article has been published.

Synthesising ecological knowledge

Programme: WOT-04-006
Project results in 2008

Project name	Synthesising ecological knowledge
Project No.	5230010-07
BAS code	WOT-04-006-055

Knowledge requirements of target group:

Effective knowledge management is essential to achieve the objective of synthesising. Wageningen University and Research Centre (WUR) and the Netherlands Environmental Assessment Agency (PBL) signed a partnership agreement on 23 November 2007, one of whose aims was to improve the specification of research questions and improve the coordination of research projects that WUR carries out for PBL.

Research Objective:

The primary objective of the project is to further expand the knowledge that PBL needs by helping to formulate knowledge-related questions, coordinating basic research and ensuring that research results are actually used. The knowledge required is collected especially in projects in the WOT programme WOT-04-002, in the context of the themes of Water, Biodiversity (at national level) and European nature conservation and environmental policy (at international level).

The project also contributes to the completion of reports on 2007 basic research projects.

Proposed and achieved research results and products:

Contributions have been made to the 2009 Plan of Action. Two reports have been virtually completed:

M.J.S.M. Reijnen, A. van Hinsberg, M. van Esbroek, B.de Knegt, R. Pouwels & J. Wiertz, 2009. Ecological Value 2.0: an indicator for national policy targets. (In Dutch) WOt Report No xx Wageningen, WOT N&M.

M.J.S.M. Reijnen, J. Clement, M. van Esbroek, A. van Hinsberg & H. Kuipers, 2009. Achieving the objectives of the Dutch National Ecological Network: quality of terrestrial habitat types 2000-2004. (In Dutch) WOt Report No xx. Wageningen, WOT N&M.

Completion of the evaluation of de "Programme for Nature Management"

Programme: WOT-04-006	
Project results in 2008	
Project name	Completion of evaluation Programme for Nature Management
Project No.	5230010-08
BAS code	WOT-04-006-003
<p><i>Knowledge requirements of target group:</i> Examining the state of affairs and developments with regard to the various indicators for the Convention on Biological Diversity (CBD-2010).</p>	
<p><i>Research Objective:</i> The results of the present evaluation can function in the policymaking process in two ways:</p> <ol style="list-style-type: none"> 1. They can support the Dutch policies on nature conservation, biodiversity and the environment, as well as sectoral policies as regards monitoring the efforts and achievements. 2. They can set an example and stimulate other countries to start working on the target and the indicators. This is in line with the Dutch International Policy Programme on Biodiversity (BBI), which mentions indicators as a priority item. 	
<p><i>Proposed and achieved research results and products:</i> Fact sheets on various indicators have been designed and presented to the client (Onno Knol).</p>	

Synthesising landscape knowledge

Programme: WOT-04-006
Project results in 2008

Project name	Synthesising landscape knowledge
Project No.	5230011-12
BAS code	WOT-04-006-056

Knowledge requirements of target group:

The Netherlands Environmental Assessment Agency (PBL) is in need of knowledge about the landscape, including knowledge about methods to monitor landscape changes and about the causes of such changes.

Research Objective:

The project aims to ensure the effective implementation of the basic research that PBL has commissioned from Wageningen University and Research Centre (WUR), and to contribute to the effective transfer and utilisation of the knowledge accumulated.

Proposed and achieved research results and products:

Brouwer, F.M. & G.H.P. Dirks, 2008. Nature and the landscape in rural areas: informing policymaking. (In Dutch) Wageningen, WOt Study No 8.

Other results of the project include:

- helping to specify research questions for 2009 basic research;
- project proposals for 2009 basic research;
- effective implementation of 2009 basic research.

Synthesising knowledge about nature for governance and society

Programme: WOT-04-006	
Project results in 2008	
Project name	Synthesising knowledge about nature for governance and society
Project No.	5230012-24
BAS code	WOT-04-006-057
<p><i>Knowledge requirements of target group:</i> Coordination of research projects in the Governance and Society theme and coordination of WOt research and policy-supporting research in this field. A synthesis of research findings for Statutory Research Tasks for Nature & the Environment and the Netherlands Environmental Assessment Agency (PBL).</p>	
<p><i>Research Objective:</i> Basic research is needed to allow the Netherlands Environmental Assessment Agency (PBL) to report on governance and society in relation to the state of nature and landscape conservation, for inclusion in its products like the Nature Balance and Nature Outlook reports and the Thematic Assessments.</p> <p>Objective: the activities included in the present project contribute to the PBL's knowledge management effort and to PBL products. The project also summarises the research findings from themes 2 and 7 of the 2008 basic research programme, and compares them with related research.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ol style="list-style-type: none"> 1. The project results will be presented in individual reports; the present project involves preparing, supervising and evaluating WOt basic research projects that come under the theme of Governance and Society. 2. Contributions to the Action Plan for 2009 basic research. 3. Contributions to the 2008 WOt/PBL 'Knowledge Fair'. 4. Commenting on the 2008 Nature Balance report. 	

Amenity value monitor - Part 2

Programme: WOT-04-006
Project results in 2008

Project name	Amenity value monitor - Part 2
Project No.	5230014-13
BAS code	WOT-04-006-059

Knowledge requirements of target group:

How can people's perception of green areas / green spaces and the landscape be monitored?
How can the appreciation of motorways by different groups of users be monitored?

Research Objective:

- Processing the data of the repeat assessment of people's perception of green areas / green spaces and the repeat assessment of people's perception of the landscape.
- Processing the results of a debate on perception research in policy support.
- Research into the perception and appreciation of infrastructure.

Proposed and achieved research results and products:

Wulp, N.Y. van der, (2008). Monitoring the amenity value for the 2006 National Spatial strategy: baseline assessment of amenity value of areas. (In Dutch) WOt Report No. 75, Wageningen, WOT N & M.

Protecting biodiversity – international aspects

Programme: WOT-04-006
Project results in 2008

Project name	Protecting biodiversity – international aspects
Project No.	5230015-21
BAS code	WOT-04-006-073

Knowledge requirements of target group:

The project involves exploratory research for the PBL project entitled Evaluating the Policy Programme on Biodiversity 2008 – 2011, and intends to contribute to the decision-making process for this evaluation.

The project included two stages in 2008: an exploration of policy theory underlying the programme (based on interviews and goals analysis) and preparing for the evaluation.

Research Objective:

The Dutch Policy Programme on Biodiversity (2008-2011) presents the priorities for the next four years as regards addressing the decline of biodiversity and promoting the sustainable use of biodiversity and natural resources, in the Netherlands as well as abroad. The Ministry of Agriculture, Nature and Food Quality would like the Netherlands Environmental Assessment Agency (PBL) to investigate international policy efforts on this topic and their evaluation. The project aims to contribute to the exploration of options for the evaluation of the Dutch Policy Programme on Biodiversity by reconstructing the policy theory and supporting PBL in its choices. The actual evaluation will start in 2009.

Proposed and achieved research results and products:

Kamphorst, D.A. Policy Programme on Biodiversity: exploring the policy theory. (In Dutch) WOT Working Document No. 126.

Uncertainty in models

Programme: WOT-04-006
Project results in 2008

Project name	Uncertainty in models
Project No.	5230016-10
BAS code	WOT-04-006-084

Knowledge requirements of target group:

How much does the level of uncertainty in the components of the Soil Map – SMART/SUMO – MOVE/BIODIV chain of models (and the components linking into it) contribute to the level of uncertainty in conclusions based on analyses using this chain of models?

Research Objective:

The primary aim of the project is:

1. identifying 'weak links' in the Soil Map – SMART/SUMO – MOVE/BIODIV chain of models, that is, which components or parameters (or groups of parameters) contribute most to the uncertainty in the model chain outcomes.

In addition, the analysis will provide:

2. opportunities to indicate the level of reliability in conclusions drawn with the help of this chain of models;
3. a method that can also be applied to other spatial input maps than the soil map.

Proposed and achieved research results and products:

The project will be concluded in 2009 with the publication of a report:

G.W.W. Wamelink, W. Akkermans, D. Brus, G.B.M. Heuvelink, J.P. Mol-Dijkstra & E.P.A.G. Schouwenberg. 2009. Uncertainty analyses of the Nature Planner – an ecological vegetation and soil model chain. WOt Report No. xx.

The project could not be completed in 2008, and a plan for its completion in 2009 has been drawn up. These matters have been extensively discussed with the client.

Utilising knowledge by PBL

Programme: WOT-04-006
Project results in 2008

Project name	Utilising knowledge by PBL
Project No.	5230017-10
BAS code	WOT-04-006-019

Knowledge requirements of target group:

Consistent quality assurance of (a) the models and databases for which Wageningen University and Research Centre is the source owner and which are used in projects by the Netherlands Environmental Assessment Agency (PBL), and (b) policy-relevant applications of these instruments in PBL projects. This project continues the project entitled Quality Assurance for Models and Databases (KwaliteitsSlag 1, project No. 5230019-07)

Research Objective:

The project aims to organise the activities required for further development and application of the quality assurance system.

Proposed and achieved research results and products:

The results and products are reported under the corresponding improvement projects.

Background reports on products for the nature policy assessment task

Programme: WOT-04-006	
Project results in 2008	
Project name	Background reports on products for the nature policy assessment task
Project No.	5230018-07
BAS code	WOT-04-006-071
<p><i>Knowledge requirements of target group:</i> The Dutch government is in need of knowledge on nature, landscape and the environment in their administrative, economic and social contexts. The Statutory Research Tasks Unit for Nature & the Environment (WOT N&M) supplies this information mostly to the Ministry of Agriculture, Nature and Food Quality (LNV) and the Netherlands Environmental Assessment Agency (PBL). This project plays a major part in this process.</p>	
<p><i>Research Objective:</i></p> <ul style="list-style-type: none"> The project mostly aims to produce background publications for products relating to the PBL's Nature Policy Assessment Task. These include a number of WOt Reports and WOt Working Documents. Media contacts about the publications are covered by the WOT N&M 'Umbrella Programme'. 	
<p><i>Proposed and achieved research results and products:</i> The following numbers of publications were produced in 2008: WOT Reports: 1 WOT Working Documents: 10</p> <p>In addition, we organised a 'Knowledge Fair' at PBL, and contributed to lunchtime talks and seminars at PBL.</p>	

Quality assurance for models and databases

Programme: WOT-04-006
Project results in 2008

Project name	Quality assurance for models and databases
Project No.	5230019-07
BAS code	WOT-04-006-060

Knowledge requirements of target group:

Achieving and maintaining verifiable quality levels for the entire set of models and databases used by the Wageningen University and Research Centre (WUR) in projects for the Netherlands Environmental Assessment Agency (PBL).

Research Objective:

The Quality Assurance Drive project (KwaliteitsSlag 1 or KS1; 2004 – 2007) has led to considerable improvements in the quality of those models and databases used at WUR that are important to PBL. The project aims to coordinate the quality improvement projects in the KS1 quality drive.

Proposed and achieved research results and products:

About 20 models and databases have been improved to meet the minimum quality requirements (the 'A' quality status) in the course of the KS1 quality drive project, which has now been terminated. The results and products are reported under the corresponding improvement projects.

Reliable information exchange (DUIN)

Programme: WOT-04-006
Project results in 2008

Project name	Sustainable information exchange (DUIN)
Project No.	5230019-08 and 5230019-09
BAS code	WOT-04-006-061

Knowledge requirements of target group:

The main knowledge-related and research question in the DUIN project is how the information, knowledge and expertise available at the Netherlands Environmental Assessment Agency (PBL) and at Wageningen University and Research Centre (WUR), and eventually perhaps also at the ministries in The Hague, can be used more effectively and efficiently for the policy assessment tasks.

Research Objective:

The policy assessments tasks can only be fulfilled if a reliable supply of information is available. It is not enough to install technical facilities to link the various locations, organisations, data suppliers and information systems. At least as important is sound organisation and communication regarding these systems. This requires a robust underlying infrastructure that allows unequivocal communication, both internally (i.e. between offices, organisations and information systems) and externally (i.e. with data suppliers).

The project aims to organise the joint data supply for the Nature Policy Assessment Tasks for both WUR and PBL, and to improve communications about this data supply.

Proposed and achieved research results and products:

Strategic:

- A website presenting knowledge and an information map on nature conservation, the environment and spatial planning (www.informatiekaart.nl).
- Masterclasses on potential applications and limitations of essential databases (<http://duin.natuurgegevens.nl/Portal/>)

Operational:

- DUIN catalogue showing, for each 2008 PBL product, its relevance (see Annex), databases and a portal to allow access to the catalogue via Intranet and Internet (<http://duin.natuurgegevens.nl/Portal/>).
- User's manual for the DUIN information infrastructure.

The DUIN data catalogue offers all PBL researchers easy access to a survey of available databases, which can easily be searched. Researchers at both Wageningen UR and PBL Bilthoven can use their own infrastructure (GeoDesk Portal and PBL Dataportal, respectively) to access the DUIN catalogue.

WOT Study on monitoring

Programme: WOT-04-006
Project results in 2008

Project name	WOT Study on monitoring
Project No.	5230020-15
BAS code	WOT-04-006-033

Knowledge requirements of target group:

What types of information and monitoring can be distinguished? What classification can be easily used by policymakers in the national and provincial governments and the regional water boards? What practical examples can be used to clarify the various forms of monitoring? How can the position of monitoring within the decision-making processes by various authorities best be defined?

Research Objective:

The state of the natural environment is being monitored in order to supply policymakers and politicians with information they can use to make decisions, and in order to help researchers understand the processes in the natural environment. Monitoring programmes are elements in decision-making processes by public authorities and researchers. Since the quality of their decisions is partly determined by the quality of the information produced by monitoring programmes, it is very important to understand this relationship. There is as yet no concise and accessible overview of types of monitoring for the natural environment, nor a clear description of the way to develop a monitoring schedule or a clear discussion of the relationship between monitoring and administrative processes.

The present WOT study aims to offer policymakers working in national or provincial governments and regional water boards an overview of the various purposes and varieties of monitoring systems for the natural environment, as well as ways to develop monitoring schedules and the position of monitoring within decision-making processes by public authorities. This overview should help them when they have to take decisions about monitoring and contribute to an effective preparation of monitoring plans.

Proposed and achieved research results and products:

Knotters, M. (ed.) Monitoring the natural environment. (In Dutch) WOT Study No. 6, Wageningen, WOT N&M

Advising the National Focal Point for EEA at PBL

Programme: WOT-04-006
Project results in 2008

Project name	Advising the National Focal Point for EEA at PBL
Project No.	5230020-20
BAS code	WOT-04-006-062

Knowledge requirements of target group:

Various experts can be consulted, depending on the documents sent by EEA.

Research Objective:

Reviewing and commenting on EEA documents to contribute to the role of the Netherlands Environmental Assessment Agency (PBL) as a National Focal point for EEA.

Proposed and achieved research results and products:

Supplying advice required for the National Focal Point. A total of 71 e-mails with questions, recommendations and information were sent or received in 2008. Two advisory reports have been delivered. The project team participated in one workshop.

Completion of environmental education project in primary schools

Programme: WOT-04-006	
Project results in 2008	
Project name	Completion of environmental education project in primary schools
Project No.	5230020-21
BAS code	WOT-04-006-063
<p><i>Knowledge requirements of target group:</i> To what extent is the continuity of support for environmental education (EE) by local and regional EE centres being threatened by municipal budget cutbacks, and what consequences can this have for EE at primary schools?</p> <p>Answering this question requires research into regulations by public authorities to support EE in primary schools, as well as the way this support is currently functioning and the role of the EE centres in the process.</p>	
<p><i>Research Objective:</i> Examining the organisation of EE facilitation by provincial and municipal authorities, the role of EE centres, the severity of threats to the continued existence of these centres and the consequences for the support for EE at primary schools.</p>	
<p><i>Proposed and achieved research results and products:</i> Sollart, K.M. & J. Vreke. Facilitating environmental education in primary schools: EE support by provincial authorities. (In Dutch) WOt Working Document No. 102, Wageningen, WOT N&M</p>	

Continuation of project to match the demand for and supply of administrative science input

Programme: WOT-04-006	
Project results in 2008	
Project name	Continuation of project to match the demand for and supply of administrative science input
Project No.	5230020-22
BAS code	WOT-04-006-064
<i>Knowledge requirements of target group:</i>	
How can administrative science research be integrated more effectively in policy evaluations by the Netherlands Environmental Assessment Agency (PBL) to ensure that both PBL and the administrative science researchers are satisfied with the input from administrative science?	
<i>Research Objective:</i>	
The project aims to provide specific recommendations to improve the integration of administrative science research in PBL's policy evaluations, to ensure that both PBL and the administrative science researchers are satisfied with the input from administrative science.	
<i>Proposed and achieved research results and products:</i>	
Consultation between administrative science researchers at the Wageningen UR Environmental Science Group and PBL staff.	

Quick-response tasks

Programme: WOT-04-006
Project results in 2008

Project name	Quick-response tasks
Project No.	5230020-23 and LEI 21134
BAS code	WOT-04-006-052

Knowledge requirements of target group:

PBL requires knowledge input from Wageningen University and Research Centre (WUR) to answer ad hoc questions from policy-makers. Relevant knowledge fields in this respect include biodiversity, economics and administrative science.

Research Objective:

The aim of the Quick Response Tasks (QRf) is to make WUR knowledge available to PBL to allow it to answer ad hoc questions from policy-makers.

Proposed and achieved research results and products:

Verburg, R., I. Jorritsma & J. Dirx. Quick scan study into the processes involved in designing management plans for Natura2000 sites. A preliminary exploration among provincial authorities, the Directorate-General of Public Works and Water Management and the Department of Rural Affairs of the Ministry of Agriculture, Nature and Food Quality. (In Dutch) WOT Reports 120

Dirx, J., R. Verburg & P. van der Wielen Forces hampering habitat development: A brief exploration of resistance against government acquisition of agricultural land for habitat development. (In Dutch) WOt Working Document 139

Dirx, J. & F. van den Bosch. Quick Scan of the use of the catalogue on environmental and water-related services. (In Dutch) WOt Working Document 127

Smits, M.J. (in prep.) Quick Scan on farmland biodiversity. (In Dutch) WOt Working Document.

CBD climate indicators

Programme: WOT-04-006
Project results in 2008

Project name	CBD climate indicators
Project No.	5230020-24
BAS code	WOT-04-006-066

Knowledge requirements of target group:

Meeting the proposed biodiversity targets requires knowledge about the way species react to climate change.

Research Objective:

The project aims to initiate the development of a system of climate indicators, based on the reactions of different species (in terrestrial ecosystems) on climate change (in terms of temperature and extreme weather events). The value of various climate indicators has been tested with the help of an analysis of the relation between the indicators and population trends.

Proposed and achieved research results and products:

Nijhof, B.S.J.; Vos, C.C.; Strien, A.J. van (2007) Indicators for the Convention on biodiversity 2010: Influence of climate change on biodiversity
Wageningen, WOT N&M (Wot Working Document No. 53.7a) - p. 44.

Completing the Nature Balance report for secondary school pupils

Programme: WOT-04-006	
Project results in 2008	
Project name	Completing the Nature Balance report for secondary school pupils
Project No.	5230020-25
BAS code	WOT-04-006-067
<p><i>Knowledge requirements of target group:</i></p> <ul style="list-style-type: none"> • Applying expertise • Consultation • Knowledge-related questions on environmental education and related policies 	
<p><i>Research Objective:</i> Dissemination of knowledge from Nature Balance reports and other products of the Netherlands Environmental Assessment Agency (PBL).</p>	
<p><i>Proposed and achieved research results and products:</i> The final product of the project is a publication based on texts supplied via the internet, in a format that ensures that the information is interesting to pupils in the lower years of secondary school.</p> <p>The texts will also be made available to teachers.</p>	

CVTO recreation survey

Programme: WOT-04-006
Project results in 2008

Project name	CVTO recreation survey
Project No.	5230020-26
BAS code	WOT-04-006-068

Knowledge requirements of target group:

The results of the project should enable the Netherlands Environmental Assessment Agency (PBL) to assess any changes in leisure behaviour among Dutch citizens and the effect of such changes on the use of parks and wildlife areas. The use, or lack of use, of parks and wildlife areas is regarded as an important indicator of the public support for nature conservation and habitat development.

Research Objective:

The project aims to examine the use of parks and wildlife areas by recreational visitors.

Proposed and achieved research results and products:

Goossen, C.M., 2008. Monitoring the leisure behaviour of Dutch citizens in rural areas: Year 2006/2007. (In Dutch) WOt Working Document 146 Wageningen, WOT N&M
The report will be published in 2009.

WOT Study of European significance of Dutch wildlife

Programme: WOT-04-006
Project results in 2008

Project name	WOT Study of European significance of Dutch wildlife
Project No.	5230020-27
BAS code	WOT-04-069

Knowledge requirements of target group:

The project involves compiling a 'WOT Study' document discussing the European significance of wildlife in the Netherlands, at the species, ecosystem and landscape levels.

Research Objective:

Many Dutch people assume that wildlife in the Netherlands is of little or no significance for Europe as a whole; the present study tries to refute this notion. The ecological value of Dutch natural areas is definitely significant, even at European level.

Proposed and achieved research results and products:

The draft version will be further completed, allowing the book to be published in 2009. It will be lavishly illustrated and aim at a wide audience.

The Daarmoetikzijn landscape preference website

Programme: WOT-04-006
Project results in 2008

Project name	The Daarmoetikzijn landscape preference website
Project No.	5230020-28
BAS code	WOT-04-006-070

Knowledge requirements of target group:

The result of this project should allow the Netherlands Environmental Assessment Agency (PBL) to evaluate the Dutch public's preferences for certain types of landscape and additional characteristics.

The website entitled Daarmoetikzijn (literally 'That's where I want to be') offers a new method to gather data and aims to offer an alternative to the more traditional method of interviewing respondents. This traditional survey method is becoming increasingly hampered by problems like 'questionnaire fatigue'. Using an interactive website could help to avoid some of the disadvantages of traditional surveys. If the website generates enough response, it could establish a large group of respondents from which representative samples can be drawn for analyses. This also means that there is no need to set up each individual survey anew, as the site could generate a continuous flow of responses. This will in the long run be a cheaper method, and turn the website into a monitoring instrument.

Research Objective:

The project aims to develop a website to collect data that can be (statistically) analysed in a scientifically sound manner.

Proposed and achieved research results and products:

The renovated www.daarmoetikzijn.nl website will be launched in the early months of 2009.

CBD brochure

Programme: WOT-04-006
Project results in 2008

Project name	CBD brochure
Project No.	5230020-30
BAS code	WOT-04-006-081

Knowledge requirements of target group:

Policy-makers at the Ministry of Agriculture, Nature and Food Quality and the Ministry of Housing, Spatial Planning and the Environment need a survey of the current state of affairs in the Netherlands as regards the achievement of goals set in the context of the Convention on Biodiversity 2010 (CBD-2010). Since the survey should be suitable for members of parliament as well as for use in international contacts, it will be written in English.

Research Objective:

The project aimed to publish a brochure on the CBD-2010 indicators, partly based on the recent work done or commissioned by Alterra. The brochure was written in close collaboration with the Netherlands Environmental Assessment Agency (PBL).

Proposed and achieved research results and products:

The CBD brochure has been completed: Veen, M.P.; Brink, B.J.E. ten; Braat, L.C. & Melman, T.C.P. (2008)

Halting biodiversity loss in the Netherlands : evaluation of progress

[Bilthoven etc.] : Netherlands Environmental Assessment Agency [etc.], - p. 11.

Programme management for the Nature Policy Assessment Task

Programme: WOT-04-006
Project results in 2008

Project name	Programme management for the Nature Policy Assessment Task
Project No.	5230022-07
BAS code	WOT-04-006-032

<p><i>Knowledge requirements of target group:</i> Effective and efficient use of resources and implementation of the programme for the Nature Policy Assessment Task of the Statutory Research Tasks Unit for Nature & the Environment.</p>
<p><i>Research Objective:</i> Effective and efficient use of resources and implementation of the programme for the Nature Policy Assessment Task of the Statutory Research Tasks Unit for Nature & the Environment.</p>
<p><i>Proposed and achieved research results and products:</i> Effective and efficient use of resources and implementation of the programme for the Nature Policy Assessment Task of the Statutory Research Tasks Unit for Nature & the Environment.</p> <p>Annual reports for 2007, WOT-04-006 – Nature Policy Assessment Task. WOt Working Document No. 96.</p> <p>Hinssen, P.J.W. 2009 Plan of Action for the WOT N&M unit, nature and environmental policy assessment tasks. (In Dutch) WOT Internal Memorandum No. 1.</p>

Thematic Assessment on climate change, wildlife and spatial planning

Programme: WOT-04-006
Project results in 2008

Project name	Thematic assessment on climate change, wildlife and spatial planning
Project No.	5235032-01
BAS code	WOT-04-006-054

Knowledge requirements of target group:

- What are the effects, positive as well as negative, of climate change on species and ecosystems, and what possible problems may arise from these effects in terms of biodiversity?
- What are the consequences of climate change for efforts to meet the goals of nature conservation policy?
- What strategies can be used to enable ecosystems to withstand the effects of climate change?

Developing a number of adaptation strategies:

- increasing the size of natural areas and linking them to increase the scale level (international linkage);
- improving abiotic conditions;
- multifunctional adaptation.

Should the Dutch nature conservation policy be amended, in view of the current climate change, its effects and the options to prevent these effects?

How do governments, politicians, business, civil society organisations and civilians deal with climate change and its effects on the natural environment, and how do they cope with the accompanying uncertainties? In view of their dealing, what would be a robust adaptation strategy?

Research Objective:

This thematic assessment project by the Netherlands Environmental Assessment Agency (PBL) aims to examine the effects of climate change on the natural environment and nature conservation policy in the Netherlands. The project focuses on exploring adaptation strategies that could be used to meet the government's ecological targets under climate change circumstances. The project intends to produce a map of opportunities and problems as regards meeting these targets.

Proposed and achieved research results and products:

The exploratory study into the effects of climate change on the natural environment (stage 1), as well as an analysis of the problem areas and adaptation strategies (stage 2) and the development of various adaptation strategies (stage 3) are in progress. Draft chapters have been written. The analysis and report will be completed in 2009.

Product: The adaptation strategy for wetlands has been included in the Nature Balance report (see summary and Chapter 5.5 Climate-proof habitats, 2008 Nature Balance report. (In Dutch) Bilthoven, Netherlands Environmental Assessment Agency.

Stage 6 CBD2010 Additional analysis of climate indicators has been completed.

Product: Nijhof, B.S.J., Vos, C.C., & Strien, van A.J. (2007) Indicators for the Convention on biodiversity 2010: Influence of climate change on biodiversity Working Document No. 53.7a. Statutory Research Tasks Unit for Nature & the Environment.

Managing the SMART model

Programme: WOT-04-006
Project results in 2008

Project name	Managing the SMART model
Project No.	5235226-01
BAS code	WOT-04-006-072

Knowledge requirements of target group:

Management and minor maintenance of the SMART cluster of models; support (limited help-desk service) for users at the Netherlands Environmental Assessment Agency (PBL).

This involves the maintenance of the version management system. Storing new versions requires accurate coordination between the various components of the model.

Research Objective:

Based on the basic research for PBL's nature policy assessment task, the project aims to contribute to the realisation of the management programme for SMART2, SUMO2 and the SMART Studio module (collectively known as the SMART cluster).

Proposed and achieved research results and products:

New updates have been supplied to the Netherlands Environmental Assessment Agency (PBL) and the technical documentation has been revised.

Textbook on green environment law

Programme: WOT-04-006
Project results in 2008

Project name	Textbook on green environment law
Project No.	5235299-01
BAS code	WOT-04-006-078

Knowledge requirements of target group:

An outline of landscape law, that is, the law relating to the green environment, which should also be suitable for non-lawyers.

Research Objective:

To meet the need for a brief and clearly structured textbook on the law relating to the green environment, this project aims to produce a compendium-type textbook that is accessible to non-lawyers.

Proposed and achieved research results and products:

Dr. F.H. Kistenkas, Green environment law. (In Dutch) Wageningen Academic Publishers, Wageningen 2008, ISBN 978-90-8686-080-7, 175 p. with a Preface by Paul Hinssen (Head of WOT N&M).

Completion of baseline assessment of National Landscapes

Programme: WOT-04-006
Project results in 2008

Project name	Completion of baseline assessment of National Landscapes
Project No.	5235407-01
BAS code	WOT-04-006-080

Knowledge requirements of target group:

Following on from the project to specify the core qualities of Dutch 'National Landscapes' (2007-1008), there is a need to complete the set of all available maps, offer it in presentable form and make it accessible to policymakers and other staff at national and provincial governments via a website.

Research Objective:

Now that the core qualities of the Dutch 'National Landscapes' have been clearly and unequivocally recorded in maps, the present project aims to develop a specific and easily accessible presentation of these core qualities in the form of maps, intended for policy-makers, consultants and interested citizens, to allow these qualities to guide considerations on spatial planning policies for national landscapes.

Proposed and achieved research results and products:

All core qualities have been specified and all maps are being made accessible on the website of the Netherlands Environmental Assessment Agency (PBL). In addition, a Working Document will be produced (in a limited edition), offering some explanations on the core qualities that have been specified.

J.M.J. Farjon, A. Koomen & W. Nieuwenhuizen (in prep). Monitoring the Dutch National Landscapes. Baseline assessment of core qualities 2006. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M

Harvesting the benefits of macro-economic projects

Programme: WOT-04-006
Project results in 2008

Project name	Harvesting the benefits of macro-economic projects
Project No.	LEI 21008
BAS code	WOT-04-006-074

<i>Knowledge requirements of target group:</i> Specifying the insights obtained and disseminating them to a wider audience.
<i>Research Objective:</i> Publishing the results of projects on macro-economics, optimal timing and nature conservation policy.
<i>Proposed and achieved research results and products:</i> An article on the dynamics of the land market. Woltjer G.B., J.L. Luijt & R. Jongeneel, A land market cycle in the Netherlands. Paper presented at the European Association of Agricultural Economists (EAAE) conference, August 2008, in Ghent.

Information Network on Area Management 2008

Programme: WOT-04-006
Project results in 2008

Project name	Information Network on Area Management 2008
Project No.	LEI 21014
BAS code	WOT-04-006-079

Knowledge requirements of target group:

Costs and benefits (per hectare) of the management of all forest and wildlife areas in the Netherlands have to be established annually for each type of site.

Research Objective:

The project aims to continue the 2007 programme to contact public and semi-public organisations and agencies that are managing forest and wildlife areas in the Netherlands (except the National Forestry Service SBB), to invite them to be included in a database of such organisations and agencies. These organisations and agencies will be included in the Information Network on Area Management.

Proposed and achieved research results and products:

The accounts schedule for the Information Network on Area Management was updated several times in 2008. The transition to the INDEX as a basis for the classification into 'nature target types' (i.e. combinations of plant and animal species preferred for a particular area) was a major operation.

The draft accounts schedule for the Information Network on Area Management was completed by the end of 2008. This draft version will be further updated in 2009, to take account of the different administrative systems used by new participants of the network.

Data for 8 municipalities were entered into the 'Artis-abdicatie' for the Information Network on Area Management in 2008. The results (i.e. tables) were presented to the Advisor Committee in late 2008. Data for 7 further municipalities that have already joined the Network will be entered in 2009. (So far, 15 municipalities have been recruited that use a compatible administrative format.) Further municipalities, water companies and associations of leisure services providers will be recruited and if possible entered into the Network in 2009.

Nature Balance 2008: developments in society

Programme: WOT-04-006
Project results in 2008

Project name	Nature Balance 2008: developments in society
Project No.	LEI 21032
BAS code	WOT-04-006-050.6

Knowledge requirements of target group:

The key question is: What are the economic aspects of water and wetlands?

(The project originally featured another key question: What developments in society are relevant to water and wetlands?)

Research Objective:

The project aims to examine economic aspects of water and wetlands as a contribution to the 2008 Nature Balance report. The following aspects are considered:

- public expenditure for water management and the percentage of this that is allocated to wetlands;
- the allocation of public expenditure to quantitative as well as qualitative water management; who allocates funds? who provides the funding? what are funds spent on?
- a rough estimate of the costs of the Water Framework Directive;
- a systematic overview of the value of wetlands;
- explaining why it is so difficult to value wetlands;

The project originally also aimed to examine developments in society that interact with water and wetlands and analyse this interaction.

Proposed and achieved research results and products:

Publication: Netherlands Environmental Assessment Agency (PBL), 2008 Nature Balance, Chapter 6: Economic aspects of water and wetlands. (In Dutch)

Thematic assessment of CAP and cost-effectiveness

Programme: WOT-04-006
Project results in 2008

Project name	Thematic assessment of CAP and cost-effectiveness
Project No.	LEI 21046 / 5230004-07
BAS code	WOT-04-006-051

Knowledge requirements of target group:

The knowledge-related question relates to:

- 1) determining the cost-effectiveness of nature conservation policy;
- 2) examining the effects of various policy options for the Common Agricultural Policy (CAP) on agriculture and wildlife;
- 3) determining the current cost-effectiveness of habitat management;
- 4) general aspects of costs and benefits of nature conservation policy.

Research Objective:

The project aims to structure, coordinate and synthesise the basic research carried out at the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M) on the cost-effectiveness of nature conservation policy and business economics models focusing on agriculture and wildlife. The study is designed to tailor the research findings as closely as possible to the thematic assessments that the Netherlands Environmental Assessment Agency (PBL) has to produce on cost-effectiveness (to be published in 2009) and options for the CAP and/or a theme for the 2009 Nature balance report.

In addition, it contributes to the development of a system to supply CEI (Centre for Economic Information Supply) with data on business economics for the purpose of analyses on wildlife and economics. The latter research focuses on the linkage with ecological data and assessments of the costs of natural habitat management.

The project also involves coordinating and organising research for the Costs and Benefits theme.

Proposed and achieved research results and products:

R.A.M. Schrijver, D.P. Rudrum en T.J. de Koeijer (2008) Economic feasibility of countryside stewardship on herbivore farms. (In Dutch) WOt Report No. 80, Wageningen, WOT N&M.

T.J. de Koeijer, K.H.M. van Bommel, J. Clement, R.A. Groeneveld, J.J. de Jong, K. Oltmer, M.J.S.M. Reijnen & M.N. van Wijk, Cost-effectiveness analysis for the terrestrial part of the Dutch National Ecological Network: a preliminary exploration of possible applications. (In Dutch) WOt Report No. 73, Wageningen, WOT N&M.

Nature Balance 2008 : policy evaluation

Programme: WOT-04-006
Project results in 2008

Project name	Nature Balance 2008: policy evaluation
Project No.	LEI 21087
BAS code	WOT-04-006-050.7

Knowledge requirements of target group:

1. What are the main topics of government policy on aquatic habitats and what are the policy goals? What instruments does the national government use to achieve these goals? What international obligations does the Netherlands have? What tasks of lower tiers of government are relevant to aquatic habitats?
2. What links, overlaps and potential incompatibilities can be identified?
3. Can policy goals be tested or can indicators be used to assess whether policy goals are being achieved? What instruments have been used and are they effective and sufficient?
4. Does the analysis allow options for further action to be outlined?

Research Objective:

The project plan involves the description and evaluation of policies that are relevant to wetlands or aquatic habitats, as a contribution to the 2008 Nature Balance report. This relates not only to nature conservation policy but also to elements of water policy, environmental policy and policies regarding the users of salt-water and freshwater bodies (recreationists, fisheries, industry, shipping, etc.). Those policy goals that are relevant to aquatic habitats will first be concisely described, including their interrelationships, at the national as well as European level. Any incompatibilities or gaps, and the potential synergy between policy areas will be identified. A number of policy goals or policy elements will be described in terms of the way the policy is being implemented and in terms of whether the goals have been, or are being, achieved.

The project relates to aquatic habitats in freshwater and salt-water systems.

Proposed and achieved research results and products:

Some of the project results have been used in the Nature Balance report, especially in Chapters 3, Wetlands in the Netherlands and 4, North Sea and Wadden Sea. More detailed information on the aspects relating to the Wadden Sea has been published separately:

Leeuwen, S.J. van, M.-J. Bogaardt & F.G. Wortelboer (2008), North Sea and Wadden Sea: wildlife and policy. Background report to the 2008 Nature Balance report. (In Dutch) PBL Report No. 500402013/2008, Netherlands Environmental Assessment Agency (PBL), Bilthoven/ The Hague.

Nature Balance 2008: non-specific contributions of LEI

Programme: WOT-04-006
Project results in 2008

Project name	Nature Balance 2008 – non-specific contributions of LEI
Project No.	LEI 21088
BAS code	WOT-04-006-050.5

Knowledge requirements of target group:

This subsidiary project of the 2008 Nature Balance project is an umbrella project. Its main contribution takes the form of project management, that is, the administrative, coordinating and organising tasks that help produce the 2008 Nature Balance report, including editing, the production of tables, graphs and figures, in the context of the activities of the core production team.

Research Objective:

The project aims to contribute to the work of the Core Team, which is responsible for the preparations, production process, definitive text and aftercare for the 2008 Nature Balance report.

Proposed and achieved research results and products:

Nature Balance 2008, Netherlands Environmental Assessment Agency (PBL), Bilthoven, September 2008.
PBL Publication No. 500402008. ISBN 978-90-6960-204-2

Participation of provincial conservation societies in the Information Network on Area Management

Programme: WOT-04-006	
Project results in 2008	
Project name	Participation of provincial conservation societies in the Information Network on Area Management
Project No.	LEI 21093
BAS code	WOT-04-006-082
<p><i>Knowledge requirements of target group:</i> The project aims to continue the programme to contact public and semi-public organisations and agencies that are managing forest and wildlife areas in the Netherlands (except the National Forestry Service SBB), to invite them to be included in a database of such organisations and agencies. These organisations and agencies will be included in the Information Network on Area Management. The specific purpose of the present project is to contact a sample of the Dutch provincial conservation societies called Provinciale Landschappen (provincial landscape conservation societies) and include them in the database.</p>	
<p><i>Research Objective:</i> The project aims to establish annually the costs and benefits (per hectare) of the management of all forest and wildlife areas in the Netherlands. These costs have to be specified for each 'nature target type' (i.e. the combination of plant and animal species preferred for a particular area) and each type of site. The large bodies managing natural areas in the Netherlands have recently drawn up an 'Index' of 56 types of sites, which can be clustered into 18 groups. The Information Network on Area Management will use the same Index.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> • In the course of 2008, five of the 12 Provinciale Landschappen societies have agreed to participate in the Information Network. • Data of 4 of these 5 have been entered into a spreadsheet. These data will be entered into the Artis-abdication in 2009. • The subdivision into cost units is based on the new index, which will be used by the national Forestry Service SBB, the Natuurmonumenten conservation society and most of the Provinciale Landschappen conservation societies as of 2010. 	

Synthesising knowledge on nature and economics

Programme: WOT-04-006	
Project results in 2008	
Project name	Synthesising knowledge on nature and economics
Project No.	LEI 21107
BAS code	WOT-04-006-058
<i>Knowledge requirements of target group:</i>	
Knowledge development relating to nature and economics, in the context of basic research by the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M).	
<i>Research Objective:</i>	
<p>Basic research is an important task for WOT N&M. One crucial aspect of this task is the transfer of research findings to the Netherlands Environmental Assessment Agency (PBL). This is important for the entire cycle of formulating research questions, supervising the basic research efforts and translating the findings into PBL products. The plan of action specifies the activities relating to the economic context of nature and the landscape:</p> <ul style="list-style-type: none"> • activities relating to basic research; • activities relating to the consultation group on Nature and Economics. <p>A mini-symposium will be organised on agriculture and wildlife in a European context.</p>	
<i>Proposed and achieved research results and products:</i>	
<ul style="list-style-type: none"> • Defining the research questions and the research programme for 2009; assisting the basic research regarding the economic context of nature and the landscape; 2008 action programme. • Editing a WOt Study (Brouwer & Dirx, 2008). • Organising a mini-symposium on agriculture and wildlife in a European context (4 December 2008). <p>F.M. Brouwer & G.H.P. Dirx (eds.) Nature and the landscape in rural areas: informing policymaking. (In Dutch) WOt Study No. 8. Wageningen, WOT N&M.</p>	

Wot Study on Nature and the Landscape

Programme: WOT-04-006
Project results in 2008

Project name	Wot Study on Nature and the Landscape
Project No.	LEI 21108
BAS code	WOT-04-006-075

Knowledge requirements of target group:

How can knowledge transfer from basic research findings to the Netherlands Environmental Assessment Agency (PBL) be improved?

Research Objective:

The aim of the project is to produce a Wot Study to present policy-oriented conclusions from a selection of 18 basic research projects. The report will aim to:

- offer a clearly structured summary of the results of basic research on selected themes at the intersection of nature, landscape, economics and policy;
- offer reflections on the results obtained for each theme by the relevant programme leader, partly based on interviews with relevant policy-makers, practitioners, representatives of civil society organisations and researchers, and emphasising the need for knowledge as well as reflections on the present state of knowledge;
- link the natural science and social science approaches to research.

The target group for the study consists of PBL, policy staff at the relevant ministries (Ministry of Agriculture, Nature and Food Quality, Ministry of Housing, Spatial Planning and the Environment and Ministry of Finance), as well as nature conservation societies, environmental organisations and fellow researchers.

Proposed and achieved research results and products:

Brouwer, F.M. & G.H.P. Dirkx (eds.), 2008. Nature and the landscape in rural areas: informing policy-making. (In Dutch) Wot Study No. 8, Wageningen WOT N&M.

Benefits of the natural environment

Programme: WOT-04-006
Project results in 2008

Project name	Benefits of the natural environment
Project No.	LEI 21113
BAS code	WOT-04-006-077

Knowledge requirements of target group:

Knowledge-related question:

- What are the benefits of wildlife and natural habitats, can their monetary value be determined and how can these benefits be taken into account in decision-making processes?

This general question can be specified into four research questions, two of which can be linked to the first stage of the project ('developing a vision'), while the other two are linked to the second stage ('application'):

1. What benefits are generated by the natural environment? How do these benefits relate to ecosystem services?
2. How important are these benefits, particularly from an economic perspective? What can these benefits contribute to the economy, and can they be fully valued in monetary terms?
3. How can the benefits of the natural environment be fully taken into account in decision-making processes? What evaluation methods are best suited to achieve this, and how can these methods be linked to the various benefit categories?
4. What are the benefits (and costs) of Dutch nature conservation policy, and how do these change when various policy options are implemented?

Research Objective:

Conserving and developing natural habitats requires information about the costs of acquiring, redeveloping and managing natural areas. At the same time, we need to know what benefits these efforts produce, as it is these benefits which allow the public to evaluate the importance and value of nature conservation. The problem is that it is not easy to determine the costs, let alone the benefits. Although we know that the national, provincial and local governments and private parties together spend about 1 billion euros on nature and the landscape, the monetary value of the benefits this generates remains unclear. The project therefore aims to examine the benefits of the natural environment and to determine their monetary value.

Proposed and achieved research results and products:

The project results will be presented in various contributions to products of the Netherlands Environmental Assessment Agency (PBL). These include the 2009 Nature Balance report and the 2011 Nature Outlook report, as well as an internal memorandum and a journal article:

- Heide, C.M. van der, P.M. van Egmond & F.J. Sijtsma. 2009. Benefits of Nature. (In Dutch) Bilthoven, PBL, Internal Memorandum.
- Sijtsma, F.J., C.M. van der Heide, A. van Hinsberg & P.M. van Egmond. 2009. Biodiversity and CBA: decision-support beyond monetary valuation. To be submitted.
-

Cost-effectiveness

Programme: WOT-04-006
Project results in 2008

Project name	Cost-effectiveness
Project No.	LEI 21139
BAS code	WOT-04-006-076

Knowledge requirements of target group:

The first part of the project involves gathering information about ongoing and completed projects relating to cost-effectiveness, and actively contributing to ongoing projects, applying the available knowledge on various aspects (ecology, business economics).

In addition, preparations are made for a report for the thematic assessment. This also involves filling gaps in the available knowledge.

Finally, a possible research plan for a project on the relation between business economics and the core qualities of Dutch 'National landscapes' will be prepared for by collecting and surveying knowledge relating to existing modelling instruments.

Research Objective:

The aims of the project include, on the one hand, studying the theme of the cost-effectiveness of nature conservation as examined in ongoing basic research projects of the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M), and on the other hand preparing for the thematic assessment on cost-effectiveness (planned for 2009).

The project will also contribute to possible future research into the relation between business economics data and core qualities of National Landscapes, by writing a research proposal.

Proposed and achieved research results and products:

The project has contributed to the thematic assessment on cost-effectiveness, by helping to draw up an annotated list of contents, and by assisting in Raymond Schrijver's project on biodiversity in man-made landscapes, for which two workshops were organised. The concrete products therefore consist of two workshops and an annotated list of contents.

BIN farm information database for agriculture and horticulture, 2008, and Agrimonitor

Programme: WOT-04-006
Project results in 2008

Project name	BIN farm information database for agriculture and horticulture, 2008, and Agrimonitor
Project No.	LEI 31469 and LEI 31254
BAS code	WOT-04-006-085

Knowledge requirements of target group:

There is a need to make representative and reliable data on 1500 farms in primary agriculture and horticulture available, to allow scientifically sound conclusions to be drawn. For over 1050 farms, this involves not only financial data but also data on matters like income sources outside the farm and the use of crop protection agents, antibiotics, fertilisers, organic manure and energy. Data on some of the farms (450) are bought from accountancy firms, which means that the dataset is limited to financial data.

Research Objective:

Continuing the upkeep of the database as part of the BIN farm information database, for the purpose of the statutory research tasks.

Proposed and achieved research results and products:

LEI 31469:

The 2007 data for approx. 1510 farms have been entered into the database. The number of farms for which only financial income data were recorded was limited to about 400.

LEI 31254:

Articles in the Agrimonitor journal on topics like biodiversity on arable land, nitrogen application in greenhouse horticulture, organic arable farming, farming in mountainous regions, creating markets for a diversified countryside, habitat creation, etc.

Biodiversity of North Sea benthos

Programme: WOT-04-006	
Project results in 2008	
Project name	Biodiversity of North Sea benthos
Project No.	439.42000.03
BAS code	WOT-04-006-083
<i>Knowledge requirements of target group:</i> The Netherlands Environmental Assessment Agency (PBL) wants to be able to present a more comprehensive picture of the biodiversity of benthos in the North Sea in its 2008 Nature Balance report. This description should show whether there are any specific areas that possess greater biodiversity than others, or support a specific benthos community.	
<i>Research Objective:</i> The project aims to produce a spatial survey showing any differences in biodiversity between various parts of the Dutch continental shelf. A temporal analysis should show whether this pattern has changed over time.	
<i>Proposed and achieved research results and products:</i> Craeymeersch, J.A., Witbaard, R., Dijkman, E. & Meesters, H.W.G., 2008. Spatial and temporal patterns in the diversity of macrobenthic infauna on the Dutch continental shelf. (In Dutch) Wageningen IMARES, Report No. C070/08. 40 pp.	

WOT Study on public support for nature conservation policy

Programme: WOT-04-006
Project results in 2008

Project name	WOT Study on public support for nature conservation policy
Project No.	52234177-01
BAS code	WOT-04-006-040

Knowledge requirements of target group:

There is a need to integrate scientific knowledge about citizens' participation in, support for and involvement with nature conservation, and to make this knowledge accessible to a wider audience.

Research Objective:

Background: getting the public involved in nature conservation policy, stimulating involvement and a sense of responsibility among citizens.

Objective: making the results of recent relevant research, some of it commissioned by the Statutory Research Tasks Unit for Nature & the Environment (WOT N&M), accessible to policymakers and stakeholders. In addition, the project aims to identify dilemmas and policy opportunities.

Approach: The project is to yield a WOT Study, with some chapters explaining empirical studies to a non-specialist readership, while other chapters discuss theory development and theoretical reflection.

Proposed and achieved research results and products:

Elands, B.H.M. & E. Turnhout (eds.). Citizens, policy and nature conservation: between support and involvement. (In Dutch) WOT Study No. 9, Wageningen, WOT N&M.

6 WOT-04-007 – Environmental Policy Assessment

6.1 Report on WOT-04-007 Programme

Statutory Research Tasks for Nature and the Environment (WOT N&M)

Programme WOT-04-007: Environmental Policy Assessment Task

1. Name and No. of Theme
WOT-04-007 Environmental Policy Assessment Task
2. Policy task(s) of the Dutch Ministry of Agriculture, Nature and Food Quality to which the research findings contribute:
 - Monitoring environmental quality in rural areas under the Environmental Management Act
 - Monitoring sustainable agriculture
 - Outlook studies on agriculture and rural areas
 - Supplying emission data for E-PRTR, NEC, etc.
3. Knowledge-related questions that relate to the policy task(s) and are to be answered by the research findings:

The Dutch Environmental Management Act (Article 4.2, Par. 4) requires the Netherlands Environmental Assessment Agency (PBL) to report to the government about the state of the Dutch environment (in its annual Environmental Balance report and regular fact-finding studies for ex-ante and ex-post policy evaluations) and developments regarding environmental quality and sustainability issues. PBL assists decision-making processes on environmental and sustainability issues through integrated studies and outlook studies to inform the public debate. Other departments are obliged to supply PBL with the relevant information. The Ministry of Agriculture requires data and information on sustainable agriculture, falling water tables, manure and ammonia, acidification, pesticides, heavy metals, energy, greenhouse gases and fine particulate matter (through the Dutch Emissions Inventory database). Other knowledge-related questions concern costs and benefits of the implementation of the EU's Water Framework Directive, exploring the consequences of the Common Agricultural Policy (CAP), exploring options to meet the requirements of the ammonia directive and evaluating the current transition towards sustainable agriculture.

In summary, the programme contributes to the following studies, in consultation with PBL and the Ministry of Agriculture, Nature and Food Quality:

- (i) *Environmental Balance report*: supplying data for the Emissions Inventory database, monitoring progress in the context of the Kyoto protocol (carbon storage in forests and soil), monitoring the progress of the transition towards sustainable agriculture, reviewing draft reports.
- (ii) *Ex-ante and ex-post policy evaluation studies*, for instance on crop protection and manure policies. In 2008, basic research was done in preparation for the evaluation of sustainable crop protection.
- (iii) *Rural areas quality* studies intended to allow a comprehensive assessment of the quality of the Dutch rural areas.
- (iv) *Monitoring sustainable agriculture*: a long-term project plan was drawn up to prepare for the monitoring study on sustainable agriculture that will start in 2009.
- (v) *Basic research*: maintenance and management of databases and models for use in the studies listed above under (i), (ii), (iii) and (iv). Accurate models, which meet the requirements of the 'A' quality status, are of crucial importance, as they allow new questions by policy-makers to be answered quickly and effectively.

4. Proposed and achieved results or interim results for 2008:

Strategic outlook studies and integrated studies on sustainable agriculture

- Outlook on rural areas quality *Working Document completed.*
- SENSOR *progress according to plan.*
- Monitoring transition to sustainable agriculture *project plan for 2009 and subsequent years completed. Methodology to be specified in 2009.*

Products for Environmental Balance and Environmental Outlook reports and ad hoc policy studies (WOT)

- Contributions to 2008 Environmental Balance report *delivered according to plan.*
- Contributions to Emissions Inventory *delivered according to plan.*
- Kyoto Protocol *data supplied.*
- Uniform manure data for 2005 and 2006 WUM assessments *delivered according to plan.*
- Costs and environmental effects of crop protection measures *Draft report completed.*

Managing and improving models and databases

- Work on Manure & Ammonia model *activities started, based on review.*
- Maintenance and management of STONE *delivered according to plan.*
- Management and maintenance of National Environmental Indicator NMI *multi-year plan for NMI completed.*
- NMI improvement campaign *being completed.*
- Sensitivity analysis for rumen fermentation model *draft report completed.*
- Achieving the 'A' quality status for the rumen fermentation model *started.*

Completion of 2007 projects

- Quality of rural areas in three 'national landscapes' *report published.*
- Updating Stone hydrology model *report published.*
- Metamodels *Working Document published.*
- Options for the CAP *Working Document published.*

Communication and coordination

- Communication *delivered according to plan.*
- Coordination and programme management *delivered according to plan.*

6.2 Project reports for WOT-04-007

Survey of WOT-04-007 projects

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5235065-01 Model management for the National Environmental Indicator (NMI) and NMI 3 project plan for the Final Evaluation of the Policy Memorandum on Sustainable Crop Protection (EDG)	220
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Achieving the 'A' quality status for a model of methane production by dairy cattle	236

Programme coordination for WOT-04-007

Programme: WOT-04-007
Project results in 2008

Project name	Programme coordination for WOT-04-007
Project No.	5210233-04 / LEI 31272
BAS code	WOT-04-007-027

Knowledge requirements of target group:

The 'Environmental Policy Assessment Task' programme supplies data and knowledge to be used in products of the Netherlands Environmental Assessment Agency (PBL), and also carries out basic research to provide a solid scientific basis for future PBL products. A number of the products require high-quality modelling instruments.

Research Objective:

The project aims to ensure the smooth implementation of the programme, while trying to achieve a close match between the questions asked by PBL and the research being carried out in the WOT-04-007 programme.

Proposed and achieved research results and products:

Described in the context of individual projects.

Environmental Balance report

Programme: WOT-04-007
Project results in 2008

Project name	Environmental Balance Report for 2008
Project No.	5210234-04
BAS code	WOT-04-007-015

Knowledge requirements of target group:

Supplying knowledge required for the production of the 2008 Environmental Balance report. The information will be used especially for the chapter on 'Agriculture and Rural Areas'.

Research Objective:

The Environmental Balance project coordinates the work by Wageningen University and Research Centre for the 2008 Environmental Balance report, and prepares the work for the 2009 Environmental Balance.

Proposed and achieved research results and products:

A high-quality chapter on agriculture and rural areas in the Environmental Balance report. We supplied a text box illustrating the results of the Gemert-Bakel case study.

Emissions Inventory (Working Group on Agriculture and Land Use)

Programme: WOT-04-007	
Project results in 2008	
Project name	Emissions Inventory (Working Group on Agriculture and Land Use)
Project No.	5211478-03 , 4437710100 and LEI 31328
BAS code	WOT-04-007-018
<p><i>Knowledge requirements of target group:</i> There is a need for up-to-date knowledge that will allow scientifically sound emissions data (on other greenhouse gases, ammonia and methane) to be delivered as and when needed.</p>	
<p><i>Research Objective:</i> The Emissions Inventory project aims to collect data on emissions from various sources in the Netherlands, data which are used to meet a range of national and international obligations. The Working Group on Agriculture and Land Use ensures the supply of data on emissions relating to agriculture and land use.</p>	
<p><i>Proposed and achieved research results and products:</i> Definitive figures on ammonia, methane and other greenhouse gases have been presented for 2006, and preliminary figures for 2007. In addition, the Working Group has commented on the report by the ammonia working group of the Committee of Experts for the Fertilisers Act (CDM), which proposes a new methodology to calculate ammonia emissions. The Working Group on Agriculture and Land Use met 6 times in 2008, chaired by Ir van der Kolk. It also contributed to the Working Group on Emissions Monitoring (WEM) of the Emissions Inventory. Finally, the Working Group organised an outlook workshop for the Emissions Inventory Database.</p>	

Sustainable agriculture in Europe (SENSOR)

Programme: WOT-04-007
Project results in 2008

Project name	Sustainable agriculture in Europe (SENSOR)
Project No.	5231547-01
BAS code	WOT-04-007-008

Knowledge requirements of target group:

The work of Alterra in SENSOR responds to the call in the WOT-04-385 programme to provide quantitative knowledge to assess the impact of present and future environmental policies on sustainable land use in rural areas.

Research Objective:

The specific tasks of Alterra in SENSOR regarding the objectives of WOt are two-fold: (i) assessing the impact of European policies on multifunctional land use at regional level by verifying impact indicators on the basis of sustainability thresholds and targets derived from scientific knowledge, expert consultations and regional stakeholders; and (ii) designing and building the software for the ex-ante Sustainability Impact Assessment Tool. In addition, Alterra plays an important role in the Coordination of the whole project.

Proposed and achieved research results and products:

The following scientific and dissemination (i.e. not management) activities were carried out by Alterra (Centre for Geo-Information and Landscape Centre) in 2008:

1. Scientific:

- **Land Use Functions methodology for multi-functional land use assessment from a sustainability perspective, focusing on the aggregation of indicators to evaluate policy options.** This methodology can be applied at national, regional and local levels. This new tool integrates the changes observed in a large set of key impact indicators into nine land use functions. Land Use Functions are defined as the private and public goods and services provided by the different land uses, which illustrate the most relevant economic, environmental and socio-cultural aspects of a region.
- **Use of the Land Use Function framework in stakeholder workshops and internet surveys** to identify key issues for the sustainability of the region and allow comparisons of assessments in different regions.
- **Development of spatially explicit economic, environmental and social limits/thresholds** for the assessment of impacts on regional sustainability based on scientific expertise (top-down approach) or stakeholder preferences (bottom-up approach).
- **Landscape cohesion.** Development of a novel method to assess biodiversity by analysing whether the degree of fragmentation of the natural and semi-natural ecosystems in Europe threatens the long-term sustainability of biodiversity. The method generates an indicator which is calculated at the 1 km grid level and can be aggregated to any (administrative) spatial scale. The indicator is sensitive to any changes in size and configuration of natural areas and changes in landscape permeability. Another novel method has been developed to assess **landscape permeability**.
- **Methodology for the assessment of stakeholder preferences** regarding EU policies: (a) internet-based valuation and (b) group valuation for the assessment of stakeholder targets and preferences, with special attention to the bio-energy and biodiversity protection policy cases.

2. Dissemination

- Presentations were given at ten different international conferences and workshops.
- Third series of bi-annual **SENSOR Newsletter**, which mainly includes the preparation of the index of contributions and their editing. Alterra is the main body responsible. The Newsletters produced in 2008 are available at <http://www.sensor-ip.org/>
- In April 2008 the **first SENSOR book** was published by Springer-Verlag (Helming, Katharina; Pérez-Soba, Marta & Tabbush, Paul (Eds.). *Sustainability Impact Assessment of Land Use Changes*. Springer Verlag, Berlin Heidelberg, ISBN: 978-3-540-78647-4, 2008, X, 502 p. 72 illus., 55 in colour, Hardcover; Link to the book's web page (Springer Printhouse): <http://www.springer.com/978-3-540-78647-4> This book describes results achieved halfway through the SENSOR project. Its focus is on the conceptual design of ex-ante impact assessment tools and on methodological approaches of its components. The book consists of 21 peer reviewed chapters organised in five successive parts dealing with concepts and approaches to impact assessment, scenarios and modelling, spatial analysis and data issues, indicator analysis, regional and local assessments. Each book chapter describes a specific contribution to the objectives of developing sustainability impact assessment tools. However, each chapter is organised so as to disclose its own scientific value and can be understood independently of the other chapters. The editorial group consists of Katharina Helming, Marta Pérez-Soba and Paul Tabbush. As a member of the editorial group, the Alterra project leader prepared the list of contributions for Module 3 and reviewed and edited 8 of the manuscripts. Alterra scientists collaborated in 7 of the 21 chapters.
- The **International Conference on "Impact Assessment of Land Use Changes"** was held at the Humboldt University in Berlin on 6-9 April 2008. The conference intended to:
 - o bring together a scientific community with expert knowledge on impact assessment, land use and landscape research, environmental economics, rural sociology and the science-policy interface;
 - o share ideas, approaches and innovative results on impact assessment of land use and policy support within a broad interdisciplinary forum.

Following an invitation by the Leibniz Centre for Agricultural Landscape Research, some 300 scientists from 120 research institutes in Europe, South America and Asia used the opportunity to present and discuss the methods and models that were developed for ex-ante sustainability impact assessment during the last four years. The results – mainly coming from the four EU funded large-scale interdisciplinary projects SENSOR, EFORWOOD, PLUREL and SEAMLESS – show an extremely broad range of data and a wide variety of potential applications, especially in the field of regional development in rural areas. The conference was a major opportunity to present SENSOR results to a wider scientific forum and feedback was received for the remaining activities in the project. Two members of the Alterra team form part of the Organising Committee.
- **Submitted/accepted scientific articles in refereed journals:**
 - o Mücher S, Vos C, Kiers M, Renetzeder C, Wrba T & van Eupen M. 2008. Deduction of woody linear elements through landscape structure and land cover obtained from satellite imagery. *Ecological indicators* (accepted).
 - o Parachinni ML, Pacini C, Jones L & Pérez-Soba M. 2008. Weighting and aggregating indicators for ex-ante impact assessment of multifunctional land use. *Ecological indicators* (accepted).
 - o Mücher S, Vos C & van Eupen M. 2008. Spatial cohesion, an indicator to assess the impact of land use change on the connectivity of ecological networks. *Ecological indicators* (accepted).
 - o Renetzeder M, van Eupen M, Mücher S et al. 2008. Spatial Regionalisation in Europe, MERCOSUR and China for Sustainability Impact Assessment. *Ecological Modelling* (submitted).

Pérez-Soba M, Jones L, Parachinni ML & Pacini C. 2008. Land Use Functions: linking multifunctionality to sustainability impact assessment. *Ecology and Society* (submitted).

Monitoring the transition to sustainable agriculture, 2009

Programme: WOT-04-007
Project results in 2008

Project name	Monitoring the transition to sustainable agriculture, 2009
Project No.	5232511-01, 5235650-01, LEI 20919, LEI 21204 and LEI 31478
BAS code	WOT-04-007-014

Knowledge requirements of target group:

An action plan for designing the monitoring system for sustainable agriculture from 2010. Major questions that need to be addressed in the action plan include:

- What questions are relevant and can or must be included in the monitoring system?
- What are the objectives of the monitoring system as envisaged by the Ministry of Agriculture, Nature and Food Quality and the Ministry of Housing, Spatial Planning and the Environment?
- What are the objectives of policy evaluations as envisaged by the Netherlands Environmental Assessment Agency (PBL) and how can they be incorporated in the monitoring system?
- What are currently the main sustainability issues in agriculture?
- What methodologies are available to achieve the above objectives?
- What monitoring activities are already in progress and how can they be coordinated?
- What activities – quantitative monitoring, qualitative monitoring and synthesis – need to be implemented in 2009?
- What resources (staff, funding) are required for this?
-

Research Objective:

The project aims to produce an action plan that will allow the required monitoring programme to be implemented in 2009. The ministry has announced that it will submit its second monitoring report to Parliament before the summer of 2010.

This implies that we need to assess what questions are currently being discussed at the ministries, which the monitoring system could then focus on.

Proposed and achieved research results and products:

An internal memorandum describing all subsidiary projects and their schedules and budgets.

Completion of Metamodels

Programme: WOT-04-007
Project results in 2008

Project name	Completion of Metamodels
Project No.	5233137-01
BAS code	WOT-04-007-006

Knowledge requirements of target group:

There is a need for a simple model to rapidly provide a rough estimate of the level of nitrogen leaching from farmlands. The model outcomes have to allow comparisons with those of the national STONE instrument. One option to achieve this is metamodeling.

Research Objective:

1. Creating a simple process-oriented model for nitrogen leaching to groundwater and surface water.
2. Calibrating the process-oriented model against the STONE outcomes.
3. Validating the model against nationwide STONE calculations.

Proposed and achieved research results and products:

Salm, C. van der, T. Hoogland & D.J.J. Walvoort, Exploring options for the development of a metamodel of nitrogen leaching from farmlands. (In Dutch) WOt Working Document No. 110, Wageningen, WOT N&M

Model management for the National Environmental Indicator (NMI) and NMI 3 project plan for the Final Evaluation of the Policy Memorandum on Sustainable Crop Protection (EDG)

Programme: WOT-04-007
Project results in 2008

Project name	Model management for the National Environmental Indicator (NMI) and NMI 3 project plan for the Final Evaluation of the Policy Memorandum on Sustainable Crop Protection (EDG)
Project No.	5235065-01
BAS code	WOT-04-007-026

<p><i>Knowledge requirements of target group:</i> The project plan to develop NMI 3 is based on the knowledge-related questions that have been asked by the EDG team (interim evaluation EDG 2006).</p>
<p><i>Research Objective:</i> Maintenance and management of the National Environmental Indicator (NMI) in accordance with recommendations ensuing from the audit of the NMI as part of the process of obtaining the 'A' quality status.</p> <p>Maintenance and management of the NMI website (www.nmi.alterra.nl).</p> <p>Consultation meetings with the NMI advisory committee, chaired by the Ministry of Agriculture, Nature and Food Quality.</p>
<p><i>Proposed and achieved research results and products:</i> NMI 2.3 has been awarded the 'A' quality status. Recommendations from the audit report on NMI 2.3 were implemented. Maintenance and management of the NMI website. Consultations on the use of NMI methodology in drift calculations in MEBOT.</p> <p>A multi-year plan for the development of NMI 3 for the purpose of the 2010 evaluation of the Policy Memorandum on Sustainable Crop Protection (EDG-2010) has been drafted, in collaboration with the Ministry of Agriculture, Nature and Food Quality and the Ministry of Housing, Spatial Planning and the Environment.</p>

LULUCF sector of the PBL Working Group on Agricultural Emissions Inventory

Programme: WOT-04-007	
Project results in 2008	
Project name	LULUCF sector of the PBL Working Group on Agricultural Emissions Inventory
Project No.	5235148-01
BAS code	WOT-04-007-031
<p><i>Knowledge requirements of target group:</i> Calculating the greenhouse gas emissions for the LULUCF sector, to be reported to UNFCCC & Kyoto.</p>	
<p><i>Research Objective:</i> The project aims to implement the tasks ensuing from international commitments to report on greenhouse gases for the LULUCF (Land Use, Land-Use Change and Forestry) sector to UNFCCC and Kyoto. The project coordinates efforts to develop a consistent and set of data whose quality is checked.</p>	
<p><i>Proposed and achieved research results and products:</i> Submission for 2008 (definitive version) and 2009 (preliminary version) to UNFCCC.</p> <p>Wyngaert, I.J.J. van den, H. Kramer, P. Kuikman, G.J. Nabuurs & H. Vreuls (2008) Greenhouse gas reporting of the LULUCF sector, revisions and updates related to the Dutch NIR 2008. Alterra report 1035.6</p>	

Quality of rural areas

Programme: WOT-04-007
Project results in 2008

Project name	Quality of rural areas (2008/12.1)
Project No.	5235185-01
BAS code	WOT-04-007-038

Knowledge requirements of target group:

A problem analysis has led to the following research questions:

- What indicators have been used in the literature to describe the quality of rural areas?
- What relationships and trends in rural areas have been described in the literature?
- What coherent set of indicators or methodology would allow a comprehensive, preferably quantitative analysis of changes in the quality of rural areas?
- How do the relevant actors perceive the methodology selected, what other indicators do the actors regard as relevant and what interests do these actors represent?
- What are the advantages and disadvantages of the set of indicators and methodology selected as applied to a particular area?
-

Research Objective:

Dutch rural areas present a highly diverse picture. They have many different functions (agriculture, wildlife, water storage, housing, recreation, etc.), values (commodity value, amenity value and future value) and qualities (spatial quality, economic quality, environmental quality, ecological quality and social quality). There is currently no methodology or comprehensive set of indicators that would allow a concise characterisation of changes in rural areas.

The project therefore aims to develop a comprehensive, coherent and consistent set of indicators for the quality of rural areas, for the purpose of monitoring the effects of policies and autonomous developments on rural areas and their quality.

Proposed and achieved research results and products:

Proposed results over the January 2008 to December 2009 period include:

- a methodology, including a set of indicators, for the comprehensive analysis of rural areas;
- facts sheets;
- a report on the application of this methodology to a particular area (case study);
- a scientific journal article.

The actual results achieved during the first year of the project (January – December 2008) deviate slightly from the proposed results, because the client (the Netherlands Environmental Assessment Agency) requested that its 'Rural Areas' team should be closely involved in the project. This has resulted in a more process-oriented project, and its progress became partly dependent on internal considerations and processes in the PBL 'Rural Areas' team.

Six joint sessions of the project team and the PBL 'Rural Areas' team were organised, featuring a number of presentations. Reports on these sessions have been prepared. Four fact sheets were prepared, which were included in a Working Document:

Oenema, O., A. Smit & J. van der Kolk (2009) Indicators for Rural Areas: approach and preliminary results for 2008. (In Dutch) WOt Working Document No. 130, Wageningen, WOT N&M.

Fact sheet No. 1: Preliminary overview.

Fact sheet No. 2: Developing the methodology.

Fact sheet No. 3: Analysing endpoints or reference points

Fact sheet No. 4: The DSI (Driving forces, State & Impact)

The fact sheets include proposals for a comprehensive methodology and for a set of indicators. An analysis was made of Chapter 4 ('Rural Areas') of the 2008 Environmental Balance report in light of the development of a comprehensive set of indicators and so-called endpoints.

Agreement was reached with the client (PBL) to continue the project in 2009 and transfer the remaining budget (approx. 40%) from 2008 to 2009.

Effects of the reconstruction in the Gemert-Bakel municipality

Programme: WOT-04-007
Project results in 2008

Project name	Effects of the reconstruction in the Gemert-Bakel municipality
Project No.	5235260-01
BAS code	WOT-04-007-042

Knowledge requirements of target group:

Information on the effects of the reconstruction activities in the Dutch municipality of Gemert-Bakel and the prospects that reconstruction can offer for other areas.

Research Objective:

The project examines the ecological, environmental and landscape effects of measures taken in the context of the reconstruction programme in the Gemert-Bakel municipality.

Proposed and achieved research results and products:

Meulenkamp, W. & T.J.A. Gies (2009) Effect of reconstruction activities in sandy soil areas; a *pilot project in the Gemert-Bakel Municipality*. (In Dutch) WOT Report No. xx, Wageningen, WOT N&M.

Indicators for the quality of the residential environment in rural areas

Programme: WOT-04-007	
Project results in 2008	
Project name	Indicators for the quality of the residential environment in rural areas (1.2.2)
Project No.	5235266-01
BAS code	WOT-04-007-039
<p><i>Knowledge requirements of target group:</i></p> <p>1. Odour A national map of sites affected by odours from animal housing units used in intensive livestock farming.</p> <p>2. Fine particulate matter A graph plotting the number of farms exceeding the standard (32 µg per m³) against the distance at which this limit is exceeded. The graph should distinguish between units for pigs, poultry (with roof or side wall ventilation) and cattle. The graph should also represent three different situations:</p> <ul style="list-style-type: none"> • the present situation (2006); • a situation with air scrubbers used on farms engaged in intensive livestock farming (100% implementation); • a situation where all poultry farms use free-range housing units and air scrubbers. <p>3. Light pollution This is an unexplored area. Types of light pollution need to be defined. The report by Fransje Langers shows interesting maps of light emitted upwards, per grid cell or municipality. Checking whether more recent maps are available and then include the 1992-2000-2008 series.</p> <p>The situation in neighbouring countries (Germany and Belgium) should also be assessed and if possible included.</p> <p>Checking whether the effect of the covenant of 1 January 2008 to reduce assimilation light from greenhouses can be quantified.</p>	
<p><i>Research Objective:</i> The project aims to collect data on odour, fine particulate matter and light pollution at the level of individual areas (but covering as much of the country as possible).</p>	
<p><i>Proposed and achieved research results and products:</i> The proposed result will be a WOt background report: Gies, T.J.A., L.J.J. Jeurissen, I. Staritsky & A. Bleeker (2009) Indicators for the quality of the residential environment in rural areas. A survey of the state of affairs regarding nuisance caused by odour, light and fine particulate matter (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M.</p> <p>In addition, 1x1 km grid data on fine particulate matter have been supplied to the Netherlands Environmental Assessment Agency, for use in the emissions inventory database.</p>	

STONE

Programme: WOT-04-007
Project results in 2008

Project name	STONE
Project No.	5235273-01
BAS code	WOT-04-007-002

Knowledge requirements of target group:

The project does not involve the development of specific knowledge, but will optimise the use of available knowledge to initiate developments allowing policy questions on this topic to be answered.

Research Objective:

The project aims to coordinate the development of the models required to answer policy questions on nutrient problems. To this end, a steering committee has been established, consisting of representatives of the Netherlands Environmental Assessment Agency (PBL), the DLO research institutes and the Institute for Inland Water Management and Wastewater Treatment (RWS-RIZA), which has been given the task of (a) developing perspectives, (b) taking the relevant decisions and (c) coordinating the implementation of these decisions. If necessary, working groups can be established for specific subsidiary tasks, for which financial resources are available.

Proposed and achieved research results and products:

- Consultations by the steering committee with PBL, Deltares and Alterra, with regard to modelling instruments.
- Consultations with MAMBO Steering group on necessary developments and reporting.
- A vision statement on the use of the modelling instruments in specific areas as required by the Knowledge Agenda Team (KAT) on Nutrients, which was submitted to the responsible directors at the Ministry of Agriculture, Nature and Food Quality, The Ministry of Transport, Public Works & Water Management and the Ministry of Housing, Spatial Planning and the Environment.
- Consultations about the further development of the national water quality monitoring instruments.
- Contributions to the further development of the national water quality monitoring instruments; plan of action for version 0.1.

Contributions to the study to define the National Water Quality Monitoring Instruments (LWI).

NMI 3 and EDG-2010

Programme: WOT-04-007
Project results in 2008

Project name	NMI 3 and EDG-2010 (2008/11.2)
Project No.	5235452-01
BAS code	WOT-04-007-037

Knowledge requirements of target group:

Translating recent research findings into new modules for the National Environmental Indicator NMI (version 3).

Exploratory studies to prepare for further decision-making for the 2010 Final Evaluation of the Policy Memorandum on Sustainable Crop Protection (EDA-2010).

Research Objective:

The project aims to incorporate recent research findings in new NMI modules for the potential environmental effects on soil biota and the terrestrial ecosystem. In addition, the project involves some exploratory studies to assist further decision-making for EDG-2010 and to compare the concepts incorporated in existing modelling instruments to calculate national emissions to the environment and the resulting ecosystem impacts.

Proposed and achieved research results and products:

Kruijne, R., A.M.A. van der Linden, J.G. Groenwold, P. van Beelen & F. van den Berg, 2009. Developing version 3 of the National Environmental Indicator (NMI 3) for the Final Evaluation of the Dutch Policy Memorandum on Sustainable Crop Protection (EDG-2010) – a comparative literature review, recommendations on data for glasshouse horticulture, recommendations on atmospheric deposition, and updated NMI modules for soil toxicity and terrestrial toxicity. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

The Working Document will present various results:

1. New modules for NMI 3; indicators of risks to (a) soil biota and (b) the terrestrial ecosystem.
2. An exploratory study into supplementary data on glasshouse horticulture for EDG-2010.
3. A comparative literature review on national indicators of emissions and the corresponding ecosystem impact.
4. An exploratory study into the impact on aquatic biota of (short-range) atmospheric deposition levels and the potential added value for the EDG-2010.

State of affairs on 21 January 2009:

1. (a) Implementation has been completed, test report remains to be completed; (b) implementation will be carried out according to specifications, followed by testing and writing a test report.
2. Documentation has been completed; recommendations will be formulated.
3. Report has been completed.
4. Completing the documentation after consultations with experts at Plant Research International and Alterra; formulating recommendations.
- 5.

Suitability of the LEITAP meat consumption model

Programme: WOT-04-007
Project results in 2008

Project name	Suitability of the LEITAP meat consumption model
Project No.	LEI 21193
BAS code	WOT-04-007-043

Knowledge requirements of target group:

It is important for future projects to be aware of the possibilities and impossibilities of simulating options for meat policy using LEITAP. Meat consumption is a major cause of increasing land use and decreasing biodiversity, as well as influencing climate change.

Research Objective:

The project aims to assess the behaviour of the EITAP model for meat consumption by simulating a number of policy variants. This should allow us to determine whether the model is suitable for the analysis of the global effects of meat consumption in the Netherlands.

In addition, the project will examine potential alterations to the model to improve such analyses.

Proposed and achieved research results and products:

The results of trial simulations are promising: the mechanisms in the model are roughly as expected. Some components of the model still require an improved theoretical basis and more empirical evidence, however.

Manure and ammonia indicators for the 2008 Emissions Inventory

Programme: WOT-04-007	
Project results in 2008	
Project name	Manure and ammonia indicators for the 2008 Emissions Inventory
Project No.	LEI 31212
BAS code	WOT-04-007-016
<p><i>Knowledge requirements of target group:</i> As the project leader for the Emissions Inventory and the Environmental Balance report, the Netherlands Environmental Assessment Agency (PBL) is in need of indicators on manure and ammonia emissions to allow it to supply data to the 2007-2008 edition of the Emissions Inventory and the Data Warehouse at the Ministry of Housing, Spatial Planning and the Environment, as well as for its Environmental Balance report and Environmental Compendium. PBL also requires verification of the results on ammonia emissions at a 5x5 km grid scale and information on the number of farms per grid cell.</p>	
<p><i>Research Objective:</i> The project aims to calculate a large number of indicators on manure and ammonia for the years 2006 and 2007.</p>	
<p><i>Proposed and achieved research results and products:</i></p> <ul style="list-style-type: none"> • A data set for the year 2006 (t-2). • A data set for the year 2007 (t-1). • A memorandum on 'Fuel intake and consumption by the Dutch fisheries fleet in 2006'. • Luesink, H.H., P.W. Blokland, M.W. Hoogeveen & J.H. Wisman (2009) 'Ammonia emissions from agriculture in 2006 and 2007. Calculations and principles for the 2008 Environmental Balance. (In Dutch) WOt Working Document No. xx, Wageningen, WOT N&M 	

Working Party for Uniform Manure Data 2008; contributions by LEI and ASG

Programme: WOT-04-007
Project results in 2008

Project name	Working Party for Uniform Manure Data, 2008; contributions by LEI and ASG
Project No.	LEI 31225 / 4436625000
BAS code	WOT-04-007-019

Knowledge requirements of target group:

There is a need for data to be supplied by the Agricultural Economics Research Institute (LEI) from its BIN farm information database and other sources, and by the Animal Science Group (ASG) from the so-called TEA data on pig farming, to allow the Working Party for Uniform manure data (WUM) to produce accurate estimates of average manure and minerals excretions per animal. These manure and minerals excretion data will be used to monitor the 'manure market' (Committee of Experts on the Fertilisers Act) and ammonia emissions (PBL and Emissions Inventory) and to calculate the amounts of minerals applied to farmlands in the Netherlands as fertilisers.

Research Objective:

The WUM aims to establish and apply a methodology to calculate annual excretions of nitrogen, phosphate and potassium per farm animal for the purpose of manure legislation. Each year, the working party evaluates how the system can be improved and what data are needed to do so. To this end, LEI and ASG annually supply BIN data to Statistics Netherlands (CBS) to allow it to calculate the WUM-excretions.

Proposed and achieved research results and products:

An article on the WUM excretion calculations (van Bruggen, August 2008, 'Animal manure and minerals in 2006' (in Dutch)) has been published on the Statistics Netherlands (CBS) website. An article on the use of WUM data was published in the Agri-Monitor journal (Volume 14, No. 5): Ammonia emissions from agriculture, 1997 – 2007 (In Dutch) (Luesink, 2008).

MAM/MAMBO

Programme: WOT-04-007
Project results in 2008

Project name	MAM/MAMBO
Project No.	LEI 31272
BAS code	WOT-04-007-025

Knowledge requirements of target group:

Information on the technical design of the model.
Information on the scientific basis of the transport model.

Research Objective:

The MAMBO model has been developed over the last few years. In addition to a description of the principles on which the model is based and its mode of operation, the target group also needs information on its technical design. The project therefore aims to produce technical documentation, systematically describing the individual modules and their relationships with other modules. This should make the technical documentation useful for knowledge recording and information exchange between developers, and improve its transparency to third parties. In addition, the calibration study of the transport model will be initiated. The manure market will be monitored by combining model-based calculations with calculations based on manure transport accounting. The use of empirical transport data in the transport model should make these two types of calculations more compatible.

Proposed and achieved research results and products:

Elaborate technical documentation was produced in 2008, including a description of the individual modules. We also designed a structure to allow this documentation to be regularly updated in the future. Meta-information is now stored in separate files accompanying the model, allowing the documentation to be automatically generated.

Kruseman et. al (2008), MAMBO 1.0.0 Technical documentation, to be released.

An evaluation of the transport model was started in 2008. Consultations with the National Service for the Implementation of Regulations (Dienst Regelingen) have resulted in the availability of detailed transport data. A GAMS module was produced to further process these data by converting them to a suitable format for further statistical and modelling procedures.

GAMS module for the processing of rough transport data.

Kernebeek, H. van., H. Luesink, G. Kruseman & H. Vrolijk (2008), Evaluation and calibration of the MAMBO transport module, analysis of strengths and weaknesses of MAMBO and of the transport data. (In Dutch) Preliminary memorandum, to be published in expanded form in 2009.

Farm-level nutrient surpluses for the 2008 Environmental Balance report

Programme: WOT-04-007	
Project results in 2008	
Project name	Farm-level nutrient surpluses for the 2008 Environmental Balance report
Project No.	LEI 31341
BAS code	WOT-04-007-030
<p><i>Knowledge requirements of target group:</i> The Netherlands Environmental Assessment Agency (PBL) is interested in developments as regards nitrogen and phosphate surpluses at arable and dairy farms over the 1986-2006 period, as well as recent developments in the utilisation of fertilisers and animal manure for nitrogen and phosphate fertilisation, and the 2006 cumulative distributions of the use of animal manure per hectare at arable and dairy farms.</p>	
<p><i>Research Objective:</i> PBL has used the results in its 2008 Environmental Balance report.</p>	
<p><i>Proposed and achieved research results and products:</i> PBL has selected the figures to be included in the Environmental Balance report.</p>	

Costs and effectiveness of crop protection measures

Programme: WOT-04-007	
Project results in 2008	

Project name	Costs and effectiveness of crop protection measures (2008/11.1)
Project No.	3250104708
BAS code	WOT-04-007-036

Knowledge requirements of target group:

What are the most successful crop protection measures with which arable farmers, open ground vegetable growers and flower bulb growers can cost-effectively reduce their environmental impact?

Research Objective:

The interim evaluation of the policy memorandum on Sustainable Crop Protection does not address the effects of crop protection measures and the corresponding costs, benefits and risks of crop failure and reduced produce quality. There is therefore a lack of information on the economic prospects of open-ground crops in relation to the policy memorandum.

A practice-based pilot study (farms taken part in a programme for farm innovation or cultivation on innovative farms) has evaluated crop protection measures for the various crops at the level of individual open-ground arable, vegetable and flower bulb farms.

- Quantifying the environmental benefits of sets of measures.
- Quantifying the costs of sets of measures (agents, and application costs like labour, mechanisation and hired labour).
- Identifying the most successful crop protection measures.
- Estimating the risks to crops for each set of measures.

Proposed and achieved research results and products:

- The MEBOT model has been expanded with an environmental impact parameter called MIP (environmental indicator points) assessing the environmental impact of spray drift of crop protection agents on surface water (corresponding to the test parameter used in the interim evaluation of the policy memorandum on Sustainable Crop Protection).

Spuijt, J., P. Spoorenberg & R. Schreuder Environmental effectiveness and costs of crop protection measures. (In Dutch) WOT Working Document No. xx, Wageningen, WOT N&M.

Outlook on rural areas quality

Programme: WOT-04-007
Project results in 2008

Project name	Outlook on rural areas quality
Project No.	3310115108 and 5233565-01
BAS code	WOT-04-007-005 and WOT-04-007-041

Knowledge requirements of target group:

In its report entitled 'Nederland Later' (Future of the Netherlands), the Netherlands Environmental Assessment Agency (PBL) assessed how the country is expected to change between 2000 and 2040, what consequences this will have for the sustainability of rural areas and natural habitats, and what policies are required to stop undesirable and possibly irreversible developments. The project tries to develop a clearer and more specific picture of these developments by zooming in on three specific areas. The project tried to answer the following research question: *What is the current quality of rural areas in three 'National Landscapes' in the Netherlands, and how can this quality be safeguarded for the future?*

Research Objective:

The project aimed to analyse the current and future developments affecting rural areas, and to explore what problems they may cause and what policy options are available to solve them and safeguard the quality of the countryside. The study focused on three 'National Landscapes': Oost Achterhoek, Groene Woud and IJsseldelta. These areas were chosen because of the clear differences between them in terms of urban pressure, agricultural activities and type of landscape.

Proposed and achieved research results and products:

The project was implemented in 2007. The following product was delivered in 2008:

Korevaar, H., W.J.H. Meulenkamp, H.J. Agricola, R.H.E.M. Geerts, B.F. Schaap & J.W.H. van der Kolk (2008). Rural area quality in three Dutch 'National Landscapes'. (In Dutch) WOt Report No. 76, Wageningen, WOT N&M.

Sensitivity analysis for rumen fermentation model

Programme: WOT-04-007	
Project results in 2008	

Project name	Sensitivity analysis for rumen fermentation model
Project No.	4437688900
BAS code	WOT-04-007-040

Knowledge requirements of target group:

Based on the Tier 2 method, the default value for the methane conversion factor used in the IPCC guidelines is 6% of gross energy intake by dairy cattle. In view of the year-to-year variations in the composition and quality of the diet and in milk production, it is unlikely that there is a constant 6% emission. The Netherlands therefore opted for a Tier 3 approach, which takes the characteristics of microbial fermentation processes in the cattle's gastrointestinal tract into account. The use of this new Tier 3 approach also requires an estimate of the level of uncertainty in the results obtained. So far, no solid method is available for this uncertainty estimate.

Research Objective:

Methane produced by cattle (as a result of fermentation in the rumen and colon) makes a considerable contribution to the greenhouse effect. The greatest share in agricultural methane emissions is produced by dairy cattle. Since the methane emission factor for dairy cattle varies with feed intake and diet composition, this emission factor is estimated annually for the national Emissions Inventory.

The project aims to determine the order of magnitude of the uncertainty in the methane emission factor estimations for dairy cattle and the consequences of the uncertainty in this factor for some major model parameters.

Proposed and achieved research results and products:

Bannink, A. 2009. A sound scientific basis for uncertainty levels in estimated methane emissions by dairy cattle in the Dutch Emissions Inventory. (In Dutch) WOt Report No. xx, Wageningen, WOT N&M.

Planning (not part of WOt project plan)

Dijkstra, J. & Bannink, A. 2009. Envisaged publication of Dutch Tier 3, including uncertainty analysis, in peer-reviewed scientific journal.

Achieving the 'A' quality status for a model of methane production by dairy cattle

Programme: WOT-04-007	
Project results in 2008	
Project name	Achieving the 'A' quality status for a model of methane production by dairy cattle
Project No.	4437710000
BAS code	WOT-04-007-044
<p><i>Knowledge requirements of target group:</i> A dynamic, mechanistic simulation model has been used for a number of years to estimate methane emissions by Dutch dairy cattle, based on national data on feed intake, diet composition and milk production. This implies that the Dutch authorities are using a Tier 3 approach. This approach differs considerably from the Tier 2 approach used in the IPCC guidelines, which use a default value for the methane conversion factor of 6% of gross energy intake by dairy cattle.</p> <p>Since Wageningen University and Research Centre allows models to be used for WOt research only if they meet the requirements for the 'A' quality status, some aspects of the scientific basis, documentation and management of the model need to be improved.</p>	
<p><i>Research Objective:</i> The project aims to prepare the procedure to achieve the 'A' quality status for the use and documentation of the model of methane emission by dairy cattle. This model is currently being used as a Tier 3 approach in the Dutch Emissions Inventory protocol.</p>	
<p><i>Proposed and achieved research results and products:</i> Bannink, A. et al. 2009. Title to be decided. WOT Report.</p>	

Verschenen documenten in de reeks Werkdocumenten van de Wettelijke Onderzoekstaken Natuur & Milieu vanaf 2007

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