MAES

Mapping and Assessment of Ecosystems and their Services (MAES)

Presentation to Irish Forum on Natural Capital Steering Committee

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Biodiversity Monitoring
NPWS

MAES Context

Our life insurance, our natural capital: an EU biodiversity strategy to 2020 (EC 2011)

6 Targets, 20 Actions: to halt loss of Biodiversity & degradation of ecosystem services in EU by 2020

Target 2: Maintain and restore ecosystems and their services

* By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems.

Action 5

- calls Member States (MS) with the assistance of the European Commission to **map and assess the state of ecosystems and their services in their national territory by 2014** and to **assess the economic value of such services** and **promote the integration of these values into accounting and reporting systems at EU and national level by 2020.**

What is MAES?

- MAES: 1 of 3 working groups est'd 2012 to address Target 2
  - (others are No Net Loss(Action 7b) and Green Infrastructure/ecosystem restoration framework (Actions 6a & 6b).
- Will facilitate consistent aggregation of EU activities in relation to Action 5
- Apart from Action 5 EC also aim **to use MAES to develop indicators to inform other EU policies** (CAP, Forest, Water, Climate, Marine, Regional)

MAES Organisation

* Collaboration between EU bodies (EC, JRC, EEA, ETCs), commissioned experts, member states, stakeholder representatives and NGOs
* Meetings: Working Group meetings (2/yr), stakeholder workshops, conferences
* Supporting actions: Commissioned research & reports, pilots (development of classifications, methods, tools, technologies)

How does MAES assist MS?

Through MAES, EC have developed **an analytical framework** for MS to use, which is comprised of

- An overall framework
- A typology of ecosystems
- A typology of ecosystem services
- Indicators to map and assess biodiversity, ecosystem condition and services

The Framework will facilitate integration of the key elements for ecosystem assessment (e.g.

- State of biodiversity
- Flow of ecosystem services from ecosystems to society
- Value changes associated with changes in ES service supply
- Scenarios/outlooks)

Interlinkages

MAES Framework builds upon other ES approaches incl.

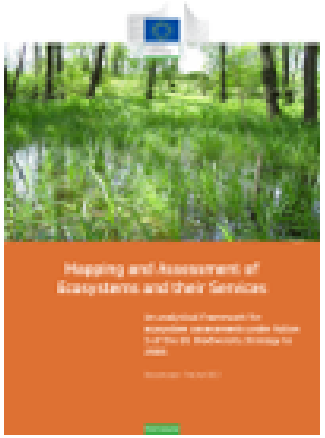
TEEB (The Economics of Ecosystems and Biodiversity, 2010) which in turn built upon the **MA** (Millennium Ecosystem Assessments, 2005)

MAES approach intended be of benefit to other ongoing developments in **Natural Capital Accounts** (UN Stats Div.) and **IPBES** (Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services) for and to benefit from them.

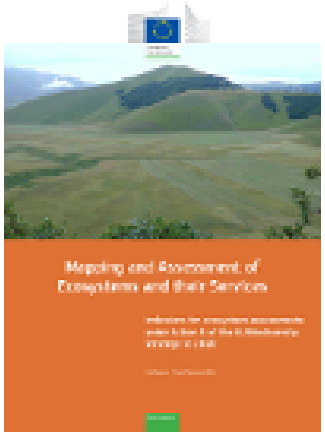
IPBES

* Scoping 'Regional/subregional assessment on biodiversity and ecosystem services' (IPBES Deliverable 2b) just completed.
* Aim: to assess impacts of biodiversity and ecosystem services and threats to them on human wellbeing and the effectiveness of responses (CBD Strategic Plan/Aichi Targets CBD Biodiversity Strategy Action Plans)
* Plan to do one for Europe and central Asia 2015-2018

Key publications



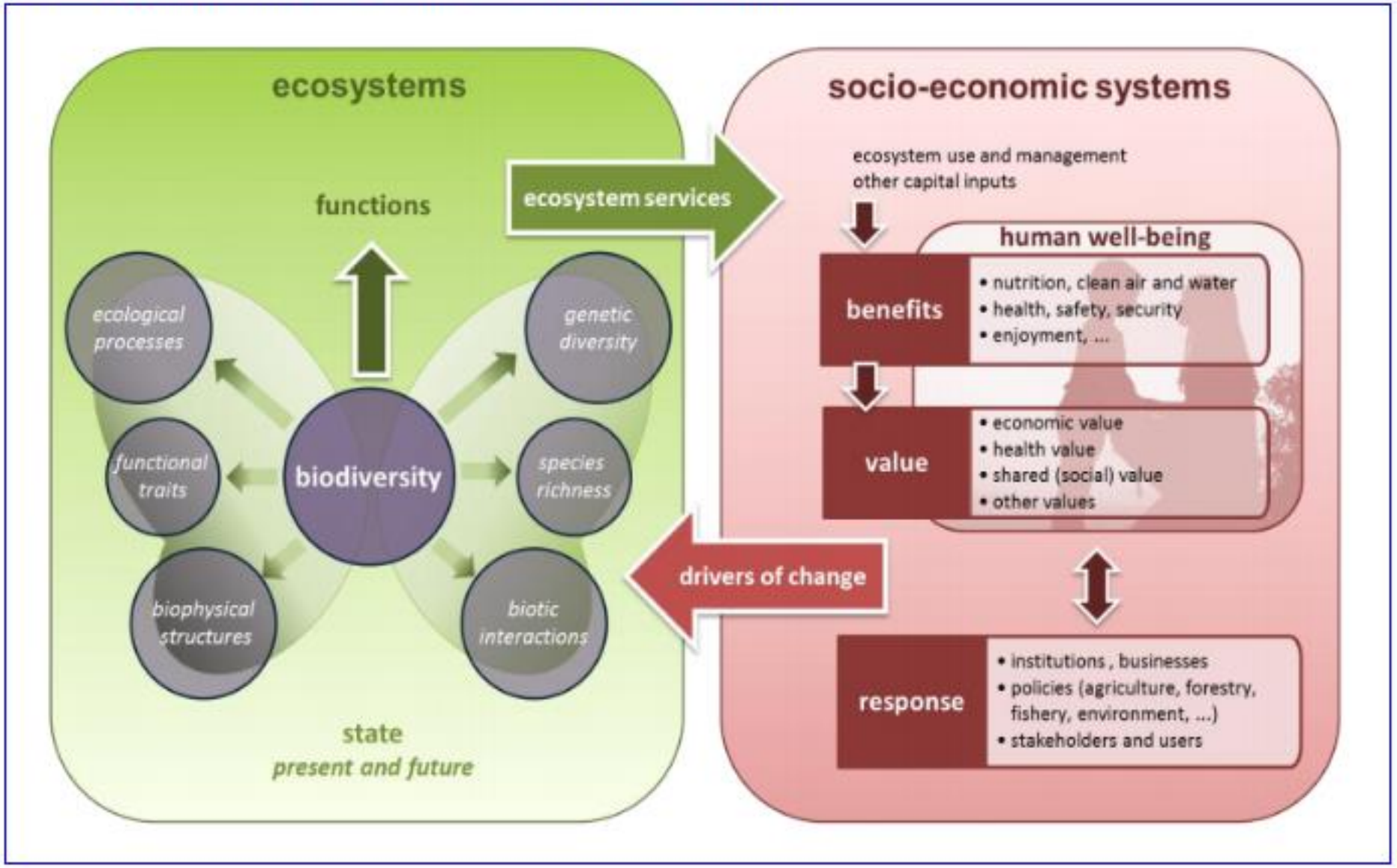
An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020.
Discussion paper – Final, April 2013



Indicators for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020
2nd Report – Final, February 2014

http://biodiversity.europa.eu/maes

Conceptual framework for EU wide ecosystem assessment



EU 2013, Maes et al. Mapping and Assessment of Ecosystems and their services. An analytical framework for ecosystems assessments under Axction 5 of the EU biodiversity strategy to 2020.

MAES Programme

4 strands of work to deliver Action 5:

I. **Biophysical baseline mapping and assessment of major ecosystems**

II. **Biophysical baseline mapping and assessment of defined ecosystem services**

III. Alignment of ecosystem services assessments with scenarios of future changes (future outlooks), developed together with policy makers and stakeholders to ensure their utility for decision making

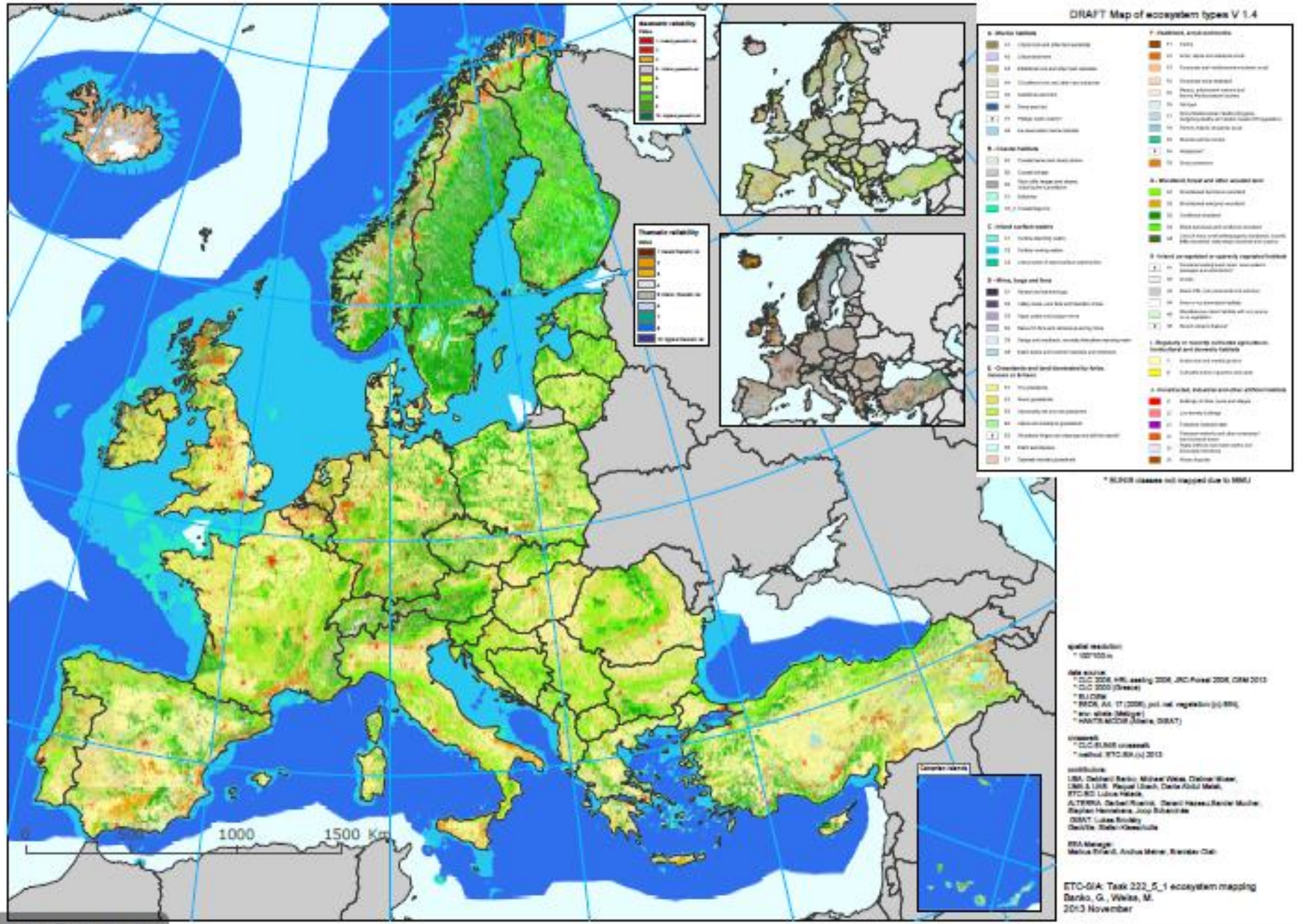
IV. Valuation of ecosystem services for baseline and contrasting scenarios and integration into environmental and economic accounting

I & II prioritised, III & IV to be done by 2020

MAES progress

- ✓ **Ecosystems classification**
  12 ecosystem types (based on combination of landcover (Corine) and EUNIS habitat classifications)
- ✓ **Ecosystems mapping**
  EU map completed Dec 2013
- ✓ **Ecosystems condition**
  EU wide indicators developed based on suite of available info (incl WFD, MSFD, Art17, AEI), assessment in progress
- ✓ **Ecosystem Services classification**
  CICES* (Hierarchical classification, 3 classes of service – 1. Provisioning, 2. Regulating and maintenance services, 3. Cultural services)
- ➢ **Ecosystem Services assessment**
  Indicators in development for each 3 CICES services (Provisioning/Regulating & maintenance/Cultural)
- ➢ **Natural Capital Accounting**
  Pilot started, will have further workshops.
  This will be the focus of work for 2015.

CICES: Common International Classification of Ecosystem Services, WFD: Water Framework Directive
MSFD: Marine Strategy Framework Directive, Art17: Habitats Directive reporting, AEI: agri-environmental schemes


DRAFT Map of ecosystem types V 1.4
1000
1500 Km
Canarian islands
spatial resolution
data source
crosswalk
contributors
EEA Manager
ETC-SIA: Task 222_5_1 ecosystem mapping
Banko, G., Weiss, M.
2013 November

MAES Activities opportunities for MS engagement

2014:

Forest Workshop December (IE Forest Service attending)

2015:

Number of 'Hands on' Workshops in 2015 to assist MS in mapping and assessment of ecosystems – **possibly one in Ireland in Feb**

New Pilots-Dates TBA:

* Freshwater
* Marine pilot
* Soils pilot
* Urban pilot

Future focus on refining indicators ES Assessments/Indicators/

And NB **NCA** - so need to mobilise communities outside biodiversity

National MAES?

* Action 5 is reflected in Ireland's National Biodiversity Plan (2011-16)
  * Action 3.3: 'Establish a working group by 2011 to progress the development of a national terrestrial and marine habitat map by 2015'.
* Other drivers?
  * Mapping biodiversity and ecosystems nationally is necessary for the implementation of environmental legislation
  * Potential to enhance integration of biodiversity objectives into sectoral policies (mainstreaming)
  * Indicator for sustainable development
  * Tool for integrated spatial planning
  * Provide a baseline from which change can be detected and monitored
  * Assess the effectiveness of cross sectoral policies

Biophsyical baseline mapping & assessment

I. **Biophysical baseline mapping and assessment of major ecosystems**
II. **Biophysical baseline mapping and assessment of defined ecosystem services**

* Relatively easy part!
* Range of activities ongoing in Ireland (Public & private sector) incl following with NPWS involvement

1. An **inter-agency working group established 2011 to progress a national habitat/landcover mapping programme based on collective need. (NPWS, EPA, OSI, DAFM, Teagasc, Heritage Council)**
   * Potential to provide an appropriate foundation for ecosystems mapping
   * National standard, wall to wall, synoptic
   * Supported by statutory bodies – facilitate integration of ES analysis with analyses by these and other statutory orgs.
2. **National vegetation database & classification** (NPWS & NBDC)
   * Valuable for developing crosswalk between MAES ecosystem classes and national classifications, ecosystem state

MAES Ireland -next step- scoping?

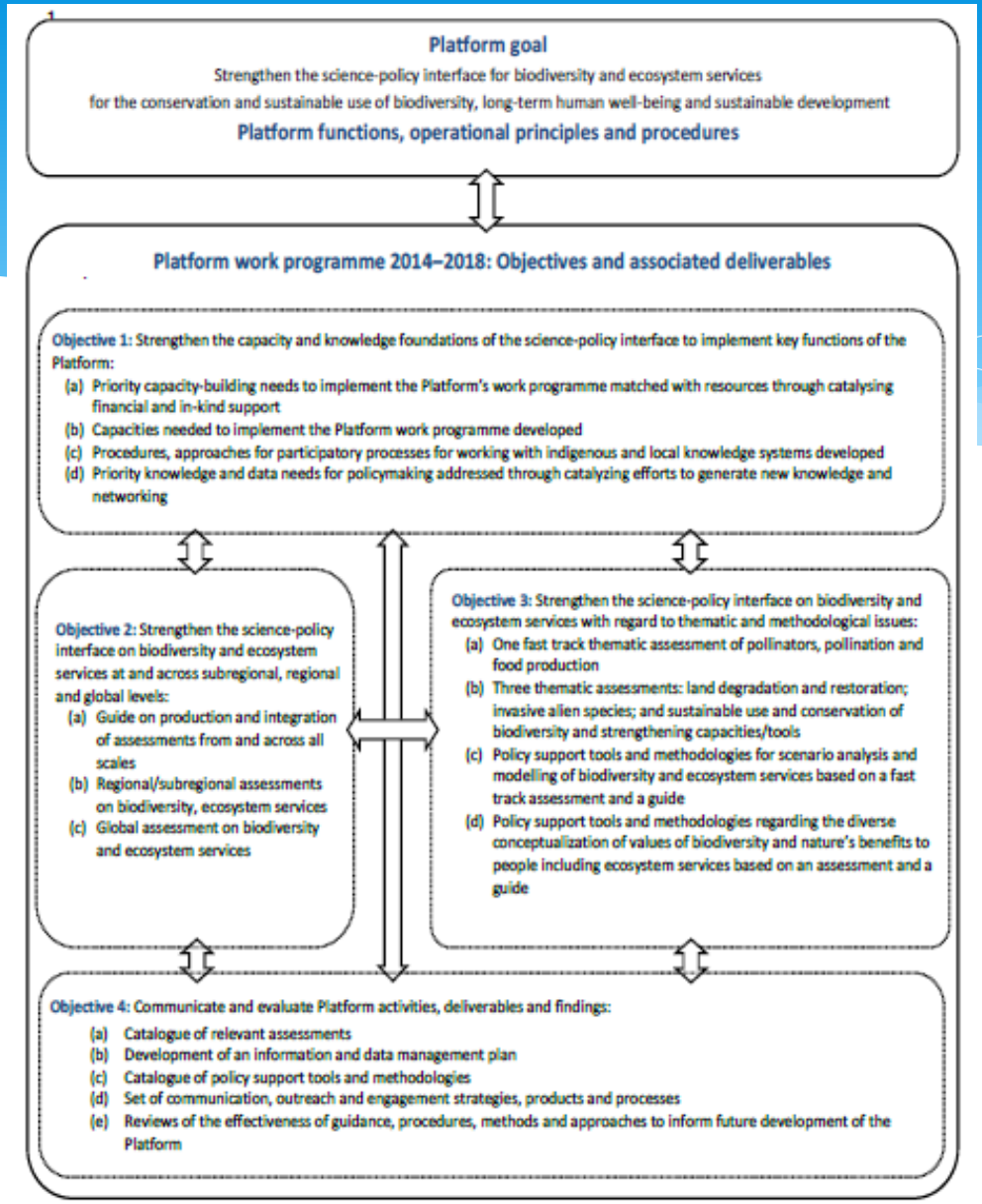
Establish how a national ecosystem, ecosystem services assessment programme and products could be integrated into national and local implementation and policy structures

1. Identify key potential integration points and users
2. Establish requirements around those points/users
   a) how is it to be used
   b) what ***level*** and ***type*** of information is needed by potential users (including spatial and thematic resolution)
   c) how will it relate to existing and data flows and decision making/policy processes
   d) look at potential programme for delivery, size, cost, time frame,
3. Review approaches in other EU MS and intnl. developments
4. Assess benefits and risks
5. Propose options/recommendations for delivery

Follow-on (pending recommendations)

1. Review MAES classifications/indicators and adapt for Irish conditions (natural/human and policy)
2. Implementation – establish programme for baseline and on-going monitoring

Thank you


Platform goal
Strengthen the science-policy interface for biodiversity and ecosystem services
for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development
Platform functions, operational principles and procedures
Platform work programme 2014–2018: Objectives and associated deliverables
Objective 1: Strengthen the capacity and knowledge foundations of the science-policy interface to implement key functions of the Platform:
(a) Priority capacity-building needs to implement the Platform's work programme matched with resources through catalysing financial and in-kind support
(b) Capacities needed to implement the Platform work programme developed
(c) Procedures, approaches for participatory processes for working with indigenous and local knowledge systems developed
(d) Priority knowledge and data needs for policymaking addressed through catalyzing efforts to generate new knowledge and networking
Objective 2: Strengthen the science-policy interface on biodiversity and ecosystem services at and across subregional, regional and global levels:
(a) Guide on production and integration of assessments from and across all scales
(b) Regional/subregional assessments on biodiversity, ecosystem services
(c) Global assessment on biodiversity and ecosystem services
Objective 3: Strengthen the science-policy interface on biodiversity and ecosystem services with regard to thematic and methodological issues:
(a) One fast track thematic assessment of pollinators, pollination and food production
(b) Three thematic assessments: land degradation and restoration; invasive alien species; and sustainable use and conservation of biodiversity and strengthening capacities/tools
(c) Policy support tools and methodologies for scenario analysis and modelling of biodiversity and ecosystem services based on a fast track assessment and a guide
(d) Policy support tools and methodologies regarding the diverse conceptualization of values of biodiversity and nature's benefits to people including ecosystem services based on an assessment and a guide
Objective 4: Communicate and evaluate Platform activities, deliverables and findings:
(a) Catalogue of relevant assessments
(b) Development of an information and data management plan
(c) Catalogue of policy support tools and methodologies
(d) Set of communication, outreach and engagement strategies, products and processes
(e) Reviews of the effectiveness of guidance, procedures, methods and approaches to inform future development of the Platform