



**EU member state profiles completed
Milestone 08**

**Fact sheets per member state / case study available
Milestone 09**

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Dissemination level
Restricted

ESMERALDA

**Enhancing ecosystem services mapping
for policy and decision making**



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Preface

Milestones 08-09 relate to work carried out in Task 2.2: In-depth evaluation of stakeholder needs. Task 2.2 targets for developing case study profiles of implemented mapping and assessment studies, as well as EU member state profiles and producing a compilation of EU-wide development needs based on thematic structures. Based on this and the results from Task 2.1 'Stakeholder identification and initial analysis of activities' all 28 EU Member states will be clustered according to data availability, EU2020 targets implementation, ES mapping and assessment activities and related projects. The results will feed into mapping and method compilation in WP3 and WP4 as well as into the selection of case studies that will be used to test the methods in Task 5.1.

1. Creation of member state profiles

Work for producing member state profiles and the fact sheets thereafter started as the very first action of the ESMERALDA project already before the kick-off meeting in Kiel in May. Mapping and assessment of ecosystems and their services have started along the MAES activities in several countries during the past years. In addition to actual MAES work, there have been MAES-related sub-projects supporting the activity, the most important of which have been the MESEU project (Mapping of ecosystem services in the European Union) and TRAIN. The MESEU project collected experiences from different ecosystem mapping methods from a variety of case studies in European countries. TRAIN provided concrete training in applying a small set of selected mapping methods. Quite a large number of people have participated in MAES case studies or the MESEU work, either as project partners, external experts or in the TRAIN workshops. Therefore, a lot of material of mapping and assessment activities in EU member states was readily available at the beginning of the ESMERALDA project.

We started by collecting all available material from MAES, MESEU, TRAIN and other known activities from EU member states. All this material was reviewed and country-specific information extracted to create member state profiles to get a first baseline of all available mapping and assessment information per each member state. At this stage, the information was merely copy-pasted not to waste any piece of knowledge.

At the beginning of June 2015, the compiled member state profiles were sent to the ESMERALDA consortium partners to take care for their respective country, i.e. Finnish partner SYKE got the profile of Finland, German partner CAU got the profile of Germany, etc. Because the ESMERALDA project does not have partners in each of the 28 EU member states yet, some partners took the responsibility of checking information for several countries. For example, following the ESMERALDA concept of "partner countries linked via regional hubs", BEF in Latvia checked information for Lithuania and Estonia in addition to Latvia (see Appendix 1 for the guidelines for checking the member state profiles). The checked member state profiles were asked to be returned by 14 June 2015. We did not get feedback from all partners. In those cases, we had to continue the work relying that possible mistakes will be corrected and missing information updated later during the course of the project.

2. Producing member state fact sheets

The member state fact sheets were produced based on the initial analysis of member state profiles and a stakeholder network review carried out in June 2015. Information from the partners and the previous survey (MESEU final technical report and annex 2) were compiled in July 2015. For large parts, the same structure as in the MESEU reports was used for the member state fact sheets also.

The structure of the member state fact sheets is as follows:

1. Member state status of MAES activities, prerequisites and needs
2. Policy activities
 - 2.1. The current implementation plans and execution of the Biodiversity Strategy and in particular concerned with Target 2, Action 5
 - 2.2. The position of (the) case study / studies in those plans
 - 2.3. List of the case studies done in the country
 - 2.4. The possible future use of (the) case study results in Target 2 - Action 5
 - 2.5. Stakeholder involvement
 - 2.6. Executive institutes involved by the National Government
3. Research activities
 - 3.1. The Ecosystems covered in the country
 - 3.2. The Ecosystem Services covered in the country
 - 3.3. The indicators per ecosystem / ecosystem service (cells in the (MAES) matrix)
 - 3.4. Quantification methods of the indicators
 - 3.5. EU Directive reporting indicators & data used
 - 3.6. Scientific analysis
 - 3.7. Maps, reports, papers, (language)
4. Names of key people in the country related to ES mapping and assessment
5. References

The contents of the member state fact sheets were kept on a more general level providing enough knowledge for further assessment of the stage in which each country is with its mapping and assessment activities. This knowledge is needed in the following phase of work in WP2, which is the clustering of countries based on their opportunities and needs in meeting the MAES targets.

The names of key people in each country related to ES mapping and assessment were collected with the stakeholder network survey carried out at the same time with the member state profile checking. For details of stakeholder network survey, see ESERALDA Milestone 07 report.

In addition to the EU member states, some other countries are also willing to enhance MAES-type of activity, too. These countries have been included in the process as far as possible. Country profiles and later on fact sheets have been developed for these countries, too, when there has been information and people knowing about the activities in such countries. Countries that are integrated in the ESERALDA work outside EU member states are Norway, Switzerland, Israel, and possibly some other countries.

Most of the country fact sheets were uploaded to the ESERALDA Internal Communication Platform (ICP) by WP2/SYKE by 31 July 2015 (or some last ones within a few days after that). They can be found in the internal library (after login) under WP2 as "Appendices to Milestone 09". An example of country fact sheets can be seen in Appendix 2.

The country fact sheets will be once more checked by the MAES country contacts in September 2015. Based on the checked country fact sheets, all countries will be preliminarily clustered based on their opportunities and needs related to ecosystem service mapping and assessment before the ESMERALDA stakeholder workshop in Riga, Latvia, in October 2015.

3. The case study fact sheets

Case studies in the Member states were identified in the same way as the member state fact sheets were developed. The initial idea was that the work of the MESEU project could be readily used to create the fact sheets. However, the MESEU and TRAIN outcomes proved to be good starting points, but the case study descriptions were not complete and detailed enough for the purpose of ESMERALDA. Information of the case studies presented in the MESEU technical report Annex 2 can be used as baseline, but also further information needs to be retrieved from the scientific and grey literature output of the case study projects, or contacts should be made to the contractors to get a full picture of the activities.

While reviewing the case studies, we decided to improve the case study fact sheet template thoroughly. The aim was to produce a template that would serve the baseline information needs of all relevant work packages of ESMERALDA: WP3, WP4 and WP5. The template was circulated a couple of times among the work package leaders to get their ideas for improvement included and their needs met. Another important requirement was to make the fact sheet template easy and quick to fill in, so that people would be willing to provide all the required information. The final case study fact sheet template can be found in Appendix 3.

The case study fact sheet template will be sent to all member state stakeholders as well as to ESMERALDA partners. They will be asked to provide information on as many case studies as they want, but starting with case studies directly related to MAES activities. The case studies can be from different scales (national – regional – local) and represent different thematic contexts.

The ready case study fact sheets will be uploaded in the ESMERALDA ICP.

4. Obstacles and difficulties

The efforts for reaching this Milestone in WP2 have been burdened by sudden and unexpected changes of personnel. SYKE has not been very swift to fill the gaps in workforce due to economic reasons and it has also naturally taken time to introduce new people to the project tasks. This has led to a constant lag in schedule and it has been difficult to make up for lost months. Coupled with the hasty kick-off period of the ESMERALDA project it has been easiest to keep the WP2 work mainly in WP2 lead institution's hands instead of delivering sub-tasks to consortium partners and coordinating the work among them. In the following steps, consortium partners with tasks in WP2 will get more involved; specifically with regard to Workshop 01, which will take place in Riga, Latvia, in October 2015.

5. Lessons learnt

A way of maximising the impact of ESERALDA is linking the activity and results of the work packages into existing and upcoming activities. A good overview and a rich picture of the content in the case studies are important for all work done in ESERALDA as well as for further actual ES mapping and assessment activities.

The relevance of a good overview of the case studies in the member states in order to create accurate member state profiles cannot be stressed enough. The work carried out in WP2 has shown that the status of a full overview varies between different member states. The ESERALDA partners in the member states will have an important role throughout the project to work as transmitters of knowledge between member state stakeholders and project work.

6. Acknowledgements

Mr Janne Rinne and Ms Daniela Hellgren from SYKE collated information from MAES-related documents to produce the initial country-specific member state profiles and member state fact sheets. The ESERALDA project partners had an important role in checking the country-specific information on ES mapping and assessment activities. All partners that participated in this work gave a valuable input in gathering the baseline information for further work in the project. Work package leaders, Benjamin Burkhard, Fernando Santos, Marion Potschin, Davide Geneletti and Pavel Stoev, and Joachim Maes from JRC have provided important help in many ways during the work.

Appendix 1: Guidelines for checking the member state profiles

[Country name] – Member State profile

ESMERALDA WP2, Task 2.1

Background information:

- The target is to produce
 - EU Member state profiles based on the status of ecosystem service mapping and assessment activities in the country and the needs and opportunities to carry out the task.
 - Case study profiles of implemented ecosystem service mapping and assessment studies.
- Based on the Member state and case study profiles, Member states will be clustered to allow efficient and practical organization of testing workshops and successive supporting actions.
- Here below we have copy-pasted all information found in MAES, MESEU and TRAIN documents* about ecosystem service mapping and assessment activities in this country.
 - *Draft Agenda MAES WG 2015-03-06-rev; MAES WG 06 March 2015; MESEU Final Technical report 2013-14; MESEU Inception Report 2014-15 (Final 29-01-2015); MESEU update March 2015; MESEU Synthesis Report 2012-2014 (14-01-2015); NCA Draft Reference Document for Consultation 06-01-2015; Written communication on undertaken MAES related activities by Joachim Maes.
- The information has not been structured in any way at this point.
- Based on the information that we will get from you, Task 2.1 will produce the actual structured survey questionnaire to Member states to compile Member state and case study profiles to feed into WPs 3, 4 and 5.

Instructions:

- Please, **check information** copy-pasted below.
- If something is missing about the mapping and assessment activities in your country, please, add information in this document. Do not pay too much attention to the matters of form, but **provide all information you have (both Member state wise and case study wise)**.
 - Detailed information on ecosystem service **mapping** activities in your country: **What, How, Where, Who, When.**
 - Detailed information on ecosystem service **assessment** activities in your country: **What, How, Where, Who, When.**
 - If you have any reports about ecosystem service mapping and assessment activities in your country, please, **download them to the ESMERALDA internal web page** using the following protocol:
 1. Login to the ESMERALDA internal web page <http://www.esmeralda-project.eu> by entering your user name and password.
 2. In the second line of text starting from the upper part of the page click “+ add internal document”.
 3. Fill in the appearing boxes: Title, Abstract (a few words is enough), File (browse and select), Folder → choose path: *Work Packages – Work package 2 – Task 2.1 Stakeholder identification and initial analysis of activities – Your country folder.*
 4. Click “Add files”.
- You can find the downloaded documents clicking the “Library” option in the first line of text of the web page and then following the path given above.

- If you want to check the documents that have been used to compile the baseline information, you can find them in the following path: *Library - Work Packages – Work package 2 – Documents*.
- Please, save this document after completing it in: *Work Packages – Work package 2 – Task 2.1 Stakeholder identification and initial analysis of activities – Your country folder*.
- **The deadline for complementing information about the ecosystem service mapping and assessment activities in your country and about the case studies is Sunday, 14 June 2015.**
- **The final survey questionnaire to Member States will be formulated based on the baseline information from you!**

Appendix 2: Example: Member state fact sheet of the Netherlands



Member State Fact Sheet: Netherlands (NL)

As part of Milestone 09

July 2015

Edited by Daniela Hellgren

SYKE

Dissemination level
Restricted

ESMERALDA

Enhancing ecosystem services mapping

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Preface

This member state fact sheet is prepared as part of task 2.1: Stakeholder identification and initial analysis of activities. The initial analysis draws upon information collected by Esmeralda project partners and previous relevant work on ecosystem mapping and assessment activities and policy and research activities in connection to that. The goal was to consider at least Draft Agenda MAES WG 2015-03-06-rev; MAES WG 06 March 2015; MESEU Final Technical report 2013-14; MESEU Inception Report 2014-15 (Final 29-01-2015); MESEU update March 2015; MESEU Synthesis Report 2012-2014 (14-01-2015); NCA Draft Reference Document for Consultation 06-01-2015 and written communication on undertaken MAES related activities by Joachim Maes (see point 5 references for tracing the source of information for this particular member state fact sheet). Specific for this milestone report is the identification of obstacles and opportunities (table 1) as well as the updated list of key people in the country related to ES mapping and assessment (see point 4).

For the Netherlands the Esmeralda partners have compiled a document that, according to Mulder and Scholten (2015), is based on “22 interviews held with ecosystem services professionals from science, policy and practice in the Netherlands in June 2015. Interview questions included their knowledge of ecosystem services and mapping activities; relevant case studies; opportunities and improvements to further the process of mapping and assessment of ES; and lastly possible stakeholders for the testing workshops. The people interviewed are all ES experts”. The authors therefore state that the overview of the current Dutch status is good.

7. Member state status of activities, prerequisites and needs

Table 1: Member state status of activities, prerequisites and needs

Status of mapping ecosystem services in the country (1-3)*	Scale of mapping (1-3)**	Type of support needed (1-5)***	Needed support relates to (1-3)****
1. In initial phase, much support needed	1. National	[No Information]	WP2 stakeholder mapping / networking
3. Advanced, only little support needed	2. Regional		WP3 ES mapping methods
	3. Local		WP4 ES assessment methods / tools

* 1. In initial phase, much support needed, 2. On-going, still support needed, 3. Advanced, only little support needed
 ** 1. National, 2. Regional, 3. Local
 *** 1. Setting up a national network, 2. Policy and stakeholder identification, 3. Technical mapping support (data, GIS, mapping methods), 4. Lacking personnel with appropriate expertise, 5. Other
 **** WP2 stakeholder mapping/networking, WP3 ES mapping methods, WP4 ES assessment methods/tools

Prerequisites and strengths for carrying out the mapping and assessment of ecosystem services:

Mulder and Scholten (2015) identifies needs and opportunities for the ES concept to be put into practice from the interviews held with 22 professionals involved in the science, policy and practice of ecosystem services; the following needs and opportunities were identified:

“Currently there are four active projects that are commissioned by two government ministries; Ministry of Economic Affairs and the Ministry of Infrastructure and Environment. Ecosystem services are complex and trade-offs need to be made between services and stakeholders. This in turn affects policies. It may have been more beneficial if the Dutch government had one large integrated project, in which these projects were combined. This may have provided much stronger and effective approach to raise awareness and the implementation of ES in policy and practice. For example, the difference in approach is already apparent is the choice of source information, CBS uses information from the Cadastre and Land Registry and DANK uses the “National Land use the Netherlands” (Landelijk Grondgebruik Nederland).”

“Current static maps do not consider the dynamics between services; the dependence on temporal aspects, spatial data, flow and storage of ES; or the expiry date of ES maps. The Netherlands could benefit from taking a similar approach to the EU including scenarios and dynamic maps. More attention needs to be given to the distribution of ES in the landscape and who uses the ES, communicating the uncertainties of the maps, and making sure that maps match the reality on the ground.”

“The current maps could be improved by being more consistent e.g. making sure that land use maps are of the same spatial detail level. Current maps can be on 100m, 50m or even 2m grid, but on the other hand the water storage maps only cover large water bodies.”

“The Netherlands has a lot of information, like biophysical maps and water storage maps. This provides a good basis to start from. However there is a need for better methodology, links with practice and to stakeholders, e.g. pest control and pollination maps are not being used by farmers due to high uncertainty.”

“The Netherlands is not ready to implement ES in policy making. More information and experience needs to be gained from the pilot studies. The responsibility of implementing nature policy has been decentralised. Unfortunately provinces often lack the knowledge and staff capacity and councils tend to have small budgets and many responsibilities. Councils and provinces need knowledgeable staff and receive training to get current information.”

“The business community is actively involved through a number of projects, though one interviewee stressed that the business sector should not be expected to take the lead on mapping and assessment of ES, as it is not part of their core business.”

8. Policy activities

“In the Netherlands, the connection with nature and its services (and dis-services) has always been important. It is a low lying country, prone to flooding, therefore the Dutch created so-called ‘Water boards’ (Waterschappen) to ensure flood protection, drink water safety, water storage and purification. The Netherlands is also a densely populated country which has spurred the development of efficient spatial planning, using concepts like multi-functional landscapes, blue/green arteries and ecological buffer zones. The approach to ecosystem services in practice is quite fragmented because historically a number of government institutions were already working on specific ecosystem services, often using their own terminology, not necessarily using the term ecosystem services.” (Mulder & Scholten, 2015)

“In agreement with European regulation, the Dutch government intends to have an overview of Dutch ecosystem services by 2020, so they can be better included in economic planning and decision making by the government and the business sector. Furthermore the government has as goal to ensure that natural capital is maintained and used sustainably. In current policy-documents the term ‘natural capital’ is often used as synonym to describe the services nature provides.” (Mulder & Scholten, 2015)

8.1. The current implementation plans and execution of the Biodiversity Strategy and in particular concerned with Target 2, Action 5

“In the Netherlands there are five main ES projects funded by the Dutch government dedicated to mapping and assessment of ecosystem services. In short, the projects ‘Indicator of Nature Services’, ‘Natural Capital The Netherlands’ and the project ‘TEEB-NL phase I’ focus on ES assessment. The ‘Atlas Natural Capital’ is focussed on mapping ES. The project ‘Natural Capital Accounts’ is focussed on both assessment and mapping.” (Mulder & Scholten, 2015)

8.1.1. Graadmeter Diensten van Natuur (English title: Indicator of Nature Services)

[Everything under this heading cites Mulder & Scholten, 2015]

Main project contacts:

Alterra: Bart de Knegt (project lead), Kees Hendriks, Leon Braat

WOT: Frank Veeneklaas

PBL: Petra van Egmond (2014) and Dirk-Jan van de Hoek (2015)

Financed by Ministry of Economic Affairs, coordinated by Legal Research Tasks (WOT) and Netherlands Environmental Assessment Agency (PBL).

Duration: Indicator report published in 2014. In 2015 the next phase of the Indicator is to survey where there are opportunities to promote ES.

This research provides an overview of the status and trends of ecosystem services to enable their incorporation into decision-making processes by government and industry. The chart bars provide an overview of the percentage of goods and services from Dutch and non-Dutch ecosystems, changes in demand and supply, and percentage of goods and services supplied by Dutch nature, urban and agricultural areas. The main conclusion of the report is that the ability of nature to provide services has declined in the last 20 years, while the demand has grown. Ecosystems in the Netherlands are unable to meet the country's entire natural capital demand. The report provides comprehensive information on 17 types of ecosystem services, categorised according to the Common International Classification of Ecosystem Services. This report was part of the Balance of the Living Environment (Balans van de Leefomgeving) 2014.

For further reading: the full report "Graadmeter Diensten van Natuur, summary in English.

8.1.2. Natuurlijk Kapitaal Nederland – NKN (English title: Natural Capital The Netherlands)

[Everything under this heading cites Mulder & Scholten, 2015]

Main project contacts:

- PBL: Petra van Egmond (project lead), Dirk-Jan van de Hoek
- ALTERRA: Dirk Melman, Chris Hendriks
- LEI: Martijn van de Heide
- RIVM: Frans Oosterhout
- Min. EZ: Joop van Bodegraven en Henk Raven

Financed by: Ministry of Economic Affairs (Min. EZ)

Duration: 2014 – 2016

Website: <http://themasites.pbl.nl/natuurlijk-kapitaal-nederland/>

NKN is the continuation of the project "TEEB – NL Phase I" that ran from 2010-2013 and therefore it is also known as TEEB-NL phase II. NKN is focussed on the central question: how to integrate the economic value of nature in policy and investment decisions of government authorities, companies, and NGO's. This phase is to move from raising awareness to practice with pilot projects and case studies in different sectors. NKN will identify issues that impede implementation, resulting in recommendations for policy making.

NKN case studies

- Brabant water: Ecosystem services in sustainable farming as a business model for protection of groundwater supplies. This case study looks at how to reduce the input of herbicides and pesticides by 70% in agriculture. In addition to solving impediments to increase farmers

uptake of practices once the project ends. This case study can be scaled up to other places with water quality issues.

- Capturing the benefits of ecosystem services for greening the CAP. This case study aims to improve the greening of the CAP by identifying which ecosystem services are relevant for farmers to take action. NKN has two case studies; Salland and the Veenkoloniën. [Full report](#) (Dutch only).
- Innovation with natural flood-defenses (“Building with Nature”). This case study investigates how nature and ecosystem services can be used as solutions for water safety issues. By strengthening Waddensea dikes with wetland ecosystems and through the development of new highwater tide ways along the river Waal.
- Land management: researches the opportunities to manage protected areas with community stakeholders and as a result reduce dependency on subsidies and increase community/social support for these projects.
- Ecosystem services for enhancing sustainability in international supply chains.
- Nature-based solutions for regional climate adaptation (evaluation study).

Results for most case studies still need to be published.

Maps were used to define the relevant stakeholders and the current situation and as communication tool to stimulate the discussion for the area management. NKN uses DANK information and when possible NKN provides information to DANK. When DANK information was too coarse to be used in NKN processes, then more local maps were used.

8.1.3. Digitale Atlas Natuurlijk Kapitaal (DANK) (English title: Digital Atlas Natural Capital)

[Everything under this heading cites Mulder & Scholten, 2015]

Main project contacts:

- Min. IenM: Saskia Ras
- RIVM: Ton de Nijs
- Deltares: Suzanne van der Meulen
- Alterra: Kees Hendriks
- LEI: Nico van der Pol
- BIJ12: Renee Bekker

Financed by the ministry of Infrastructure and Environment (Min. IenM)

Duration: till 2020

Website: <http://www.atlasnatuurlijkkapitaal.nl/home>

The Digital Atlas Natural Capital aims to make information on the status and trends of natural capital and ecosystem services in the Netherlands available online. DANK obtained maps from various sources, such as Deltares, Alterra, het LEI, BIJ12 and the RIVM. DANK is intended to be used for decision making by government and the business sector. It will also facilitate the collaboration process with e.g. water and nature managers, farmers, and councils, therefore these stakeholders were included in the development process of DANK to ensure that it can address the issues they face. The overall objective is to ensure sustainable use of natural capital in a circular economy. By 2020 it should be common for companies and local governments to use this information for decision-making. For now ANK supports environmental impact assessments, social cost-benefit analyse, TEEB studies and spatial planning.

DANK, also known as ANK, is part of a larger initiative “Lane of the Living Environment” (de Laan van de leefomgeving) that provides information services to support decision making about the environment.

8.1.4. Natuurlijk Kapitaal Rekening (NKR) (English translation: Natural Capital Account)

[Everything under this heading cites Mulder & Scholten, 2015]

Main project contacts:

- CBS: Rixt de Jong (project lead)
- Min EZ: Henk Raven
- WUR: Lars Hein en Roy Remme
- RIVM: Ton de Nijs (provided maps)

Financed by Ministry of Economic Affairs (Min. EZ) and Ministry Infrastructure and Environment (Min. IenM)

Duration: Phase II will end September 2015

The Central Bureau for Statistics (CBS) compiles the National Accounts for the Netherlands annually. The CBS is researching the possibility of a Natural Capital Account using the UN System of Environmental-Economic Accounting. The Natural Capital Account would describe which economic sectors use ecosystem services and where the services are supplied. The Accounts can be described in physical (e.g. CO₂-storage and water use) and monetary terms. There is still much discussion regarding the mapping of the monetary value of ES. These discussions centre around how to monetised ES and how to determine the sustainable level to provide services.

NKR aims to create an overview of natural capital at national, provincial and council level, so it can be considered in spatial planning. NKR project consists of three phases:

- Phase I: The physical flow was mapped for 6 ecosystem services and quantified for monetary value in Limburg. This is part of Roy Remme’s PhD.
- Phase II: The number of services that will be mapped and valued will be expanded for Limburg. This phase will end in September 2015.
- Phase III: The project will be scaled up to national level. Funding still needs to be found for this phase.

For more information: Remme et al (2015) and Remme et al (2014).

8.1.5. TEEB –NL studies

[Everything under this heading cites Mulder & Scholten, 2015]

Through TEEB –NL phase I (2010 – 2013) the Dutch government wanted to get a clear overview of the economic value, and the costs and benefits of ecosystem services for the Dutch government, industry and citizens. These studies are intended to increase awareness of the value of biodiversity and ecosystem services in policy making, societal action plans and investments. Five TEEB studies have been completed:

- TEEB Green, Healthy and Productive [Full report](#) (Dutch only)
- TEEB for the Dutch business sector [Full report](#) (Dutch only)
- TEEB for the City [Full report](#) (English)
- TEEB for the Dutch Caribbean [Full report](#) (English)
- TEEB for Areas [Full report](#) (Dutch only)
- TEEB supply chains, report not published yet.

The next phase for TEEB (2014-15) will be conducted by PBL within the context of the project Natural Capital The Netherlands (NKN), read more above (2.2).

TEEB-NL studies were commissioned by the former Ministry of Economic Affairs, Agriculture and Innovation.

8.2. The position of (the) case study / studies in those plans

This was written on the position of case studied in the plans in late 2014: “The listed projects (see answer on question 1) should give insight in the status of the natural capital, ecosystem services and biodiversity in the Netherlands. The project distinguishes various target groups among others: local, regional and national spatial planning (evaluation of spatial developments and impacts on our natural capital) and reporting of the status of our natural capital to the EU.” (Braat, et al., 2015)

8.3. List of the case studies done in the country

(A separate Case Study Fact Sheet is filled in for each case study.)

8.4. The possible future use of (the) case study results in Target 2 - Action 5

“The results of the project should be applied in the evaluation of future developments and their impacts on our natural capital and the ecosystem services.” (Braat, et al., 2015)

8.5. Stakeholder involvement

8.5.1. Networks and business initiatives

[Everything under this heading cites Mulder & Scholten, 2015 with minor changes if no other source is mentioned]

In the Netherlands stakeholders have been involved in both networking and business initiatives. Besides government projects there are also initiatives from the business sector, such as the “Natural Capital Quick Scan”, “The Green Deal” and “The Guide Natural Capital & Financial institutions” (Mulder & Scholten, 2015).

The Platform Biodiversity, Ecosystems & Economy (Platform BEE, Platform Biodiversiteit, Ecosystemen & Economie) is an initiative of the entrepreneur organisation VNO-NCW, the nature organisation IUCN NL and the Ministry of Economic Affairs. Together with companies, nature organizations, knowledge institutions and development organizations, they aim to ensure the conservation and restoration of ecosystems and biodiversity as a condition for a strong economy and healthy living environment. The goals are: To stimulate conservation and restoration of ecosystems by raising awareness and greening company policies and practices with no net loss’ for companies and contributions to restoring and maintaining natural capital. The instruments used: Helpdesk Business and Biodiversity: free advice for companies on opportunities and risk reduction, funding of company pilot projects (sustainable business) and Advising the Dutch government on improving sustainability of the global economy and supply of raw materials. Website: www.platformbee.nl . (Mulder & Scholten, 2015)

The Community of Practice for Ecosystem Services (Community of Practice Ecosysteemdiensten was established in 2011 to encourage ES professionals to share their experiences on the practical implementation of ecosystem services. Scientists, policy makers, consultants, managers, practitioners and other ES professional from different sectors meet four times a year. The CoP meetings are centered on themes. Past meeting themes include; Interactive story-telling Natural Capital; ES and the deep soil; and Recommendations to the MAES commission. Initially the CoP was

hosted by SKBodem; now it is hosted by Rijkswaterstaat. Contact person: Wim van de Meerendonk - wim.vande.meerendonk@rws.nl , Website: CoP Ecosysteemdiensten. (Mulder & Scholten, 2015)

The Ecosystem Services Partnership (ESP) – Netherlands. See www.es-partnership.org for a list of National ESP-networks in Europe, and other parts of the world. These National Networks are a rich source of information on mapping and assessment activities in their countries. Contact person Dutch National Network: Simon Moolenaar - simon.moolenaar@hetnet.nl. (Mulder & Scholten, 2015)

Natural Capital Quick Scan was developed by consultancies CREM and Royal HaskoningDHV, commissioned by Platform BEE. The Quick Scan is a generic tool for businesses based on sector-specific and natural capital information, intending to raise awareness on the most pressing natural capital challenges. It supports companies in determining priorities, impacts and dependencies, as well as providing best practices. Currently the tool is available for the following sectors: apparel, dairy production, beer breweries, floriculture, and consumer paints & varnishes. The tool was developed to allow maps to be included at a later stage. Contact person: Simon Moolenaar - simon.moolenaar@hetnet.nl , Website: Naturalcapitalquickscan.com. (Mulder & Scholten, 2015)

The Green Deal is an initiative of IUCN NL, MVO Nederland and True Price in collaboration with the Ministry of Economic Affairs. This initiative intends to contribute to a more green and sustainable economy that considers human wellbeing and natural capital. This will include making natural capital measurable/assessable for business and when possible include information on the monetarisation of natural and social values. Thirteen companies are participating in the Green Deal, including AkzoNobel, ARCADIS, BAM, Deloitte, DSM, Ernst & Young, FMO, Interface, Heijmans, KPMG, NBA Philips, PwC, Thermaflex, and VBDO. Contact person: Erwin van Overbeek - e.vanoverbeek@mvonederland.nl . (Mulder & Scholten, 2015)

Guide Natural Capital & Financial Institutions. In collaboration with CREM, the VBDO provides the “Guide Natural Capital & Financial Institutions”. This guide describes a number of methods how financial institutions can integrate natural capital into their activities: Exclude companies or sectors from investment portfolios that damage natural capital, through ESG integration of information on natural capital in investment decisions and credit provision, through active ownership (voting and engagement), by emphasising the responsibility that companies and projects have with regard to natural capital and their activities and through Impact Investments taking a targeted approach by investing to improve natural capital. The guide also provides financial institutions an overview of ways to weave natural capital into their policy and how to be transparent about it. The guide will be available online in the summer of 2015, when it can be downloaded from www.vbdo.nl. Contact Frank Wagemans - Frank.wagemans@vbdo.nl , Website: VBDO.nl . (Mulder & Scholten, 2015)

“In the DANK project plan stakeholder meetings are included for the development of the atlas and the tools necessary to assist the evaluation of spatial plans.” (Baat, et al., 2015)

8.6. Executive institutes involved by the National Government

“RIVM, Alterra, Deltares and LEI”. (Baat, et al., 2015)

9. Research activities

9.1. The Ecosystems covered in the country

“The classification of the first MAES report will be used, based on the available information in the Netherlands.” (Baat, et al., 2015)

9.2. The Ecosystem Services covered in the country

“Most ecosystem services (CICES) are covered in the study and mostly at a national scale.” (Braat, et al., 2015)

9.3. The indicators per ecosystem / ecosystem service (cells in the (MAES) matrix)

[No information in source documents]

9.4. Quantification methods of the indicators

“Data: EU: EEA, Corine; National: www.nationaalgeoregister.nl (INSPIRE); All data will become available for other researchers in the digital atlas of natural capital: DANK and through the ‘Laan van de Leefomgeving’.” (Braat, et al., 2015)

9.5. EU Directive reporting indicators & data used

“Habitat Directive (Biodiversity Maps), Water Framework Directive, Marine strategy Framework Directive.” (Braat, et al., 2015)

9.6. Scientific analysis

“All maps available in the digital atlas need approval of a the validation committee Uncertainties are addressed: The indicators in the digital atlas are scientifically based and go through a review process before being published. The user can inform himself through a technical note on the page indicator as well as links to references to inform the development of each indicator. The reliability of most indicators will be expressed in confidence code (A-F): A. Integral observation. B. Estimate based on a large number of (very accurate) measurements, which representativeness of the data is almost complete. C. Estimate, based on a large number (accurate) measurements; representativeness is largely guaranteed. D. Estimation based on a number of measurements, expert judgment, a number of relevant facts or relevant published sources. E. Estimate based on a single measurement, expert judgment, relevant facts or extrapolation from other measurements F. Estimation, based on expert judgment, assumptions or extrapolation of foreign data” (Braat, et al., 2015)

9.7. Maps, reports, papers, (language)

“At this moment only the maps in the national georegister are available at: www.nationaalgeoregister.nl. The other maps will be published in the DANK” (Braat, et al., 2015)

10. Key people in the country related to ES mapping and assessment

Name	Organisation	Email	Activity involved in - now or in previous years	Stakeholder group*	Existing contact between the stakeholder and ESMERALDA consortium and name of the contact person in ESMERALDA consortium
Bart de Knegt	ALTERRA	Bart.deknegt@wur.nl	Gradimeter Diensten van Natuur (Indicator of Nature Services)	1. Scientific	NO
Irene Bouwma	Alterra WUR	irene.bouwma@wur.nl	MAES Europe country contact		
Kees Hendriks	Alterra WUR	kees.hendriks@wur.nl	MAES Europe country contact		
Leon Braat	Alterra WUR	leon.braat@wur.nl	MAES Europe country contact		
Marta Perez-Soba	Alterra WUR	marta.perezsoba@wur.nl	MAES Europe country contact		
Rixt de Jong	Central Bureau of Statistics (CBS)	r.dejong@cbs.nl	Natural Capital Account (NKR)	1. Scientific	NO
Chris Klok	Imares WUR	chris.klok@wur.nl	MAES Europe country contact; MARINE CASE: WADDENSEA - Netherlands; MESEU survey fact sheets		
Frank Veenklaas	Legal research tasks Nature and Environment (WOT)	Frank.veenklaas@wur.nl	Graadmeter Diensten van Natuur (Indicator of Nature Services)	1. Scientific	NO
A.F.F. Goedhart	Ministry Economic Affairs	a.f.goedhart@mineleni.nl	MAES Europe country contact		
Niek de Wit	Ministry Infrastructure & Environment	niek.de.wit@minienm.nl	MAES Europe country contact		
Henk Raven	Ministry of Economic Affairs	H.Raven@minez.nl	Natural Capital Account (NKR)		

Name	Organisation	Email	Activity involved in - now or in previous years	Stakeholder group*	Existing contact between the stakeholder and ESMERALDA consortium and name of the contact person in ESMERALDA consortium
Joop van Bodegraven	Ministry of Economic Affairs	j.vanbodegraven@mirez.nl	MAES Europe country contact; TEEB-related studies, Natural Capital The Netherlands (NKN).	4. National funding body	NO
Saskia Ras	Ministry of Infrastructure and Environment	saskia.ras@miniem.nl	MAES Europe country contact; Digital Atlas Natural Capital (DANK); http://atlasnaturalcapital.nl	4. National funding body	NO
Ton de Nijs	National Institute for Public Health and Environment (RIVM)	ton.de.nijs@rivm.nl	Digital Atlas Natural Capital (DANK); MESEU survey fact sheets	1. Scientific	NO
Petra van Egmond	Planbureau for the Living environment (PBL)	Petra.vanEgmond@pbl.nl	Natural Capital the Netherlands (NKN)	1. Scientific	
Roy Remme	WUR	Roy.remme@wur.nl	Natural Capital Account (NKR)	1. Scientific	YES; Dolf de Groot
Martijn Thijssen		martijnthijssen@gmail.com	MAES Europe country contact; MAES WG		

*Stakeholder group: 1. Scientific, 2. Administration, 3. Private enterprise, 4. National funding body, 5. International funding body

11. References

- Braat, L. C., Bouwma, I., Delbaere, B., Jacobs, S., Dendoncker, N., Van Eupen, M., . . . Weibel, B. (2015, February 20). Mapping of ecosystems and their services in the EU and its member states (MESEU): Final technical report 2013-2014. (L. C. Braat, Ed.) *ENV.B.2/SER/2012/0016*, p. 84.
- Mulder, S., & Scholten, L. (2015). *The Netherlands: member state profile*. Internal Esmeralda project document.

Appendix 3: Case study fact sheet template**Case Study Fact Sheet:**

Please, write country name and acronym here: [Country (acronym)]

Please, write case study name and case study acronym here

As part of Milestone 09

DD MM YYYY

Author(s)

Author affiliations

[You can also add here phases of document development by listing
Version n:o / Status of document / Date / Author(s) of the version – e.g.

1.0 Draft DD.MM.YYYY Firstname Surname

2.0 Draft DD.MM.YYYY Firstname Surname

3.0 Final DD.MM.YYYY Firstname Surname]

Dissemination level

[Public, Restricted, Confidential]

ESMERALDA

**Enhancing ecosystem services mapping
for policy and decision making**



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Preface

This case study fact sheet is prepared as part of Task 2.1: Stakeholder identification and initial analysis of activities. The initial analysis draws upon information collected by ESMERALDA project partners and previous relevant work on ecosystem mapping and assessment activities and policy and research activities in connection to that. The goal was to start collecting information about case studies conducted in MAES working groups, MESEU project and TRAIN training workshops (related documents are Draft Agenda MAES WG 2015-03-06-rev; MAES WG 06 March 2015; MESEU Final Technical report 2013-14; MESEU Inception Report 2014-15 (Final 29-01-2015); MESEU update March 2015; MESEU Synthesis Report 2012-2014 (14-01-2015); NCA Draft Reference Document for Consultation 06-01-2015). Besides these also other ecosystem service mapping and assessment studies can be described using the case study fact sheet template. These will complement the more official case studies with experience from a wider spectrum of countries and levels and will provide even richer variety of approaches and methods for consideration.

The specific relevance of the case study reports is to lay the foundation for information needed in carrying out the ESMERALDA project tasks in all its work packages and therewith supporting EU member states to reach the targets of mapping and assessing ecosystems and their services.

A. Fact sheet producer

Name of author(s): [Click here to enter name of author, duplicate part A if there are several authors](#)

Institution: [Click here to enter name of institution](#)

Contact e-mail: [Click here to enter e-mail address](#)

Contact phone: [Click here to enter phone number](#)

B. Case study implementers

B1. Institutions and key people involved in the case study work and their role in it

Institution: [Click here to enter name of institution, duplicate part B1 if several institutions and people are involved](#)

- Mandator of the case study work (Contract managing)
- Contractor (Implementer of the case study work)
- Financer
- Other, what? [Write other role in the case study work here](#)

Name of key person in the case study: [Click here to enter name of name of key person](#)

Role of key person in the project: [Click here to enter text](#)

- Project manager
- Researcher/Expert
- Other, what? [Write other role in the case study work here](#)

B2. Appropriate contact to discuss the classification, indicators, methods etc. used in the case study

Name: Click name of appropriate contact to discuss with here

E-mail: Click here to enter e-mail address

Phone: Click here to enter phone number

C. Information on ecosystem service mapping and assessment activities in the case study

C1. Basic facts of the case study

Start and end date of case study: Click to enter start date – Click to enter end date

In case of longitudinal study, start and end date of time period that was mapped / assessed: Click to enter start date – Click to enter end date

The case study has been about:

- Mapping of ecosystems services
- Assessment of ecosystem services

Dimension of mapping / assessment:

- Biophysical
- Social
- Economic

Scale of mapping / assessment:

- Country Write country name here
- Region Write name of region here
- Municipality If applicable, write municipality name here
- Site If applicable, describe site location here
- Spatial scope Approximate size of the total area mapped

Parties involved in the case study activities in addition to key people listed in **part B1**:

- Authorities
- Practitioners
- Politicians
- Researchers
- Scientific experts
- Other experts: Click here to describe other experts.
- Citizens

- Other: [Click here to describe other parties](#)

Description of stakeholder involvement (e.g. presentation of results, consultation, engagement in the mapping / assessment activity, gathering of citizen knowledge, etc.): Describe stakeholder contribution here

C2. Theme of mapping / assessment

- | | |
|---|---|
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Business, industry |
| <input type="checkbox"/> Forestry | <input type="checkbox"/> Green infrastructure |
| <input type="checkbox"/> Fish farming, fishing | <input type="checkbox"/> Protected areas, Natura 2000 sites |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Recreation, tourism |
| <input type="checkbox"/> Other, what? Write other theme of mapping or assessment here | |

C3. Biome in which the case study area is located (WWF classification of biomes)

- | | |
|--|---|
| <input type="checkbox"/> Temperate Broadleaf & Mixed Forests [4] | <input type="checkbox"/> Mediterranean Forests, Woodlands & Scrub [12] |
| <input type="checkbox"/> Temperate Conifer Forests [5] | <input type="checkbox"/> Tropical & Subtropical Moist Broadleaf Forests [1] |
| <input type="checkbox"/> Boreal Forests/Taiga [6] | <input type="checkbox"/> Deserts and xeric shrublands [13] |
| <input type="checkbox"/> Temperate Grasslands, Savannas & Shrublands [8] | <input type="checkbox"/> Mangrove [14] |
| <input type="checkbox"/> Tundra [11] | |
| <input type="checkbox"/> Other, what? Write other biome here | |

C4. Ecosystem(s) represented in the case study

Major ecosystem category (level 1)	Ecosystem type for mapping and assessment (level 2)	Representation of habitats (EUNIS/MSFD for marine ecosystems)	Representation of land cover
Terrestrial	<input type="checkbox"/> Urban	Constructed, industrial and other artificial habitats	Urban, industrial, commercial and transport areas, urban green areas, mines, dump and construction site
	<input type="checkbox"/> Cropland	Regularly or recently cultivated agricultural, horticultural and domestic habitats	Annual and permanent crops
	<input type="checkbox"/> Grassland	Grasslands and land dominated by forbs, mosses or lichens	Pastures and (semi-) natural grasslands
	<input type="checkbox"/> Woodland and forest	Woodland, forest and other wooded land	Forests
	<input type="checkbox"/> Heathland and shrub	Heathland, scrub and tundra (vegetation dominated by shrubs or dwarf shrubs)	Moors, heathland and sclerophyllous vegetation
	<input type="checkbox"/> Sparsely vegetated land	Unvegetated or sparsely vegetated habitats (naturally unvegetated areas)	Open spaces with little or no vegetation (bare rocks, glaciers and beaches, dunes and sand plains included)
	<input type="checkbox"/> Wetlands	Mires, bogs and fens	Inland wetlands (marshes and peatbogs)
Fresh water	<input type="checkbox"/> Rivers and lakes	Inland surface waters (freshwater ecosystems)	Water courses and bodies incl. coastal lakes (without permanent connection to the sea)
Marine	<input type="checkbox"/> Marine inlets and transitional waters	Pelagic habitats: Low/reduced salinity water (of lagoons) Variable salinity water (of coastal wetlands, estuaries and other transitional waters) Marine salinity water (of other inlets) Benthic habitats: Littoral rock and biogenic reef Littoral sediment	Coastal wetlands: Saltmarshes, salines and intertidal flats Lagoons: Highly restricted connection to open sea, reduced, often relatively stable, salinity regime Estuaries and other transitional waters: Link rivers to open sea, variable, highly dynamic salinity regime. All WFD

	Shallow sublittoral rock and biogenic reef Shallow sublittoral sediment	transitional waters included Fjords/sea lochs: Glacially derived, typically elongated and deep; marine salinity regime Embayments: Non-glacial origin, typically shallow, marine salinity system; Pelagic habitats in this type include the photic zone, benthic habitats can include it or not
<input type="checkbox"/> Coastal	Pelagic habitats: Coastal waters Benthic habitats: Littoral rock and biogenic reef Littoral sediment Shallow sublittoral rock and biogenic reef Shallow sublittoral sediment	Coastal, shallow-depth marine systems that experience significant land-based influences. These systems undergo diurnal fluctuations in temperature, salinity and turbidity, and are subject to wave disturbance. Depth is up to 50-70 meters. Pelagic habitats in this type include the photic zone, benthic habitats can include it or not.
<input type="checkbox"/> Shelf	Pelagic habitats: Shelf waters Benthic habitats: Shelf sublittoral rock and biogenic reef Shelf sublittoral sediment	Marine systems away from coastal influence, down to the shelf slope. They experience more stable temperature and salinity regimes than coastal systems, and their seabed is below wave disturbance. Depth is up to 200 meters. Pelagic habitats in this type include the photic zone, benthic habitats are beyond the photic limit (aphotic)
<input type="checkbox"/> Open ocean	Pelagic habitats: Oceanic waters Benthic habitats: Bathyal (upper, lower) rock and biogenic reef Bathyal (upper, lower) sediment Abyssal rock and biogenic reef Abyssal sediment	Marine systems beyond the shelf slope with very stable temperature and salinity regimes, in particular in the deep seabed. Depth is beyond 200 meters. Pelagic habitats in this type are, in proportion, mostly aphotic, benthic habitats are aphotic

C5. Classification method used in ecosystem service mapping / assessment in the case study

- CICES Specify, write version number etc. here
- Millennium
Ecosystem
Assessment (MA)
- TEEB
- Other, what?
- No specific
classification was
used

C6. Ecosystem services mapped / assessed (classified below according to CICES v.4.3¹, section, division and class) and representative indicators if used in the case study. Please, list: ES in question; Indicator(s) used for it; Quantification unit; Quantification method (case specific field work / statistics / interpolation modelling / other).

Provisioning		<input type="checkbox"/> Cultivated crops [e.g. ES: Wheat production; Indicator: Crop yield; Quantification unit: Tons/ha of cropland/year; Quantification method: Statistics]
		<input type="checkbox"/> Reared animals and their outputs
		<input type="checkbox"/> Wild plants, algae and their outputs
		<input type="checkbox"/> Wild animals and their outputs
	Nutrition	<input type="checkbox"/> Plants and algae from in-situ aquaculture
		<input type="checkbox"/> Animals from in-situ aquaculture
		<input type="checkbox"/> Surface water for drinking
		<input type="checkbox"/> Ground water for drinking
	Materials	<input type="checkbox"/> Fibres and other materials from plants, algae and animals for direct use or processing

¹ <http://cices.eu/>

	<input type="checkbox"/> Materials from plants, algae and animals for agricultural use
	<input type="checkbox"/> Genetic materials from all biota
	<input type="checkbox"/> Surface water for non-drinking purposes
	<input type="checkbox"/> Ground water for non-drinking purposes
Energy	<input type="checkbox"/> Plant-based resources
	<input type="checkbox"/> Animal-based resources
	<input type="checkbox"/> Animal-based energy
Regulation & Maintenance	<input type="checkbox"/> Bio-remediation by micro-organisms, algae, plants, and animals
	<input type="checkbox"/> Filtration/sequestration/storage/accumulation by micro-organisms, algae, plants, and animals
	Mediation of waste, toxics and other nuisances
	<input type="checkbox"/> Filtration/sequestration/storage/accumulation by ecosystems
	<input type="checkbox"/> Dilution by atmosphere, freshwater and marine ecosystems
Regulation & Maintenance	<input type="checkbox"/> Mediation of smell/noise/visual impacts
	<input type="checkbox"/> Mass stabilisation and control of erosion rates
	<input type="checkbox"/> Buffering and attenuation of mass flows
	<input type="checkbox"/> Hydrological cycle and water flow maintenance
	Mediation of flows
	<input type="checkbox"/> Flood protection
Regulation & Maintenance	<input type="checkbox"/> Storm protection
	<input type="checkbox"/> Ventilation and transpiration

	<p>Maintenance of physical, chemical, biological conditions</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pollination and seed dispersal <input type="checkbox"/> Maintaining nursery populations and habitats <input type="checkbox"/> Pest control <input type="checkbox"/> Disease control <input type="checkbox"/> Weathering processes <input type="checkbox"/> Decomposition and fixing processes <input type="checkbox"/> Chemical condition of freshwaters <input type="checkbox"/> Chemical condition of salt waters <input type="checkbox"/> Global climate regulation by reduction of greenhouse gas concentrations <input type="checkbox"/> Micro and regional climate regulation
<p>Cultural</p>	<p>Physical and intellectual interactions with biota, ecosystems, and land-/seascapes [environmental settings]</p> <ul style="list-style-type: none"> <input type="checkbox"/> Experiential use of plants, animals and land- / seascapes in different environmental settings <input type="checkbox"/> Physical use of land- / seascapes in different environmental settings <input type="checkbox"/> Scientific <input type="checkbox"/> Educational <input type="checkbox"/> Heritage, cultural <input type="checkbox"/> Entertainment <input type="checkbox"/> Aesthetic

Spiritual, symbolic and other interactions with biota, ecosystems, and land- / seascapes [environmental settings]	<input type="checkbox"/> Symbolic
	<input type="checkbox"/> Sacred and / or religious
	<input type="checkbox"/> Existence
	<input type="checkbox"/> Bequest

C7. Methodologies used for mapping / assessment in the case study

Type of the case study:

- To map / assess the **supply**² of ecosystems services
- To map / assess the **demand**³ for ecosystem services

Type(s) of mapping / assessment method used:

- Qualitative
- Quantitative
- Combination of qualitative and quantitative

Methodologies used (e.g. spatial analysis, geostatistical analysis, modelling, qualitative analysis, economic valuation, participatory GIS, interviews, focus groups etc.):

Describe the used methodologies here

GIS software / tools used:

- Open source Describe the used open source GIS software/tools here

² Supply is the rate at which ecosystem services are supplied to some beneficiary. Potential supply means the capacity of a specific area or an ecosystem to provide one or a bundle of ecosystem services to beneficiaries even if not consumed.

³ Demand is defined as ecosystem goods and services currently consumed or used in a particular area over a given time period, not considering where ecosystem services actually are provided. Potential demand refers to assessing the demand based on the assumption that, for example, the number of population in a given distance from areas supplying specific ecosystem services would have demand for those services but not knowing how much of them are actually consumed by that population.

- Commercial Describe the used commercial GIS software/tools here

Sources of data:

- Use of an existing dataset
 Combining existing data from different sources
 Collecting new data

Description of spatial data used:

Select the group, add name of the data and its type, e.g. 25 m pixel, 25 m grid, polygon, polyline, point.

(You can also answer this question by providing a data table. Please, see an example of presenting the used data in table format in **Appendix 1** and an empty table to be filled in in **Appendix 2**, at the end of the fact sheet.)

- Environmental data (e.g. land cover data, recreation areas, hydrological data)

Describe the used environmental data and its type here

- Built environment data (e.g. roads, houses)

Describe the used build environment data and its type here

- Population data

Describe the used population data and its type here

- Other spatial data used (e.g. RS data, in-situ measurements digitized analog maps, statistics etc.)

Describe the used additional GIS data and its type here

D. Position of the case study in Biodiversity Strategy Target 2, Action 5 process and associated activities at national and sub-national level

What policy question is being addressed by this ecosystem service mapping / assessment case study?

The current implementation plans and execution of the Biodiversity Strategy's Target 2, Action 5⁴ is described in the member state fact sheets.

Does this case study have a position in country's current implementation plans to map and assess its ecosystem services?

Yes

No

Will the case study results possibly be used in BD Strategy Target 2, Action 5 related work in the country **in future**?

⁴ <http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm>

Problems and uncertainties encountered in carrying out the mapping / assessment in the case study:

Describe encountered problems here

Abstract of the case study (free text) with map visualisations of key analyses / assessments

Here you can enter free text and also insert images of maps etc.

[Please, remove this text and start here]

E. References of publications related to the case study

F. Links to relevant web pages

(home page of the case study, web pages where results have been presented or brought to public etc.)

Appendix 1. Example of a data table

Data group	Data theme	Dataset	Year of the dataset	Source and link	Data type
Environmental data	1. Land cover	1.1 Finnish National CORINE Land Cover raster 25 m	2012	© SYKE (link to datasource, only in Finnish)	25 m pixel
	2. Conservation areas	2.1 Natura 2000 areas	2012	© Metsähallitus	Polygon
		2.2 Forest Service's property reserved for conservation purposes	2012	© SYKE	Polygon
	3. Valuable landscapes	3.1 Nationally significant landscapes	2010	© SYKE	Polygon
		3.2 Regionally significant landscapes: national database on regional plans	2015	© Helsinki-Uusimaa Regional Council	Polygon
	4. Valuable cultural heritage environments	4.1 Cultural environments of Helsinki-Uusimaa Region	2009	© Finland's National Board of Antiquities	Polygon
		4.2 Nationally significant built heritage	2009	© SYKE	Polygon
5. Forest areas	5.1 Valuable forest habitat according to Finnish Forest Act (Mete-sites)	2011	© Finnish Forest Centre	Polygon	
Built Environment Data	6.National road and street database	6.1 Digiroad	2015	© Finnish Transport Agency	Polyline
Population data	7.Population data	7.1 Statistics Finland grid database (YKR)	2015	© SYKE	250 m grid
Other data	8. Remote sensing data	8.1 Landsat 8 satellite data	2015	© USGS	30 m pixel

