

TRANSGREEN. Integrated Transport and Green Infrastructure Planning in the Danube-Carpathian Region
for the Benefit of People and Nature

Ecosystem Services Assessment of the M3 planned section in East Hungary
Veronika Kiss, Agnes Zolyomi – EcosystemEvaluation
with contribution of Tamara Kovács

„TRANSGREEN” International Conference on
NATURAL-INFRASTRUCTURE

4th April 2019, Budapest

- Why
 - To see how the planned motorway impact the environment and people
- What
 - We made an ecosystem services assessment
- How
 - With wide stakeholders involvement (participatory methods) and qualitative and monetary assessments.
- Where
 - In east Hungary





ECOSYSTEM SERVICES

Source: Eurac research - <https://bit.ly/2WLP0Iz>

Project co-funded by the European Regional Development Fund (ERDF).

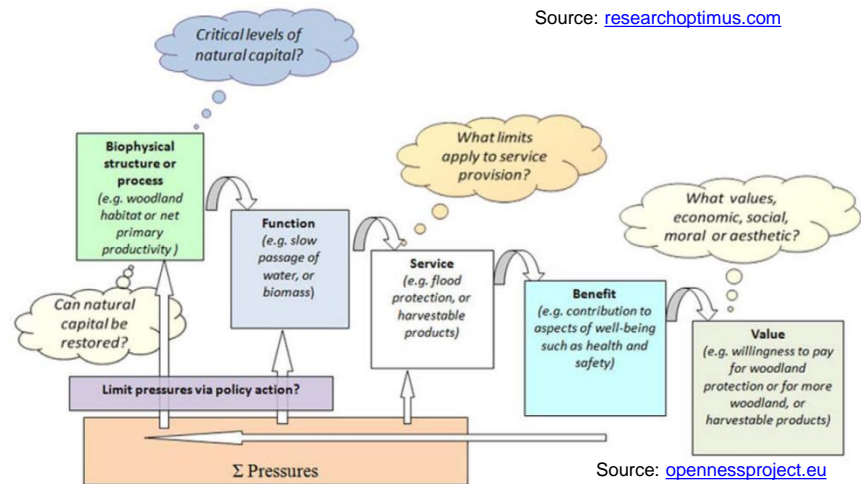
www.interreg-danube.eu/transgreen

Ecosystem services assessment

- Qualitative and quantitative data collection
- Based on cascade model and Niraj-MAES assessment in Transylvania with CEEweb, Milvus and MTA OK



Source: researchoptimus.com



Source: opennessproject.eu

- Qualitative research - participatory approach
 1. Desktop study - to understand the socio-economy and environment of the region
 2. Stakeholder mapping exercise - to see who the key stakeholders are
 3. Interviews - to identify preliminary list of ecosystem services
 4. Expert group I - to check methodology
 5. Stakeholders focus group I and II - to narrow down preliminary list of ecosystem services, validate results, provide recommendations, build a scenario

“Turned away from God, in its mood stumbled on with no understanding of what they were missing out”.

“It doesn’t really matter that we have beautiful landscape. My family doesn’t have money, cannot get on the bus, cannot walk to the doctor - there is neither any pharmacy, nor any doctor.”

“I grew up next to the Tisza, I need the Tisza.”

“No traffic jam, no queuing – I just take my boat and go to the river or take a walk in the forest.”

- 20 ecosystem services identified, deemed most important:
 - Local identity and aesthetic value of nature
 - Mosaic landscape
 - Water
 - Hunting
 - Tourism

- Quantitative research - provide economic value
 - Quantitative analysis of three ecosystem services:
 - Mosaic landscape
 - Hunting
 - Tourism



- **Method** - Discreet Choice Experiment - potential to reveal how locals see their mosaic surrounding in light of the planned motorway section, and which they theoretically value more.
- **Data collection** - 106 people surveyed
- **Result** - 63% prefer the mosaic landscape without motorway. More supportive for this option: women and the age of 30-40.
 - MOSAIC: nicer, more natural
 - MOTORWAY: needed to improve the economy of the state or to ease the travel to work

- **Method** - market price method: hunted games have a market to be sold
- **Source of data** - desktop analysis of balance sheets of hunting associations, interviews, focus group
- **Result** - generally, populations are sustainable, fallow deer population to be regulated, water birds and partridge are disappearing, number of predators (such as golden jackal, fox) is growing, African swine fever
 - annual hunting related ecosystem services value in the area - **8 to 68 million HUF** (62-85% - trophies, ca. 15% - raw meat) – **but the expenses?**

- **Planned M3 impact:** according to most hunters M3 to have unfavourable effect (fragmentation blocks migration - inbred, noise, light disturbing resting), one hunter neutral
 - Small game can recover (but the hare)
 - Deer (esp. red deer) would be disturbed the most
 - 10-15% of the game population would disappear
- No benefit from the highway; the area is unable to support more game, thus no incentive is needed to enhance hunting specialized tourism in the region.

- **Method** - travel cost method evaluates tourism related activities through calculating the costs visitors are willing to pay to visit the concerned area,
- **Data collection** - online questionnaire and data of Central Statistical Office, one expert interview.
- **Results**
 - Annually around 11.250 tourists (87% Hungarian, 80% coming by car/motor)
 - Mostly spend couple of days in the region (over 70%)
 - 43% of the programmes culture, 56% nature, 1% other purpose. Biking, hiking, rowing, hunting, fishing and Tisza beach are most popular among nature

- Annually they spend btw 347 and 386 million HUF in the region in relation to tourism.
- Cost of travel time: 19 m HUF, and cost of travel: 6 m HUF.
- Altogether tourism related ecosystem services is valued to be btw **372 and 411 million HUF/year**
- **Limitations:**
 - grey or black market of tourism (same volume)
 - travel cost method calculation does not contain the spiritual or the aesthetic values, which could be much higher than the calculated amount

- Overall opinion on building the new M3
 - Mixed opinions - most people suggested it will not be beneficial. Some people suggested it will be beneficial only in case of sufficient number of exits.
 - No benefits of M3 listed for tourism, hunting, mosaic landscape, water or local identity.

- Limitations and replicability
 - Compared to larger studies, we had **limited time and resources**, thus, our results can be further assessed
 - **Methodologies** and data collection could have been further **widened** to give more adequate results
 - Each ecosystem services assessment is different and relevant methodology can only be **worked out once the main ecosystem services** to be studied are **narrowed down**.

- Summary

- In spite of its limitation, ecosystem services assessment can **provide an additional picture** on the local situation and preferences that other assessments don't take into account.
- It will always be an **iterative process** to find the methodology as 1. it is based on the identified ecosystem services 2. there is no by the book method.
- Excellent way to **get stakeholders involved**.

Veronika Kiss

veronika.kiss@ecosystemevaluation.com

Agnes Zolyomi

agnes.zolyomi@ecosystemevaluation.com

<https://ecosystemevaluation.com>

www.interreg-danube.eu/transgreen