

**Join EEA Scientific Committee – EEA Seminar**

***Ecosystems and their services: building the knowledge base for European assessments***

***European Environment Agency, Copenhagen, 01 October 2014, 09.00 to 16.30***

**Objectives**

The overall objective of the seminar is to comment on the knowledge base developments for and structuring of assessments for *Ecosystems and their services*, from the triple perspectives of (i) policy, (ii) assessments and (iii) research & monitoring. To this end we will:

1. Clarify the *Ecosystems and their services* objectives of the EEA work and their relevance to the implementation and visions of relevant European Union policies, in particular the EU Biodiversity Strategy to 2020 and its Mid-Term Review planned for 2015.
2. Consider to this end the scoping and structuring of ecosystem assessments and their related knowledge requirements to support European assessments on *Ecosystems and their services* by EEA and partner institutions (ENV, JRC, Countries) and how to accelerate the development of this knowledge over the period 2014-2020.
3. Address the developments towards multiple interfaces between policy and science in the *Biodiversity, Ecosystems and their services* area, in particular the programme of work for regional assessments by IPBES (Intergovernmental Platform for Biodiversity & Ecosystems Services).
4. Discuss and identify strategic applied research gaps on the topic at stake and how knowledge can be further aligned to policy needs through Horizon 2020 strategic programming and activities and FP7 follow-up activities.

**Context**

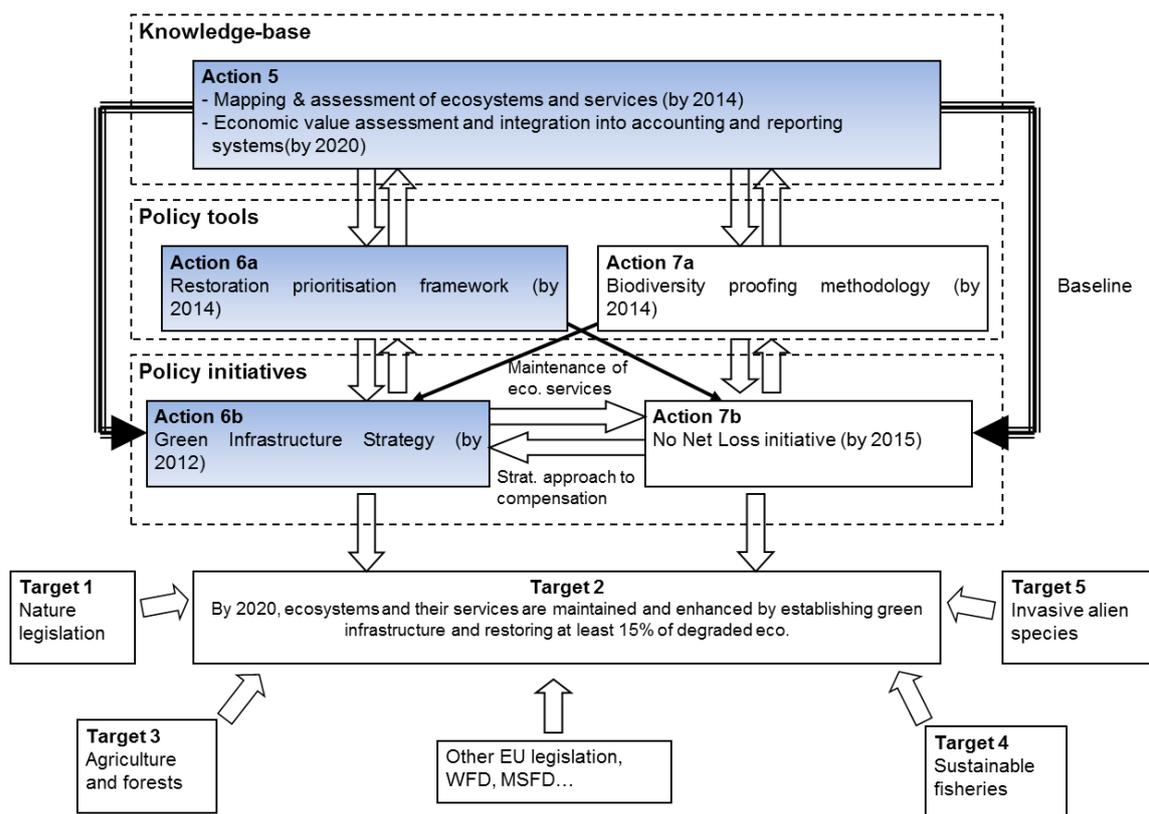
The European Union's economic prosperity and well-being is underpinned by its natural capital, i.e. its biodiversity, including ecosystems that provide essential goods and services, from fertile soil and multi-functional forests to productive land and seas, from good quality fresh water and clean air to pollination and climate regulation and protection against natural disasters. To live well in the future, urgent, concerted action should be taken now to improve ecological resilience and maximise the benefits environment policy can deliver for the economy and society, while respecting the planet's ecological limits.

The 7th EAP (*Living well within the limits of our planet*) reflects the Union's commitment to transforming itself into an inclusive green economy that secures growth and development, safeguards human health and well-being, provides decent jobs, reduces inequalities and invests in, and preserves biodiversity, including the ecosystem services it provides (natural capital), for its intrinsic value and for its essential contribution to human well-being and economic prosperity. Measures to enhance ecological and climate resilience, such as ecosystem restoration and green infrastructure, can have important socio-economic benefits, including for public health.

The Union has therefore agreed to:

- ✓ halt the loss of biodiversity and the degradation of ecosystem services in the Union by 2020, and restore them in so far as feasible, while stepping up the Union contribution to averting global biodiversity loss.
- ✓ achieve good status for all Union waters, including freshwater (rivers and lakes, groundwater), transitional waters (estuaries/deltas) and coastal waters within one nautical mile of the coast by 2015.
- ✓ achieve good environmental status in all marine waters of the Union by 2020.
- ✓ strive to achieve a land degradation neutral world in the context of sustainable development.
- ✓ support the aims of halting global forest cover loss by 2030 at the latest and of reducing gross tropical deforestation by at least 50 % by 2020 compared to 2008 levels.
- ✓ ensure that:
  - air pollution and its impacts on ecosystems and biodiversity are further reduced with the long-term aim of not exceeding critical loads and levels;
  - the nutrient cycle (nitrogen and phosphorus) is managed in a more sustainable and resource-efficient way.

*Figure: The policy framework of EU Biodiversity Strategy and setting of the assessment (shaded boxes)*



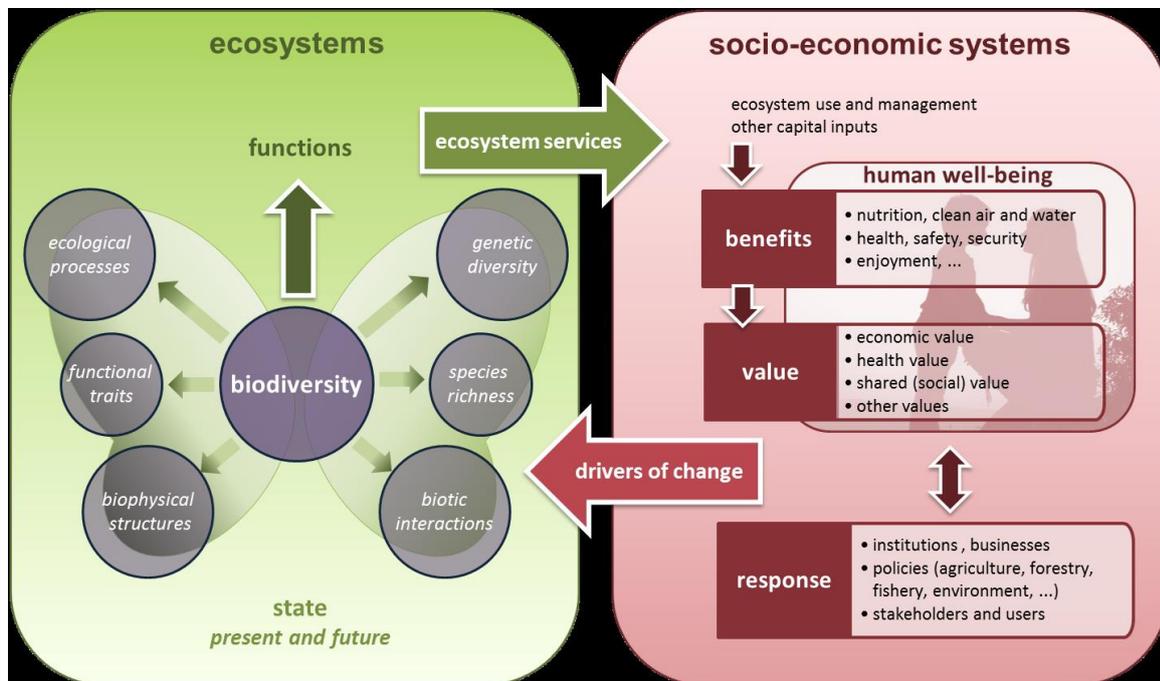
Against these targets & objectives stand the facts that nearly two-thirds of the world's ecosystems are in decline and there is evidence that planetary boundaries for biodiversity, climate change and the nitrogen cycle have already been transgressed. In Europe, only 17 % of species and habitats assessed under the Habitats Directive have favourable conservation status, and the degradation and loss of natural capital is jeopardising efforts to attain the Union's biodiversity and climate change objectives. For marine species and habitats (water column, seabed), less than 20 % (often much lower) of all biodiversity features (i.e. species, habitats and ecosystems) are considered as being in Good Environmental Status -this pattern is consistent throughout all the marine regions. Over 12 000 alien species that are found in the European environment, 10-15 % have reproduced and spread, causing environmental, economic and social damage (vectors of diseases, health problems, hamper forestry or cause agricultural losses, to mention but a few).

Such status of species and habitats as well as the degradation and loss of natural capital have high associated values (and costs) which have not yet been properly valued in our social and economic system. 30 % of the Union's territory is highly fragmented, affecting the connectivity and health of ecosystems and their ability to provide services as well as viable habitats for species. Unsustainable land use is consuming fertile soils, and soil degradation continues, resulting in impacts on global food security and the achievement of biodiversity targets.

Towards assessment products: In 2013 Commission published a joint effort with EEA called 'Analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity strategy to

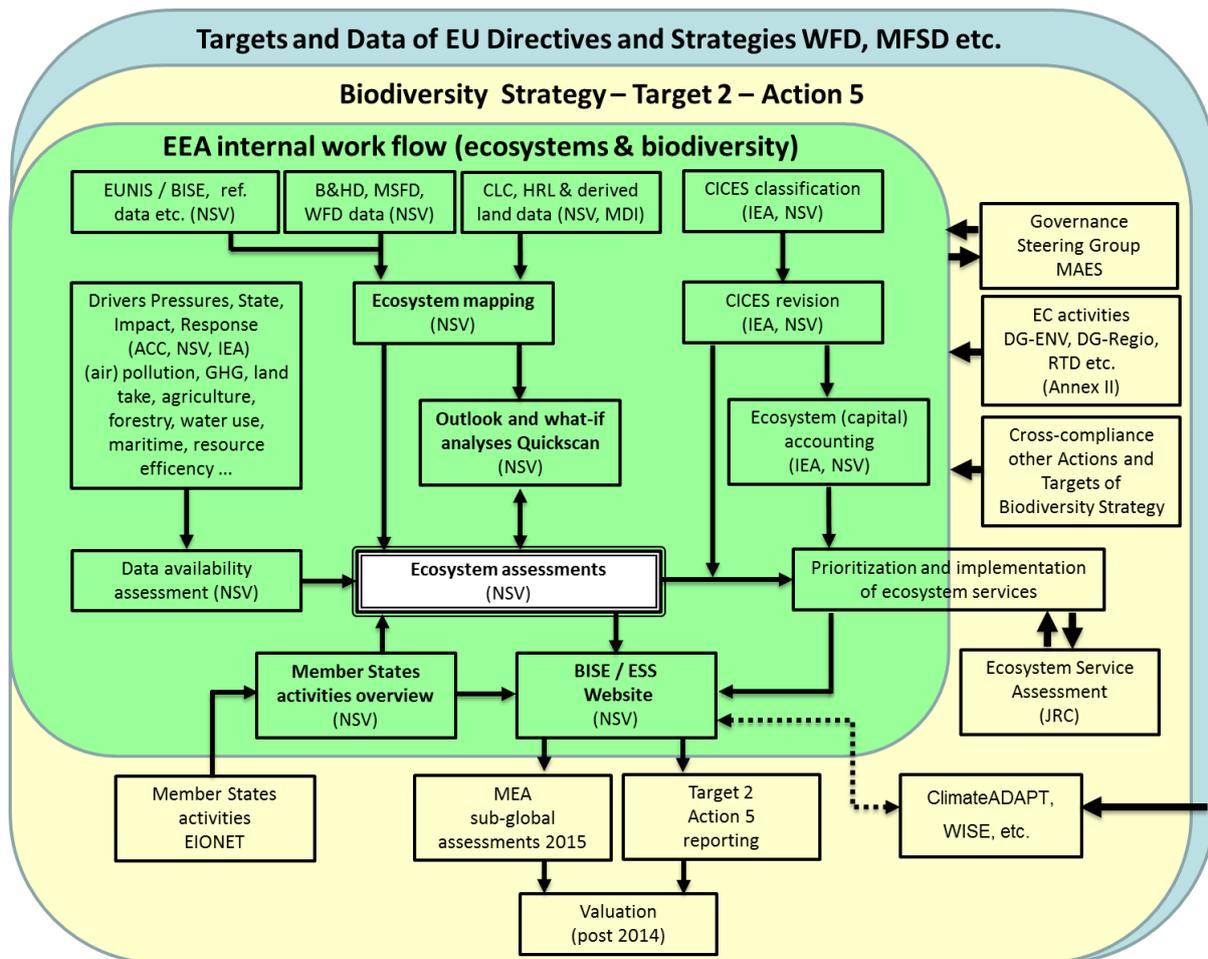
2020' and in 2014 a second report that summarised the six pilots designed for enabling cooperation with the countries, and taking stock of 2013 developments.

Figure: Conceptual framework for EU wide ecosystems assessments



The approach established through these reports and a number of MAES (*Mapping and Assessment of Ecosystems and their Services*) working group meetings with Members states was confirmed at a high level conference on MAES (22 May 2014). At the same time EEA has developed its new vision for next 5 years (MAWP 2014-2018) and started its implementation through the AWP2014.

Figure: EEA information and workflow in support to ecosystem assessments



DG Environment has commissioned a consultancy project which main task is to support the evaluation of the implementation of the EU 2020 biodiversity strategy as a response to both EU and global mandates. The project will establish a methodology and baselines by which progress on actions and targets will be evaluated for the mid-term review.

In terms of knowledge/research Issues, the MAES process has come up with a first identification across the lack of (access to) data, different monitoring, assessment and reporting approaches, and specific knowledge gaps (ecosystem condition/services, interactions nature & social-ecological systems, valuation) which led to recommend developments in:

- systematic, long-term strategy for generation and assessment of data concerning ecosystem condition
- methodologies for assessment of ecosystem condition
- relation between species & habitat conservation status and ecosystem condition
- measurement of ecosystem services – physical metrics
- valuation of ecosystem services – opportunities and constraints of monetary valuation
- knowledge about ecosystem services and social benefits for human health, identity, feeling of place, social exclusion
- technologies, information systems and processes for green infrastructure (green roofs, walls, management systems for buildings, etc.)
- metrics for assessment of equivalence in terms of ecosystem descriptors, ecosystem condition, ecosystem services.

### **Seminar structure and synopsis (proposal)**

- Session 1 (morning): EU policies (frameworks, objectives & targets) towards ecosystem-based management measures and actions
  - DG ENV: 7EAP (natural capital / resource efficiency agendas) and BD20 (mapping/accounting/valuation - restoration, no net-loss, green infrastructure)
  - Countries: implementation / responses –to invite contrasted approaches (e.g. UK, F, SK, G)
  - Science: Natural capital & ecosystems services –resilience issues / concepts and valuation / pricing theories

*Presentations, Questions/Answers, Discussions, Wrap-up reflections*

- Session 2 (afternoon): main gaps in Applied Research & Knowledge to support the policy targeting discussed in Session 1
  - DG RTD: H20 (Nature-based solutions / Bio-economy / Ecological sciences)
  - IPBES: work plan and interfacing / EU *BiodiversityKnowledge* (FP7 KNEU project) final recommendations
  - Science: eg the socio-ecological gap / Ecosystems services (JRC)

*Presentations, Questions/Answers, Discussions, Wrap-up reflections*

- Session 3 (final): conclusions- SC paper on main lines of developments and applications

All sessions in plenary setting; participants (30-45 people) will be Scientific Committee members, EEA staff, invited speakers and selected external experts – Chatham House rule.

Background material will be collated in a Seminar document.

-----