MAES Pilot on forest ecosystems and their services - Outlook

Co-leaders of the pilot:

José I. Barredo (EC-JRC, Institute for Environment and Sustainability)
Cristina Marta-Pedroso (CIMU - Polytechnic Institute of Bragança, PT)
Henrique Pereira (German Centre for Integrative Biodiversity Research)
Jan Bengtsson (Swedish University of Agricultural Sciences)
Tord Snäll (Swedish University of Agricultural Sciences)
Jon Moen (Umeå University, Sweden)
Hannah Östergård (Swedish Environmental Protection Agency)
European forests

- Cover around **40%** of terrestrial ecosystems
- Home to much of the continent’s **biodiversity**
- High **socio-economic** importance
- And **environmental** !!!
MAES Pilot on Forest Ecosystems: scope

• The essential task of the pilot was to **identify available knowledge** useful for mapping forest ecosystems and assess their condition and the services they provide.

• Using a common framework for all MAES pilots.

• **An analytical framework for ecosystem assessment (2013)** to be applied by the EU and its Member States in order to ensure a consistent approach.
### Table 1. Contributions of Member States, stakeholders and EU services to the pilots

<table>
<thead>
<tr>
<th>Column</th>
<th>Nature</th>
<th>Agriculture</th>
<th>Forest</th>
<th>Fresh water</th>
<th>Marine</th>
<th>Natural Capital Accounting</th>
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</table>

Structure of MAES pilots

- **EU Biodiversity Strategy to 2020**
  - Target 2
    - DG ENV B.2
      - MAES WG
        - Member States
        - EC-JRC
        - EEA
        - Stakeholders

**MAES Pilots**
- Forest
- Agriculture
- Marine water
- Fresh water
- Natural capital
- Nature
CICES: The Common International Classification of Ecosystem Services

- CICES was developed from the work on environmental accounting undertaken by the European Environment Agency
- CICES was adopted by the MAES WG
- http://cices.eu

CICES main sections:
- Provisioning services
- Regulating/maintenance services
- Cultural services
### MAES Pilot on Forest Ecosystems: approach

#### Table 7. Cultural services delivered by forest ecosystems

<table>
<thead>
<tr>
<th>Division</th>
<th>Group</th>
<th>Class</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical and intellectual interactions with biota, ecosystems, and land/seascapes</td>
<td>Physical and experiential interactions</td>
<td>Experiential use of plants, animals and land/seascapes in different environmental settings. And physical use of land/seascapes in different environmental settings</td>
<td>Distribution of wildlife/ emblematic species associated with forest</td>
</tr>
<tr>
<td>Intellectual and representative interactions</td>
<td>Scientific, educational, heritage, cultural, entertainment and aesthetic</td>
<td>Citations, distribution of research projects, educational projects, number of historic records, Number/value of publications sold</td>
<td></td>
</tr>
<tr>
<td>Spiritual, symbolic and other interactions with biota, ecosystems, and land/seascapes</td>
<td>Symbolic and sacred and/or religious</td>
<td>Distribution of sites of emblematic plants/forest</td>
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<td>Other cultural outputs</td>
<td>Existence and bequest</td>
<td>Distribution of important areas for forest biodiversity and their conservation status</td>
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</tbody>
</table>

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**Note:** The table represents a summary of cultural services provided by forest ecosystems, categorized into different divisions and groups, with specific indicators for each category.
MAES Pilot on Forest Ecosystems: output

- Report: Indicators for ecosystem assessments under Action 5 of the Biodiversity Strategy (MAES, 2014)

- List and assessment of available indicators for forest ecosystem services (mapping and assessment): datasets, maps, statistics, gaps, common framework...

- Agreement on a comprehensive, operational and widely accepted classification (CICES) and list of forest ecosystem services
MAES Pilot on Forest Ecosystems: output

• List of forest ecosystem services and indicators for mapping and assessment

• e.g. Forest cultural services:

<table>
<thead>
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<th>Class</th>
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</tr>
</thead>
</table>
| Physical and intellectual interactions with biota, ecosystems, and land/seascapes | Physical and experiential interactions | Experiential use of plants, animals and land/seascapes in different environmental settings. And physical use of land/seascapes in different environmental settings | Distribution of wildlife/旗舰 species associated with forest  
Important bird areas associated with forest  
Area of forest accessible for recreation  
Number of visitors  
Number of hunters  
Ecotourism operators  
Area of forests accessible for hunting |
| Intellectual and representative interactions | Scientific, educational, heritage, cultural, entertainment and aesthetic | Symbolic and sacred and/or religious | Citations; distribution of research projects; educational projects; number of historic records  
Number/value of publications sold |
| Spiritual, symbolic and other interactions with biota, ecosystems, and land/seascapes | Spiritual and/or emblematic | Symbolic and sacred and/or religious | Distribution of sites of emblematic plants/forest  
Number of sites with recognised cultural & spiritual value  
Number of visitors |
| Other cultural outputs                        | Existence and bequest        |                                                       | Distribution of important areas for forest biodiversity and their conservation status  
Condition of forest-associated priority species on habitat and birds directives  
Distribution of sites with forest designated as having cultural values  
Number of visitors |
Next steps of MAES and Pilot on Forest Ecosystems

Within Action 5 of the Biodiversity Strategy to 2020: Improve knowledge of ecosystems and their services in the EU:

1) MS, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, (...)

2) (...) 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
Forest ecosystem services, condition and biodiversity

Socio-economic system
Benefits & values (demand)

Forest biomass increment
Busetto et al. 2014

Forest connectivity
Estreguil et al. 2011

Biophysical domain

Biodiversity (plant diversity)
Kier et al. 2005

Pressures & Threats

Source: EFDAC -> FISE
Case study: Multifunctional forest ecosystems

- Fostering multifunctional forest ecosystems supporting different services
- Identification of key ecosystem services and synergies for designing management strategies
Case study: Multifunctional forest ecosystems

Source: Grêt-Regamey et al. 2013
Case study: Multifunctional forest ecosystems

Simultaneous provision of different forest services: avalanche protection (law), recreation (erhol), carbon sequestration (CO2), habitat provision (hab), and timber production (holz) indicating priority ecosystem services and ecosystem services trade-offs (Bebi et al., 2012)
Thank you

Contact:
José I. Barredo: [jose.barredo@jrc.ec.europa.eu]