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Carpathian Ecosystem Services Toolkit

Centralparks | Ján Kadlečík & Ján Černecký | SNC SR | Peter Mederly | PRONATUR
ECOSYSTEM SERVICES (ES) considered as contribution of ecosystems (living systems - natural or semi-natural) to human well-being. Ecosystem services are dependent on natural resources as soil, air, water, biodiversity and wildlife, generally named as natural capital.

Ecosystem services are simply „benefits provided directly or indirectly to people by ecosystems“ - linked to their structure, processes and functions. Through nature and its services people meet big part of their needs, especially:

- Basic resources necessary for survival (food, fresh water, raw materials…)
- Adequate quality of environment and its components (air, water, soil, biota and biodiversity…)
- Socio-cultural outputs (relief, education, spiritual values…)
CONCEPT OF ES IN BROADER CONTEXT

- ES concept is not the theme only of nature conservation, it is related to various policies and fields.

- Typical multi-sectoral theme linking interests of various stakeholders - suitable concept for multi-sectoral cooperation.

- Protection of ecosystems and their services provide benefits not only to biodiversity.
CLASSIFICATION OF ECOSYSTEM SERVICES

International classifications
- Provisioning Services
- Regulating Services
- Supporting (Maintenance) Services
- Cultural Services

Massimiliano Morelli
CONCEPT OF ES IN THE CARPATHIANS

- ES assessment increasingly considered by policy-makers around the world to inform their policies, decisions and management practices
- Recognized in the Carpathian countries, analysis made on ES mapping and assessment, recommendations for further assessment and opportunities how to integrate economic values of ES into accounting and reporting systems, improve knowledge and tools to take ecosystems and their services systematically into account
CARPATHIAN ECOSYSTEM SERVICES TOOLKIT (CEST)

- WPT3 of the Centralparks project
- Interdisciplinary Toolkit for Managers and Analysts for ES assessment - a useful tool for analysis and decisions, adapted to Carpathian conditions
- Aimed to support institutions of local, regional and national public authorities, sectoral agencies, higher education and research institutions, education/training centres, schools and other stakeholders in using ES concept, informed and evidence-based decision making, policy making and management practices in
  - nature conservation
  - urban and spatial planning
  - green infrastructure, agriculture and forestry
  - involvement of stakeholders in this process
  - mainstreaming of ES
- Provides step-by-step guidance on ES assessment and for understanding what can be gained or lost in different management options; can help managers to better understand and solve potential problems and reduce conflicts.
CARPATHIAN ECOSYSTEM SERVICES TOOLKIT (CEST)

- Developed by the expert group from all project countries (workshops, consultations), final version provided in September 2021
- Translated to Czech, Hungarian, Polish and Slovak languages
- CEST trainings for stakeholders based on CEST final elaboration (CZ, HU, SK)
CARPATHIAN ECOSYSTEM SERVICES TOOLKIT (CEST)

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APPROACHES TO ES EVALUATION

Biophysical approaches

1. Data collection
2. Statistical & dynamic modelling
3. Spatial predictions

- Species field observations
- Ecological niche modelling
- Predicted species distributions

Economic (monetary) approaches

- Monetary measures can be used to determine the value of ESs

Socio-cultural approaches

- Participatory approaches

- Survey and event surveys
ES ASSESSMENT PROCEDURE

Basic ES assessment framework
(Rounsevell et al. 2010)

Process of ES evaluation, planning stages

ESMERALDA MAES Explorer
http://www.maes-explorer.eu/
STEP BY STEP GUIDE FOR USING THE CEST

- ES assessment phases, steps, milestones/outcomes
- Useful information sources for respective steps
# Examples of Step by Step ES Assessment

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of eval. ES</th>
<th>Positioning ES</th>
<th>Regulation &amp; Maintenance ES</th>
<th>Cultural ES</th>
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**National ES Assessment in Europe in 2020**

**TAKING COOPERATION FORWARD**
CASE STUDIES OF ES MAPPING AND ASSESSMENT

<table>
<thead>
<tr>
<th>Country</th>
<th>Case Study</th>
<th>Scale*</th>
<th>Area (Km²)</th>
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<td>Bulgaria</td>
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<td>Czechia</td>
<td>Pilot National Assessment of ES</td>
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<td>Finland</td>
<td>Green infrastructure and urban planning in the City of Järvenpää</td>
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<td>Germany</td>
<td>Mapping ES dynamics in an agricultural landscape</td>
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<td>Hungary</td>
<td>ES mapping and assessment for developing pro-biodiversity businesses in the Bükk National Park</td>
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<td>ES mapping and assessment for urban planning in Trento</td>
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<td>Assessing and mapping ES in the mosaic landscapes of the Maltese Islands</td>
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</tbody>
</table>

ESMERALDA case studies (Source: Geneletti et al. 2020)
NATIONAL ES ASSESSMENT IN CARPATHIAN COUNTRIES

Current state, methodology, results, future plans

- Czech Republic

Source: Frélichová et al. (2014)
NATIONAL ES ASSESSMENT IN CARPATHIAN COUNTRIES

- Poland
- Hungary
- Romania

Source: Stepniewska et al. (2018)
NATIONAL ES ASSESSMENT IN CARPATHIAN COUNTRIES

- Slovakia

Source: Mederly et al. (2020)

Source: Černecký et al. (2020)
Addressing ES in different policy and decision contexts

- Nature and landscape protection;
- Spatial planning and environmental impact assessment;
- Stakeholders involvement;
- Mainstreaming of ES

Recommendations and challenges in the ES assessment

Best practice examples

Glossary
• Will be available online on the project website and web site of the Carpathian Convention and in national languages on websites of the project partners
• Feedback from users expected

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Project web site:
https://www.facebook.com/Centralparks/
THANK YOU FOR YOUR ATTENTION