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Ninth Meeting of the Working Group on Mapping and Assessment of Ecosystems and their Services (MAES)

06 March 2015, 09:30 – 17:00

DG ENVIRONMENT

Avenue de Beaulieu 5- 1160 Brussels (metro Beaulieu), BU-5 Room C

Draft REPORT

1. Adoption of the Agenda and Minutes of the meeting of 11th September 2014

The agenda and the minutes were adopted without modification.

2. Feedback on EU 2020 Biodiversity Strategy developments (Target 2, Mid-Term review) by the Commission

This year is the Natural Capital Year and there will be a succession of important events and deliveries related to nature and biodiversity in Europe, such as the adoption of the State of Nature Report in EU in April/May, and of the mid-term review of the EU 2020 Biodiversity Strategy in October. These will be important milestones for the Fitness check of nature legislation currently undertaken by the European Commission with results expected in early 2016 (http://ec.europa.eu/environment/nature/legislation/fitness_check/index_en.htm). There are also important links with EEA State and Outlook of Environment Report 2015, which was released in March 2015 (<http://www.eea.europa.eu/soer>). On the policy side, the Latvian Presidency is organising an informal council with a joint session on biodiversity and energy, and a dedicated conference in May addressing the issue of biodiversity integration in other policies, which will contribute to the review. This will be followed by the meeting of the Nature Directors where the fitness check and MTR will be discussed. The Luxembourgish Presidency has foreseen Council conclusions on biodiversity issues in December 2015 and a possible informal council in July pending confirmation. The European Parliament (EP) also intends to issue a resolution on MTR. There will be a stakeholder workshop on MTR organised on 4 June lunchtime during the 2015 Green Week on "Nature – our health, our wealth" (<http://ec.europa.eu/environment/greenweek/>). Other important events include a Conference on Green Infrastructure on 5 May, jointly organised by the European Economic and Social Committee (EESC), the Committee of the regions (CoR), the EP Intergroups on Climate Change, Sustainable Development and Biodiversity, and on Urban, and the European Commission with the attendance of Commissioner Vella (<http://www.eesc.europa.eu/?i=portal.en.events-and-activities-green-infrastructure-success>). This event follows on last year Green Infrastructure Conference at the COR. In September, there will be an important conference on Fitness check in Brussels, where draft results of the evaluation will be shared and discussed with Member States and key stakeholder groups. The Natural Capital Financing Facility (NCFF) is now properly established (http://ec.europa.eu/environment/life/funding/financial_instruments/ncff.htm). The European Investment Bank (EIB) supports investment in biodiversity-related projects

benefitting biodiversity and climate adaptation in forms of loans instead of grants in order to demonstrate these projects are feasible and to attract business (<http://www.eib.org/products/blending/ncff/index.htm>).

On the practical side, a service contract was launched at the end of 2014 to support the next steps of GI implementation. The Standing Forestry Committee is regularly being briefed on MAES activities related to forest. The EP will draft a report on the EU Forest Strategy, which should be available before summer where MAES will be explicitly mentioned.

Discussion points

3. MAES 2015 delivery

Since last meeting, there has been a series of activities going on, including the organisation of training sessions with Member States on mapping ecosystem services (see ppt on 2015 overview). Under the European Economic Area (EEA) Agreement, Norway is supporting work on ecosystem assessment, including outside the EU.

a) Mapping and assessment of ecosystems in EU by Markus Erhard from EEA

The conceptual framework for ecosystem assessment has been developed and a first EEA report on this concept, data and implementation is being finalised. There will be another report on the actual outcomes later this year. The European ecosystem map has been updated (version 2.1) and can be downloaded¹. It is a probability map based on a top-down approach (i.e. probability to find a habitat at a certain place) that now needs to be validated by MS. This work will provide useful input to the fitness check discussion since it can be combined with data on conservation status of species and habitats, and will show the link between status and protection regime. Pressures will also be categorised according to the 6 categories of the Millennium Ecosystem Assessment (Habitat destruction, Invasive alien species, Population growth, Pollution, Over-harvesting and Climate change – HIPPO C) and mapped (e.g. nitrogen input from agriculture). The way to aggregate all pressures is a sensitive issue and has to be tailored according to specific targets. Tools are offered to do combine pressures. This work also covers marine for one layer. The mapping and assessment of the impact is still being investigated (e.g. how does a pressure like nitrogen affect ecosystem condition, ecosystem function and biodiversity/species). See ppt

b) Mapping and Assessment of Ecosystem Services by Joachim Maes from JRC

A report on trends in ecosystem services at EU scale will be published soon. The report presents the trends from 2000-2010. Data will be uploaded on Ecosystem Partnership Visualisation Tool for use by research community (<http://esp-mapping.net/Home/>). Thirty indicators from the 2nd MAES report have been used for the mapping and assessment of ecosystem services, out of which 15 are related to provisioning services and meet CICES criteria, 12 cover regulating services and have been used together with data from models, remote sensing and atlases, and 3 indicators were available for cultural services. Overall, the ecosystem 'winners' are urban and forest ecosystems and the 'losers' are cropland, grassland, heathland and shrub. On the ecosystem services' side, water regulation and erosion control are enhanced (thanks to forest expansion), but there is a decrease in pollination potential

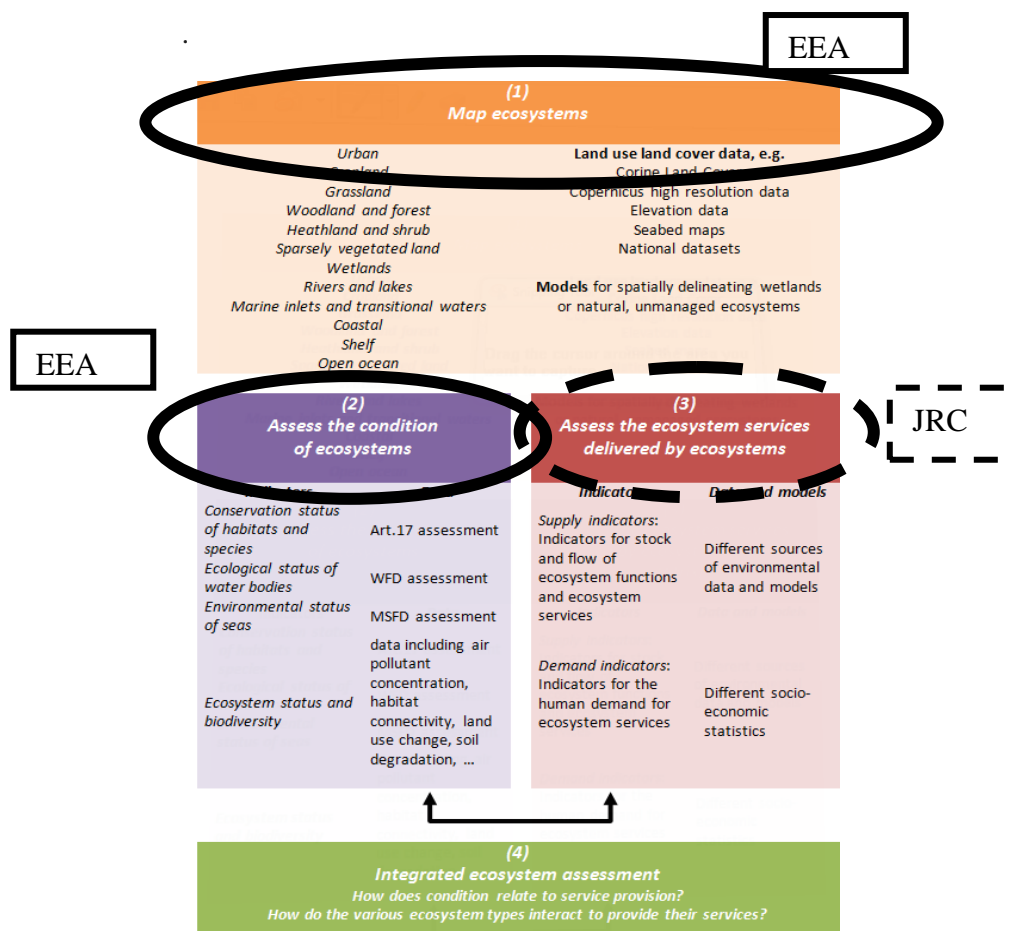
¹ <http://projects.eionet.europa.eu/eea-ecosystem-assessments/library/draft-ecosystem-map-europe>

due to habitat loss, especially grassland. The net productivity is increasing in the northern hemisphere, with an increase in biomass due to increased pressures (climate change and nitrogen deposition). Soil indicators are poor and we need the contribution from the soil pilot to improve this. There is a growth in organic agriculture and timber, water is used slightly more efficiently. Trends are also developed at country level and MS are invited to provide feedback.

In conclusion, there are positive trends in ecosystem services from man-made ecosystems and negative trends for the ones related to biodiversity, especially due to the loss of grassland and heathland. Maps and data are available for in-depth analysis. Now EEA and JRC have to make an in-depth analysis of ecosystem services capacity. More information is also available on circa.

Next step - the integrated assessment

As indicated in the graph below, EEA work is covering components (1) and (2) of the common assessment framework while JRC is covering component (3). Now it is time to put together the different components in order to avoid misinterpretations since these assessments cannot be used in isolation. This will be the first integrated ecosystem assessment for Europe that will help define the total bundle of ecosystem services at pixel level. From the lessons learned, a complete cookbook will be developed to help MS to do a similar exercise.

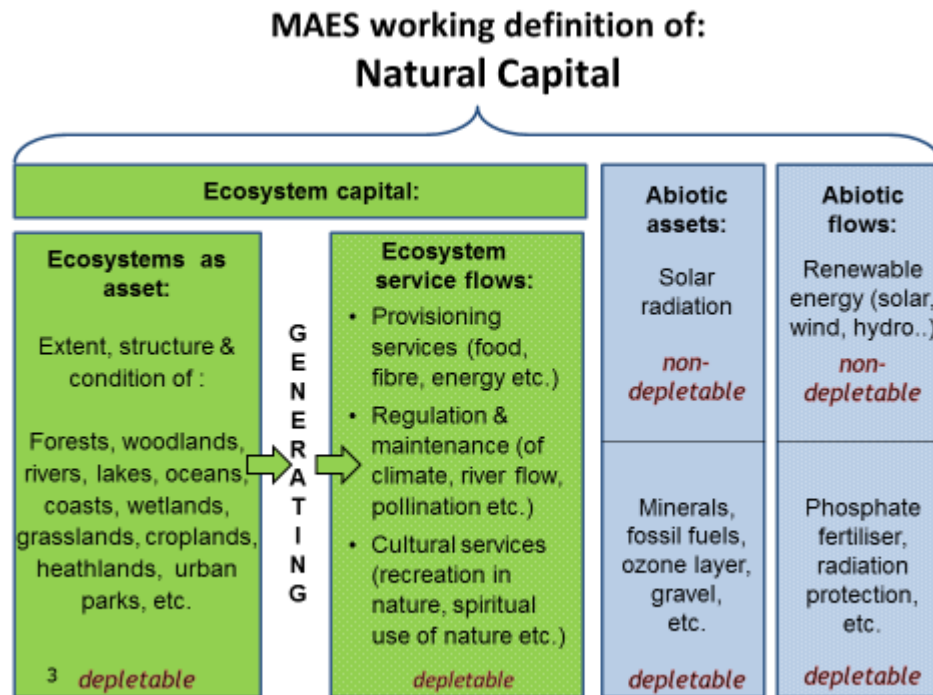


The ultimate objective of this exercise is to support the sustainable use of ecosystem services depending on ecosystem capacity and demand. Assessing the demand is currently missing and it is expected that progress on ecosystem accounting work will provide more information on it but this will be for after 2015. A MAES delivery

workshop is planned for the end-of-year and should address issues such as capacity, demand (including multinational dimension), scale and protocols.

c) Natural Capital Accounting by Jan-Erik Petersen from EEA

The NCA Reference document is being finalised on the basis of the numerous comments during consultation. These are very useful and help to improve sections that require further work. The final revisions will also further clarify the focus of MAES work on ecosystem capital (see figure below).



The final revisions will also aim at including more practical examples and methodological advice (without duplicating available international guidance on ecosystem accounting).

In the context of EEA work on first 'simplified ecosystem capital accounts' for Europe, the EEA is also planning to organise an expert workshop in September. The objective is to compare this methodological approach with work undertaken in EU Member States and is meant to support the development of ecosystem accounting in the EU.

A roadmap for ecosystem (capital) accounting in the EU was presented, which focuses on 4 main objectives: 1) to strengthen collaboration with MS; 2) to further elaborate the concept; 3) to implement step-wise; 4) to consolidate the approach at EU level. This work would proceed in 3 phases:

- 1) Biophysical ecosystem asset accounts in 2015-16;
- 2) Accounting for ecosystem services 2016-18; and
- 3) Valuation of ecosystems and their services 2018-20.

During the discussion, some MS raised the fact that valuation work is developing independently from accounting and there is a lot going on already on economic valuation of certain services. The objective here is to establish the biophysical

foundation for applying valuation more systematically. Accounting provides a framework to structure the information and its primary purpose is not to include economic values. It is also important to distinguish market and non-market values and to involve users from the beginning in this exercise.

The EU 2020 Biodiversity Strategy (cf. Action 5) foresees the economic valuation of ecosystem services and while the main EU focus on valuation will be in 2018-20, the work should start now. Also the values to be integrated into accounting and reporting systems are to be taken in broad sense, not only the economic one.

Eurostat provided clarification on the work currently undertaken on environmental accounts where flow data are provided by Member States but now balance sheets have to be provided as well, including land. There is also a need to estimate uncertainty ranges, as is being done under IPCC and IPBES.

Finally, ESTAT presented the proposal for a Knowledge Innovation Project (KIP) on NCA, which is based on 7EAP priorities and should last over time. It is designed to supplement the MAES initiative. The idea is to improve what exists already and fill data gaps as necessary. Spatially-explicit data are needed so that an integrated system of EU-wide data layers on ecosystem and their services would be developed where MS could plug in. At the moment, there are separate pieces of data and the challenge is to make them more compatible with each other and ensure their maintenance over time. Biophysical accounts are required as basis for valuation work. In this learning process, we need to standardise the data in a shared framework (accounting data have been standardised for years). It is an incremental approach that is still being discussed and a formal approval is awaited in the course of 2015.

→ **Action: MS are invited to provide feedback to the NCA presentation and to react to the questions in next days by email so that progress can be made on the way forward.**

3.1. Progress at MS level, including update from national MAES-related platforms

a) Report from Belgium:

Hans Keune from the Belgian Platform on Ecosystem Services (BEES) presented the video on the BEES Christmas market that took place between scientists and users in December 2014 in Gembloux (http://www.ulg.ac.be/cms/c_5570971/fr/marche-de-noel-autour-des-services-ecosystemiques). There will be a discussion on the soil pilot on 20 March (tbc) where everybody is kindly invited.

Wouter Van Reeth from the Flemish Region (INBO) presented the latest report on the state of biodiversity and nature that is delivered to the government every 2 years. The current assessment is about the relation between society and nature. It is the first delivery from a 3-stage approach where the first one focuses on the assessment of state and trend (NARA-T), then on policy tools in 2016 (NARA-B), and finally on scenarios for green infrastructure in 2018 (NARA-S). As preliminary results, for 15 out of 16 services, supply is not meeting demand which means that the ecosystems are overused. Urbanisation is very high and still increasing in Flanders, while intensive agriculture which is still important is decreasing. The synthesis report is based on 16 ecosystem assessments. The benefits were referred to as 'social outcomes' that were valued (not always in monetary terms). Maps are powerful tools but selective (e.g. difference between demand and use). For most services, the local supply of provisioning services is not sufficient to support the needs and most is therefore imported. 30% of Flanders is

flood-sensitive but only 0.8% of the territory has been designated as for flood protection area. The use of the ecosystem services approach is increasing everywhere but agriculture is lagging behind. In conclusion, Flanders tends to focus on mono-service and technical use of the land and needs to move to more natural processes (nature-based solutions).

b) Report from the Netherlands:

The online Atlas of Natural Capital of the Netherlands was presented by Saskia Ras (Ministry of Infrastructure and Environment), which is giving access to the maps and data needed for (local) decision-making. 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. See <http://atlasnaturalcapital.nl>

J. van Bodengraven (Ministry of Economic Affairs) presented the TEEB-related studies undertaken in the Netherlands, including on natural capital accounting. The objective of TEEB-NL phase I from 2010-13 was to raise awareness on the value of ecosystem services (for cities, business, healthcare, international trade, rural development), then to look at policy implications in societal action plans (e.g. greening cities, investment plan for Caribbeans) with a strong focus on business with the establishment of a platform for business. The next phase (2014-15) is to get from thinking to practice with pilot projects and case-studies (e.g. flooding, CAP greening, groundwater supplies) and lessons learned and publish a synthesis report on “Natural Capital The Netherlands (NKN).”

c) Recent Finnish developments by Petteri Vihervaara

TEEB for Finland is now published with a roadmap for decision-makers (<https://helda.helsinki.fi/handle/10138/152815>). It is not exactly following the MAES methodology but is closely related to it. A framework of national ecosystem services indicators (10 for provisioning, 12 for regulating services and 6 for cultural services) has been developed online <http://biodiversity.fi/ecosystems-services>. FI is actively involved in the Soil Pilot and in MAES marine with Deltares. Virtual Lab applications are developed for integrated assessments and scenarios. FI is also involved in ESMERALDA.

d) Other national and stakeholders developments (e.g. Germany, the Czech Republic, France, Italy, UK, etc.)

Germany presented a short update of German activities, including the recommendations for and development of a set of indicators on ecosystem services with stakeholders, including on ecosystem condition. These indicators, which are available at national level, need to be mapped. The project will finish at the end of 2016.

France presented the French assessment of ecosystems and their services (EFESE). For more details, see Annex I.

Italy explained that the MAES process in Italy is carried out by the Ministry of Environment with the scientific support of a multidisciplinary team from the Sapienza University of Rome and the Italian Botanical Society (see Annex I).

UK referred to the Natural Capital Report published last month. A Biodiversity and Ecosystem Sustainability (BES) project is looking at biodiversity and ecosystem services. Another programme is looking at the complexity of valuation, especially for those with no market value to be reported in 2017. Natural England is looking at the

potential for mapping ecosystem services using habitat maps as proxy. In Wales, an ecosystem approach is developed to underpin natural capital usage. In Scotland, SEPA is looking at water quality using the MAES framework for flood risks decisions. Scotland's land use strategy is to be reviewed next year (see Annex I).

Poland referred to the EcoServ symposium on ecosystem services, organised every 2 years by UAM university of Poznan. The last symposium organised in September 2014 with the participation of the European Commission raised political support. As a result, a project on MAES for Poland has started and will be finished this year. MAES for urban is starting in 10 city regions and also at local level in Ramsar areas. Most importantly, there is now good understanding of the policy relevance at ministry (e.g. Nature Director).

Monia Martini from WWF- Romania referred to a project related to MAES to be launched from March 2015 to April 2016 on "Demonstrating and promoting natural values to support decision-making in Romania" (Short title: Nature4Decision-making – N4D), which will be implemented with funds from the EEA/Norwegian Financial Mechanism 2009-2014 (see details in Annex II).

Ireland provided an update on some recent MAES-related activities (since December 2014) in Ireland (see Annex II).

e) Guidance on upload of MAES deliverables from Member States on BISE by Markus Erhard from EEA

EEA provided a short guidance document² for uploading maps and assessments from Member States on the BISE platform (e.g. case-studies and metadata as zip file, map services for digital atlas). It is important to stress that the BISE platform is only a viewer and that data ownership remains with the MS. Sabine Roscher from the ETC-BD is the contact person (roscher@mnhn.fr) with copy to Markus (Markus.Erhard@eea.europa.eu).

4. Progress on MAES Pilots

4.1. Brief update on latest developments of ongoing pilots on Agriculture, Forest, Freshwater and Marine Pilots by Joachim Maes from JRC

JRC gave a brief update on latest developments from 4 MAES ecosystem Pilots: development of a dedicated report on mapping and assessment of forest ecosystems and services (contact: José Barredo); on agriculture, work is continuing under the PEGASUS project; on freshwater ecosystems, a cookbook is being prepared in collaboration with the MARS programme and OpenNESS case-studies; on marine, there was no follow-up since the last call for volunteers but work under the DEVOTES project will contribute to MAES marine.

4.2. Soil Pilot: presentation of draft work plan and membership by Jacques Delsalle from ENV.B1 and Alberto Orgiazzi from JRC

Jacques Delsalle from ENV.B1 presented a preliminary work plan that was shared with participants after the meeting. A survey on soil protection measures will be launched this year with the soil pilot and there will be an assessment next year on

² <https://circabc.europa.eu/sd/a>

how agricultural policy is effective in protecting soils. There was a scoping meeting in January with BE, NL and FI. There is also interest from UK (Scotland) and France. The objective is to increase awareness on soil and ecosystem services. Firstly, there will be an identification of policy needs and priorities, including transboundary benefits of soil protection, capacity-building and reinforcement of the knowledge base. The idea is to work at 2 levels: EU (by JRC) and national/sub-national levels. Clear boundaries/synergies need to be built with the other MAES ecosystem pilots. In phase 1, the focus would be on biophysical assessment. Key issues to be addressed, include the interaction between soil and oceans, links with the LUCAS soil survey, soil protection and restoration/remediation. Research projects, such as ECOFINDERS and LANDMARK should also contribute to the work. A dedicated workshop is planned for October (back-to-back to Milan Expo?).

→ **Action: MS are invited to provide feedback to Jacques Delsalle (Jacques.Delsalle@ec.europa.eu) on the Soil Pilot work plan and call for volunteers by 20 March 2015.**

Mapping and Assessment of Ecosystems and their Services – what about sediment?

Jos Brils, as representative of the European network for sediment issues (SedNet), which involves sediment professionals, universities, etc. referred to some recommendations of last year event between BE and NL on ecosystem services in Antwerpen. Sediments are not a waste and provide a lot of services (including detoxification of pollutants). A questionnaire has been sent to 12 MS on the inclusion of sediments in MAES as is already the case in NL, CZ, BE. There is a case for an example and for the presentation of the results of a master thesis on ecosystem services and data from sediments.

In conclusion, it was agreed to include some questions on sediments as part of the soil survey questionnaire.

4.3. Urban Pilot: presentation of draft work plan and membership by Grazia Zulian from JRC and Martijn Thijssen from NL

Martijn Thijssen presented the relevance of MAES for cities for policy (e.g. urban sprawl, cost of inaction with regard to climate change estimated at €45 billion in terms of financial risk, etc.). A lot of these challenges can be addressed through green infrastructure. Birmingham is willing to become one of the greenest cities in the world. In NL, teeb.stad is a small valuation tool. Lots of activities are going on but there is not much cooperation between cities (unlike the alliance on climate change to reduce CO₂). It would therefore be important that one outcome of the urban pilot would be to enhance contact between cities. Grazia Zulian from JRC presented the process in 2 steps: 1) synthesis of practices; 2) assessment of a sample of cities in Europe. A questionnaire has been prepared with policy and structural questions for MS and research community (so-called 'Pilot-friends'). After Easter, the work will start and a workshop may be organised after summer as well as a training session for cities. Ben Casper from ENV.F3 would like to be included in the mailing list.

Action: Call for volunteers to test the questionnaire and provide comments before it will be sent out for a wider survey.

5. MAES supporting contract

5.1. Brief presentation of the 2nd year results and 3rd third year work plan of the MESEU contract by Leon Braat from ALTERRA

Leon Braat briefly presented the state of affairs and forthcoming activities for the last months of the contract. The questionnaire survey should be completed (4 MS still missing) on use of map of ecosystem services for planning activities.

5.2. Update on TRAIN - MAES Training supporting contract by Marta Peres Soba from ALTERRA

Marta presented the results of the last sessions of the MAES Hands-On workshops. These trainings involve a lot of preparation work - EU is providing tools (ESTIMAT from JRC, QuickScan from EEA and GIS from CH), participants come with data and produce maps. Participation covers policy, GIS and assessment expertise. So far, 31 maps have been produced with metadata. The results will be transferred to BISE and are INSPIRE compliant. Participants found tools easy and novel. Ideally, support should be continued afterwards (help desk?).

Information points

6. **Presentation of the EU Atlas of the Sea by Anne-France Woestyn from DG MARE**

Anne-France Woestyn from DG MARE presented the European Atlas of the Seas, which is targeted at professionals and general public. The objective is to make information more accessible and available to all. It is a joint work between JRC and EEA. The tool is available for other applications (MAES marine?) and any kind of improvement can be proposed.

7. **Presentation of support contract on "Mapping and assessment of marine ecosystem services and link to good environmental status (phase I)" by Deltares for ENV.C2**

The consultant Deltares presented a project undertaken for DG ENV on mapping and assessment of marine ecosystems and services and link to good environmental status. It involves Finland and Spain. The objective is to better link MAES work with MSFD. There are some challenges, especially with definitions. The outcome of this phase I will be the delivery of a roadmap on the way forward. The ultimate objective is to operationalise MAES and MSFD in order to support maritime planning, good environmental status and blue growth agenda. A workshop is planned around the end of June. Phase I will last until the end of September and the preliminary results can be presented at next MAES WG meeting.

Actions:

- **Call for 'marine' volunteers to answer the questions (see ppt);**
- **Call for marine case-studies to be used for the study;**
- **Synergies with MESEU, ESMERALDA, MAES Marine Pilot, MARE Atlas, Gulbenkian Foundation, etc. will be explored, as well as with Germany, Ireland, Portugal and UK, who expressed interest in this work;**

8. Other related developments:

8.1. Update on Copernicus MAES-related developments by Markus Erhard from EEA

EEA provided a short update on latest developments (see ppt on circa): For Corine Land Cover 2012, 29 countries are currently available on national platforms and a first mosaic will be provided in summer on EEA website. The full coverage is expected in the last quarter of 2015. High resolution layers work is going on. First mosaic (forest, imperviousness, wetlands and water) will be available from April 2015 onwards with further gap filling in the coming months, including a first version of the new grassland layer. The urban atlas will be available on Copernicus website in third quarter at the latest. For the new local biodiversity service (riparian zones), 3 test cases (Norway, Turkey and Germany) are available. The full coverage (ca. 2 Mio. km² in EEA 39) will be delivered in the 3rd quarter of 2015. The link to land service web site is provided on the last slide of the Copernicus presentation.

8.2. Update on research support projects from FP7 and Horizon 2020 by Sofie vandewoestijne from RTD

RTD referred to innovation-based research as priority (nature-based solutions). More fundamental research will be funded by research networks such as Biodiversa (including on soil and sediments, marine and seascape). FP7 projects OPERAS and OpenNESS are setting up a joint platform named OPPLA. Under Horizon 2020, the coordination and support action ESMEALDA has started and is co-ordinated by Benjamin Burkard ('Mr Matrix') which follows the same idea than the MAES training workshops. This project that only started in February will be presented at next MAES WG.

8.3. Follow-up of MAES Conference on Natural and Cultural Capital, Rome by Piercarlo Zingari from Italy

Italy informed that the proceedings of the science-policy conference on natural and cultural capital, which took place in Rome on 23 November are published. The Charter of Rome has been referred to in the Council conclusions of 17 December. On 25 May, there will be a follow-up meeting in Latvia with focus on cultural ecosystem services. During 2015 Green Week, there will be a session (4.3) on "Linking cultural and natural capital" on 4 June. On 22 May, there will be a biodiversity-related event at Milan Expo.

Actions:

- **Interested participants in the workshop on cultural services in Riga on 25 May should contact Piercarlo Zingari (zingari.piercarlo@minambiente.it)**
- **Volunteers to further investigate the assessment of cultural services should contact Pam Berry (pam.berry@eci.ox.ac.uk).**

9. Next meetings:

- CGBN, Brussels, 12-13 March 2015
- Conference on Green Infrastructure: a European Success Story, 5 May 2015
- Green Infrastructure and Restoration Working Group, Brussels, 6 May
- Nature Conference, Latvia, 26-27 May
- Nature Directors meeting, Latvia, 28-29 May 2015

- Greenweek on "Nature: our health, our wealth" 3-5 June, Brussels
- Green Infrastructure and Restoration Working Group, Brussels, 18 September 2015 (joint session with MAES WG on 18 am tbc)
- CGBN, 24-25 September 2015
- Workshop on first MAES delivery, Brussels, end 2015

10. Conclusions

The Chair thanked all participants for their active contributions and took note of the increasing number of people and topics to be addressed. It is therefore foreseen to extend next meeting to 1 day and a half with a more structured and selective agenda.

The next meeting of MAES Working Group is planned for 17-18 September 2015 with a joint session with the Working Group on Green Infrastructure on 18 am (tbc).

All supporting documents and presentations are available on circa <https://circabc.europa.eu/w/browse/17476b2d-ca83-49a1-85f3-98394df311b1>

Member State's update on MAES-related activities

FRANCE

EFESE - the French assessment of ecosystems and their services - started in 2013. The objective is to set up 6 ecosystem working groups - which should cover all the ecosystems in France - and 1 group working on methodology. The last one should help the others on mapping in particular. At the moment, there are 4 WG in place: the forest WG, which has already written the methodology and the biophysical analysis and works on indicators and maps at the moment. By the end of 2015, there will be a draft of this report (biophysical and economic analysis); the urban WG is working quite well although there are difficulties to define the urban ecosystem; it launched a survey about cities in order to know what the main issues are. The results of the survey are still being analysed by the group but the top priorities are climate change mitigation (heat island) and health; a leaflet has been published about ecosystem services. By June 2015, the methodological and biophysical part of the report should be finished. Of course, all the reports have to be validated by the scientific committee. Final report expected in 2016. → interested in the urban MAES Pilot; the agro-ecosystem WG is run with INRA as partner since September 2014. They haven't yet organised a WG but they have already worked on the topic with experts. They are still working on the conceptual framework to be applied to agro-ecosystem. The biophysical part is expected in May. There is no partner yet for the wetland WG but some preparatory work is ongoing on the first steps of biophysical analysis (typology, definitions, etc.). The economic assessment is done by colleagues from the ministry. On marine ecosystems, IFREMER is a potential partner (IFREMER) and financial arrangement needs to be sorted out. Work is pending on mountains and rocks.

In 2014, some events were organised to promote the project, such as a meeting between researchers and PHD students and our pilot groups. It permitted an interaction between the 2 worlds. Some of the researchers can be called on a specific issue for the report; there was a first approach with the private sector, which was represented by MEDEF (the national business federation). The aim is to promote the project but also to know which actions is the business taking on ecosystems services and in the long term how to integrate the natural capital in corporate accounting. At the moment, a proper meeting hasn't been organised yet and there are still some discussions about which sector should be invited to the roundtable; a 2nd edition of EFESSE seminar was organised where the specificities of ecosystem services in agriculture and forest were presented. There was also a dedicated discussion on the assessment of ecosystem services from coral reef; in November there was a session on cultural services presented by researchers. It was more about non-economically valuable services. There will be a second session this year. There is a chapter on natural capital (chapter 11 for each ecosystem) in the final report. The next step is to publish the conceptual framework and the glossary, and also a 4-page summary of the aim of the project. The publication should be available in a few months.

In conclusion, France is interested in urban and soil Pilots. It would be an excellent idea to have a chapter in MAES future reports on how to characterise ecosystems. FR is also very interested in Natural capital accounting.

IRELAND

Update on some recent MAES MS activities (since December 2014) in Ireland:

- A Symposium on Mapping Ecosystem Services in Ireland, jointly organised by the National Biodiversity Data Centre, the Environmental Protection Agency and the Department of Arts, Heritage and the Gaeltacht, was held in Waterford IT on the 16th February, 2015 to support the initiation of the MAES process in Ireland and the Irish Forum on Natural Capital.

- The symposium to explore the technical challenges involved in national ecosystem assessment and ecosystem service mapping, as well as the identification of existing data and data needs within Ireland. The Irish Forum on Natural Capital was launched 3/3/15 – see <http://www.naturalcapitalireland.com/terms-of-reference.html>. One of its key objectives is to build awareness of, and assist, the implementation of MAES in Ireland.
- A new 3 year research project ‘ESManage’ on incorporation of Ecosystem Services Values in the Integrated Management of Irish Freshwater Resources commenced in Feb 2015 <http://www.biodiversityireland.ie/wordpress/wp-content/uploads/MKQ-presentation.pdf>

ITALY

The MAES process in Italy is carried out by the Ministry of Environment with the scientific support of a multidisciplinary team from the Sapienza University of Rome and the Italian Botanical Society.

Data, concept and methodology. Italy can rely on long term data sets and maps at different scales covering: climate, physiography, geomorphology, soils, vegetation and biogeography, forests, and land cover. On an overall national analytical framework, the ecoregions of Italy have been classified in a comprehensive effort (2 Divisions, 7 provinces, 11 Sections and 33 Subsections) (see Blasi C. et al, 2014 Classification and Mapping of the Ecoregions of Italy, 2014. *Plant Biosystems*, Vol 148, No. 6). This classification is aimed to be used for biodiversity policies, territorial planning and management, ecological modelling, including MAES-related actions such as development of green and blue infrastructure.

Main steps of the national process are:

- 1) **the Italian MAES Workshop**, held in March 2014 at the Sapienza University of Rome. In order to establish a national MAES platform for cooperation between science and policy, the workshop brought together some twenty universities, research centres, national and European experts from JRC.
- 2) attending to the **High-Level Conference on MAES, Brussels, 22 May 2014**. Italy officially attended the Conference with a presentation of its MAES work and a declaration of support to the MAES activities in Europe during its Semester Presidency June-December 2014.
- 3) **MAES activities**. A preliminary collection of updated and detailed basic data at the national level was carried out, including ecoregions, land units, bioclimate, biogeography, potential natural vegetation and CORINE land cover at the fourth level. The four steps of the MAES process have been defined: ecosystems mapping, state of ecosystems, ecosystem services assessments and integrated assessment between ecosystem condition and service provision.

As for the first step, an original Map of the Ecosystems of Italy was drawn at 1:100,000 scale through the integration of national CORINE land cover at the fourth level with potential natural vegetation, bioclimatic and biogeographic information. The map consists of 92 legend classes including 36 types of forests, and these types could properly be expanded or further merged according to specific classes of ecosystem services. Furthermore, each ecosystem type was characterised according to the faunistic component through the contribution of the **Italian Zoological Union / UZI**.

The assessment of ecosystem conservation status is completed for each ecosystem type as well as for ecological land units with the same vegetation potential. Selected parameters are

naturalness and hemeroby, coverage and spatial configuration of the ecosystem types, while potential natural vegetation is adopted as a reference model. In this case as well, ecosystem assessment was completed with the information on faunistic component condition.

The assessment of the ecosystem services is concluded for 5 pilot types of ecosystems that are well investigated at the national level, i.e. beech forests, urban forests, olive groves, lakes and marine *Posidonia* beds. Assessment includes provisioning, regulating and maintenance services, such as carbon stock and sink of forests, nursery habitats and water provision of lakes, as well as cultural services provided by olive groves, old-growth forests, and lakes. Ecosystem services assessed on fauna include: number of ungulates hunted and quantity of fish caught (as for the provisioning section), wildlife damages and number of alien species (as for the regulating section), number of important bird areas and number of flag species (as for the cultural section).

Finally, preliminary studies are in progress as regard links between the conservation status of ecosystems and their capability to provide services. In particular, a multi-scale and multi-level model for setting restoration priorities and promote the use of green infrastructure is being defined, with a special focus on urban contexts.

- 4) **Further ongoing activities.** In the current year, a more detailed assessment has begun in order to measure actual condition for each of the ecosystem patch that belongs to the different ecosystem types. This approach is allowing a finer assessment of ecosystems' condition according to their geographic and dynamic context. At the landscape level the assessment of the conservation status will be deepened from the national level to administrative region and detailed ecoregions.

Update on the MAES-related activities and developments in Italy will be available for the MESEU project.

ROMANIA

The main components of the project on "Demonstrating and promoting natural values to support decision-making in Romania" (Short title: Nature4Decision-making – N4D), include:

- 1) biophysical mapping and assessment of key ecosystems and their services;
- 2) baseline economic valuation of key ecosystem services;
- 3) development of a DSS - Decision Support System for use of MAES results into policy and decision making.

The project is supported by the Ministry of Environment and Climate Change and is based on a partnership between NEPA, the Romanian Space Agency, WWF-Romania and NINA the Norwegian Institute for Nature Research.

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UK

Scotland

Scotland has worked for some years to fully incorporate our [Natural Capital Asset Index](#) into the decision making processes. The link between people and the land in Scotland is deeply ingrained in the national consciousness, this is often reflected closely in the culture in all its forms. A wide range of indicators relevant to natural capital and the importance to human wellbeing have

formed part of the [National Performance Framework measurements](#), for example on recreational use of natural spaces – something considered to be taking strides towards going ‘beyond GDP’. An [evaluation of the Natural Capital Asset Index](#) was completed last year. In addition there are many practical projects in Scotland including the [Central Scotland Green Network](#), which is one of Europe’s largest greenspace initiatives. It is a national priority and included within Scotland’s National Planning Framework 3 as a national development. It uses green infrastructure to deliver socio-economic benefits that help to regenerate central Scotland with a vision that: “By 2050, Central Scotland has been transformed into a place where the environment adds value to the economy and where people’s lives are enriched by its quality” It is very much focused on the connection between people and the environment. The CSGN covers 10,000 square kilometres, 19 local authority areas and is home to 3.5 million residents. It includes both urban and rural areas but the focus of activity is on urban areas in line with three priority areas for action: greening of vacant and derelict land; developing active travel networks; delivering improvements in disadvantaged communities.

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