

CarpathCC Project

In-depth assessments of vulnerability of
environmental resources and ecosystem-
based adaptation measures

Gábor Bálint – Eszter Réka Mogyorósy

“Sharing of experiences on adaptation to
climate change in mountain areas”,

Eger, Hungary, 23 October 2012



STRUCTURE OF THE FRAMEWORK CONTRACT

Implementation: Jan 2012 – September 2013

- Climate change threats and impacts on water resources
- The impacts of climate change threats on ecosystems
- Impact of climate change on ecosystem based production systems
- Adaptation measures
- Stakeholder interaction
- Integral vulnerability assessments in 5 focal areas

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(CHANGES OF) THE CONSORTIUM

Regional Environmental Center (REC)

(VITUKI Environmental Protection and Water Management Research Institute, HU)

Project Management: Eszter Réka Mogyorósy (Gábor Bálint)

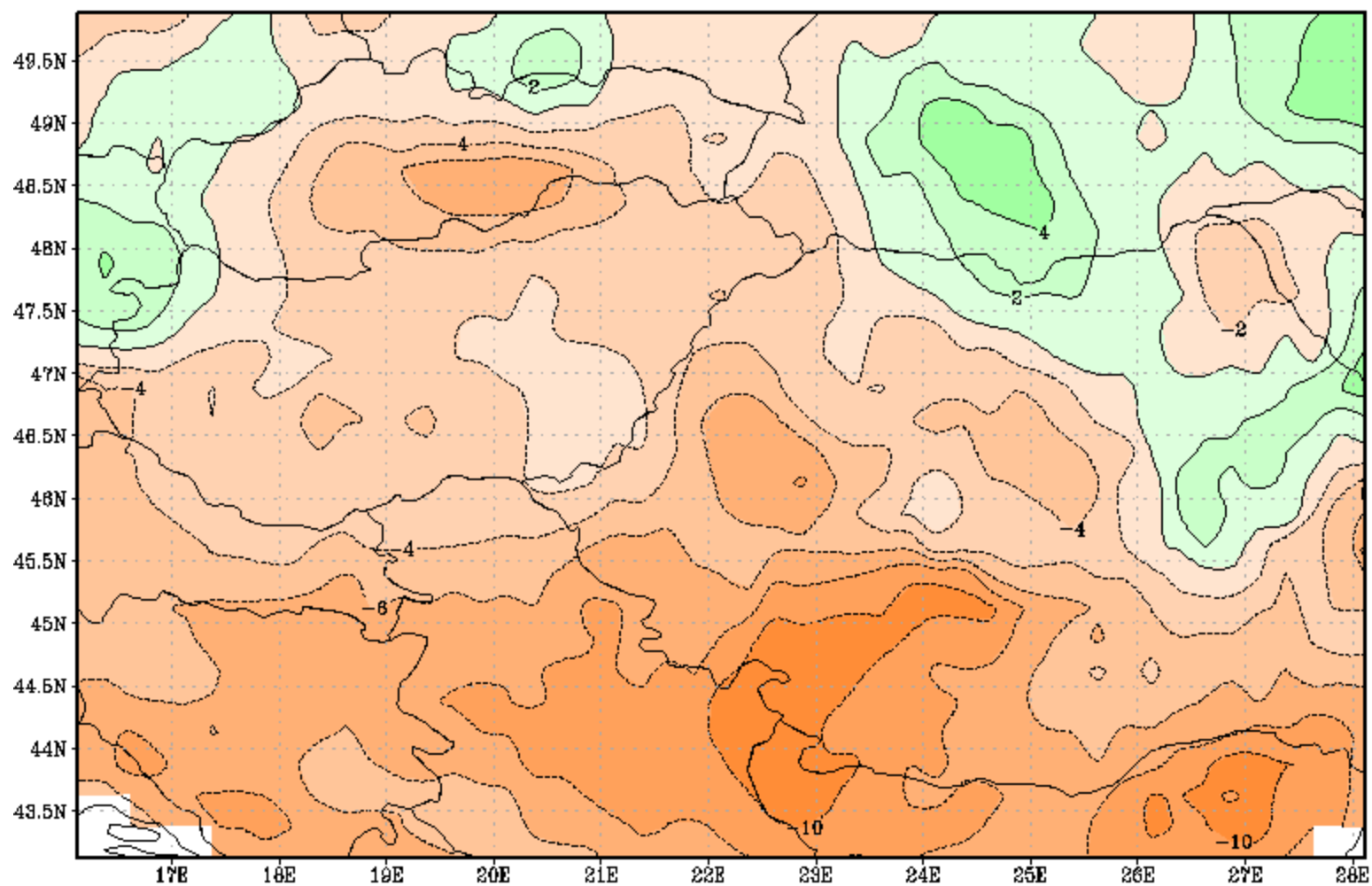
- Aquaprofit, HU
- ARCADIS, BE
- ARTELIA, FR
- National Institute for Research and Development in Environmental Protection, RO (INCDPM),
- National Institute of Hydrology and Water Management, RO (INHGA)
- Potsdam Institute for Climate Research, DE (PIK)

Module SR1

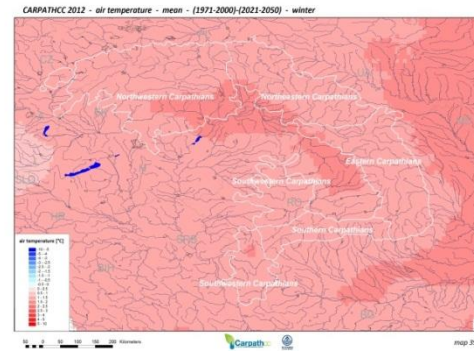
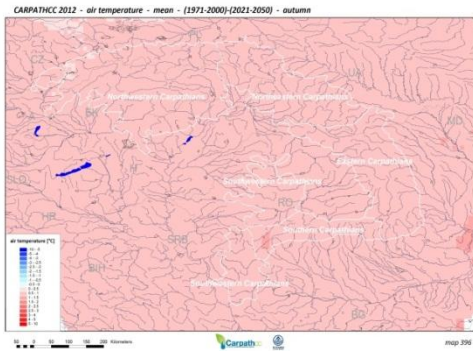
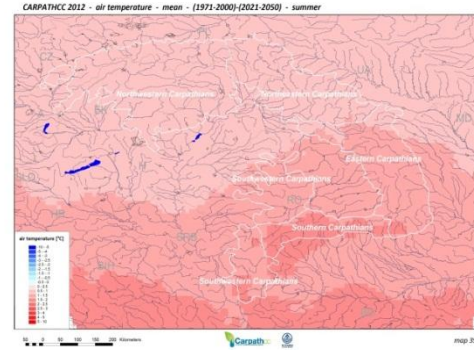
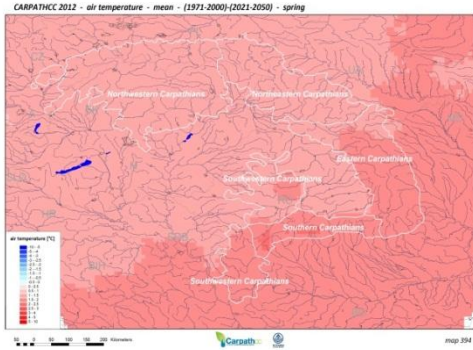
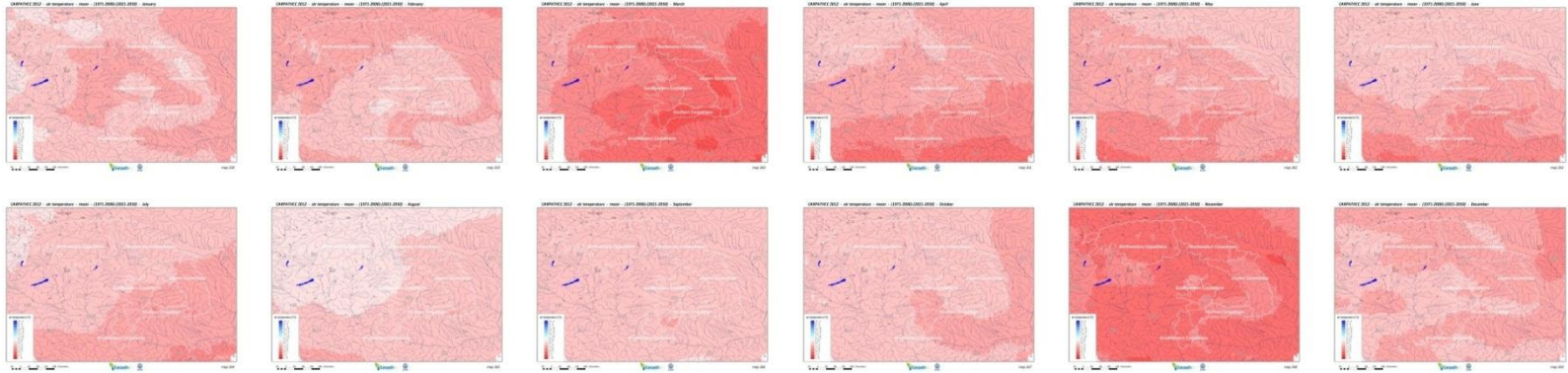
In-depth study on the key climate change threats and impacts on water resources

1. _
2. Pan-Carpathian historical trends and projections
3. Carpathian wide projections of the seasonal and intra-annual changes
4. Trends in and criteria to switch to „climate adjusted” values for WFD
5. Future Landslide and Mudflow Maps for the Carpathian Region
6. Integration on the impact ecosystem threats and production and also on adaptation measures

**Difference of the mean precipitation sum
between the periods of 1961–1990 and 2021–2050 [%]
REMO 5.7 A1B**



Changes in air temperature



Module SR2

In-depth study on the impacts of climate change threats on ecosystem

Task 2: Assessing the risk of climate change-induced increase in virulence of forest pathogens, and change in outbreak ranges and population dynamics of forest pests

Task 3: Assessment of the effect of climate change-induced changes in forest cover on protective functions of montane and subalpine forests

Task 4: Assessment of the combined effect of climate change and forest management practices on vulnerability of Carpathian forests; including adaptation potential of forest management

Task 5: Assessment of climate change impact on changes in species composition of forests, grasslands and wetlands

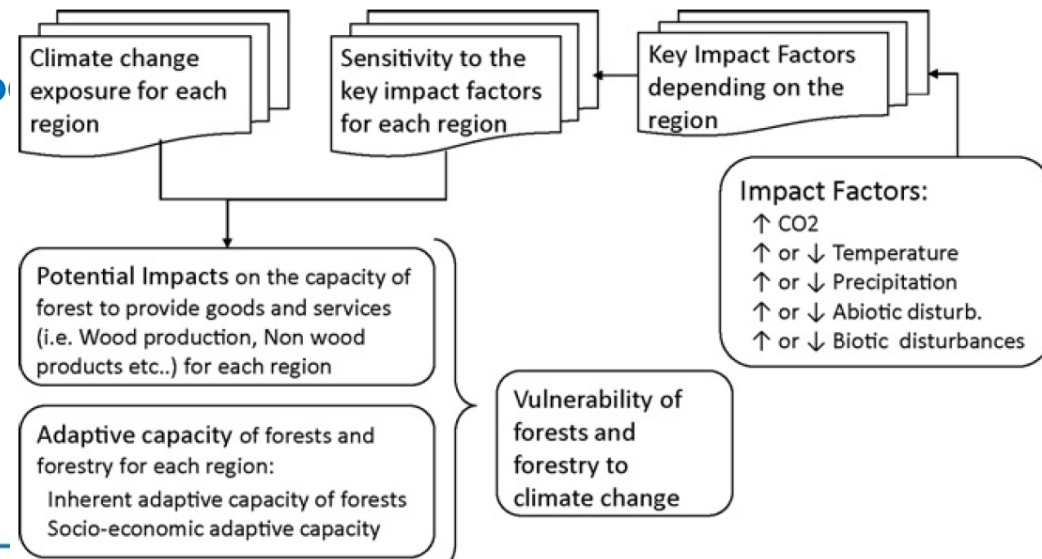
Vulnerability concept used

Exposure – Sensitivity – Adaptive Capacity (according to Lindner et al. 2010)

EXPOSURE – intensity of climate change, projected changes in individual climate elements. For this time decided to consider it constant and take only main tendencies described in scientific literature for the Carpathians. Minor task within the project.

SENSITIVITY – degree to which a system is affected, directly or indirectly

ADAPTIVE CAPACITY – inherent, so
Largely dependent on information
returned from national experts.
National legislation,
system of incentives,
International commitments,
projects, etc.



Module SR3

In-depth study on the impact of climate change on ecosystem-based production systems

Task2: In-depth study on the impact of climate change on multifunctional landscapes and grasslands

Task3: Comprehensive study of the vulnerability of the tourism sector

SUBSTANTIAL ONGOING STEPS

NEXT STEPS:

- **Distribution factsheets to focal areas (SR6)**
- **Analysis of completed factsheets and compilation of information**
- **Identification of gaps, consultation of experts where needed**
- **Selection of grassland types**
Analysis of benefit valuation studies
- **Phase 2 completion of factsheets for selected grassland types to ensure all information is captured for analysis change in ecosystem services due to CC**

Module SR4

In-depth study on adaptation measures

Task2: Ex-post evaluation of adaptation measures from specified projects or funding systems

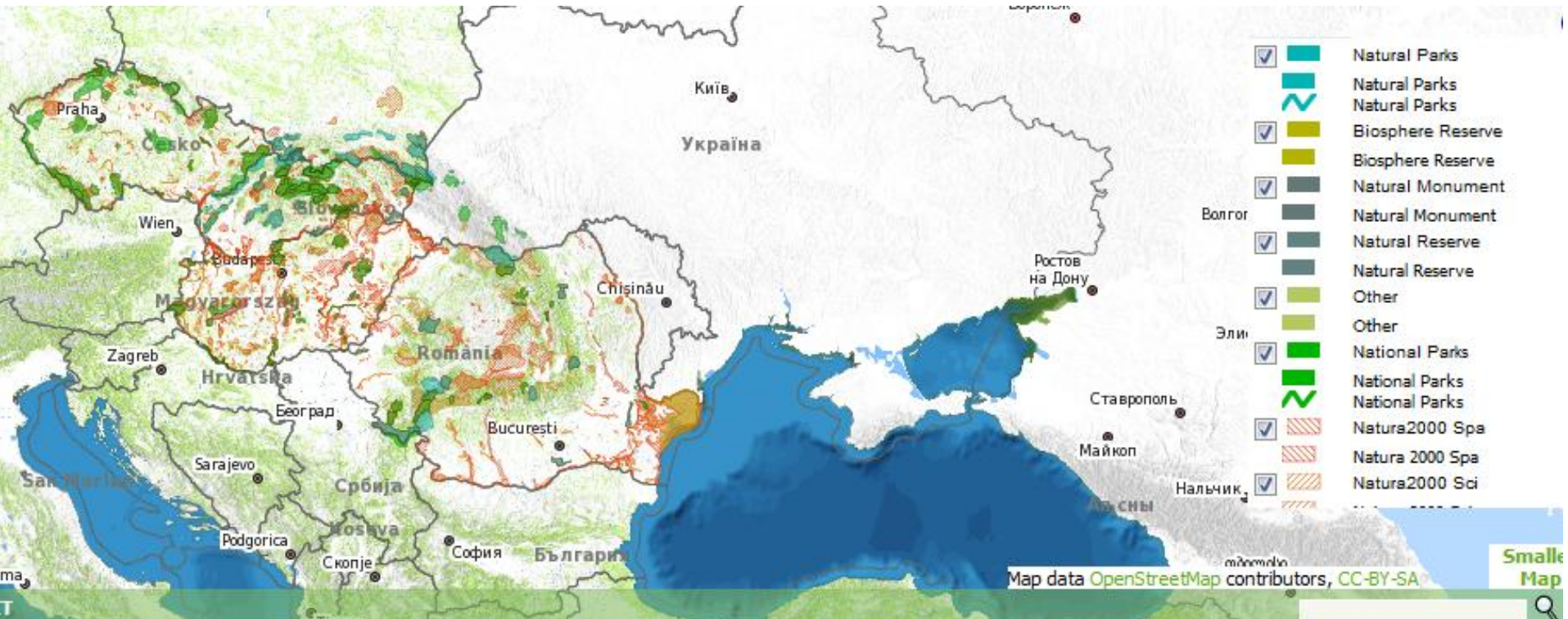
Task3: CBA for forests, wetlands and non-agricultural grasslands

Task4: Climate proofing the ecological network structure in the Carpathian region

Task5: Assessment of the viability for the Carpathian region of adaptation measures developed outside the region

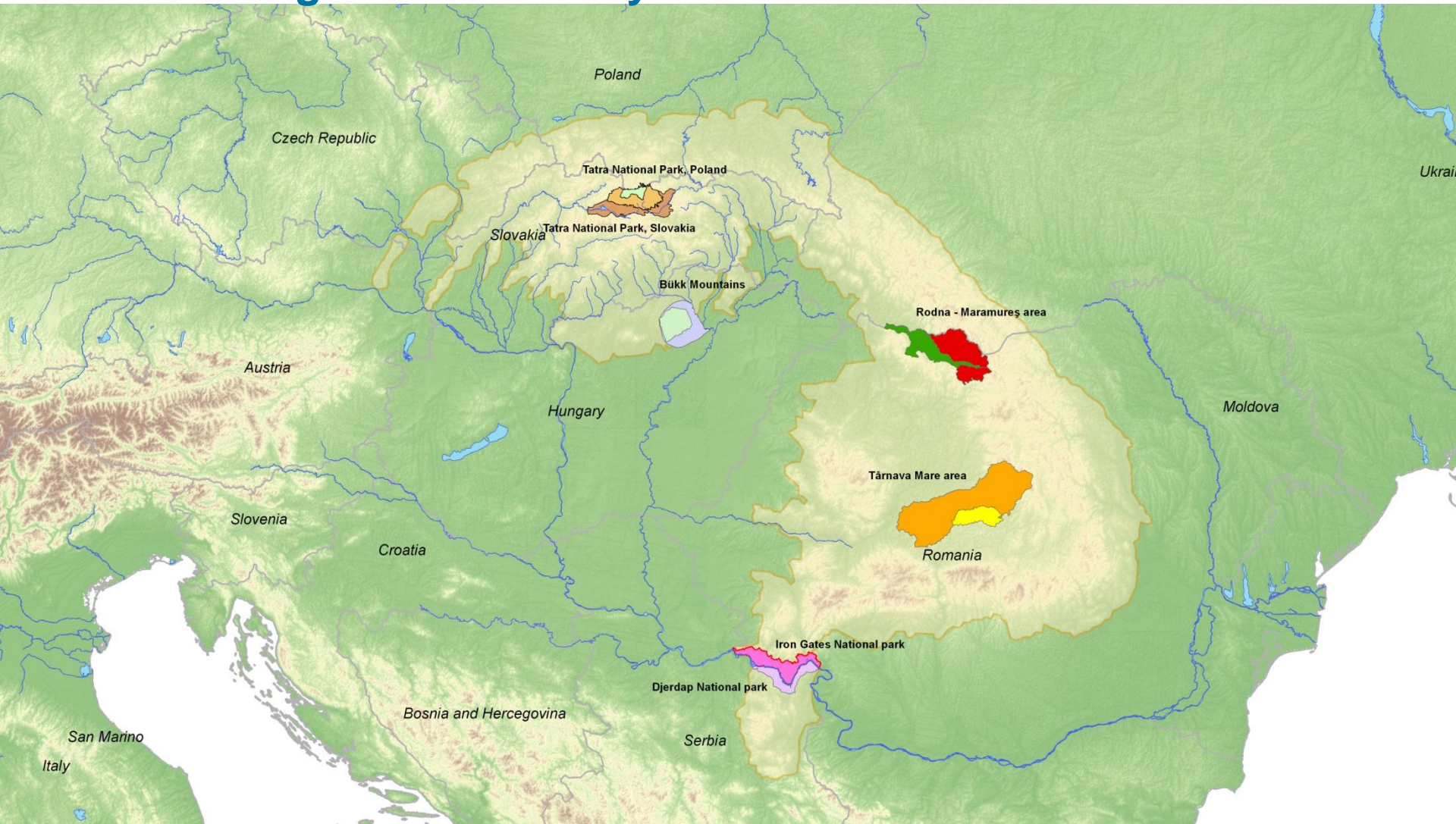
Task6: Assess the opportunities and barriers for mainstreaming adaptation into rural development policy and national implementation of the CAP

CARPATHIAN PROTECTED AREAS



Module SR6

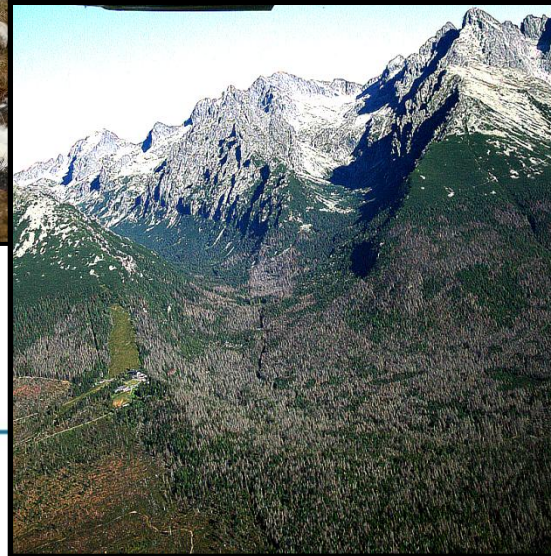
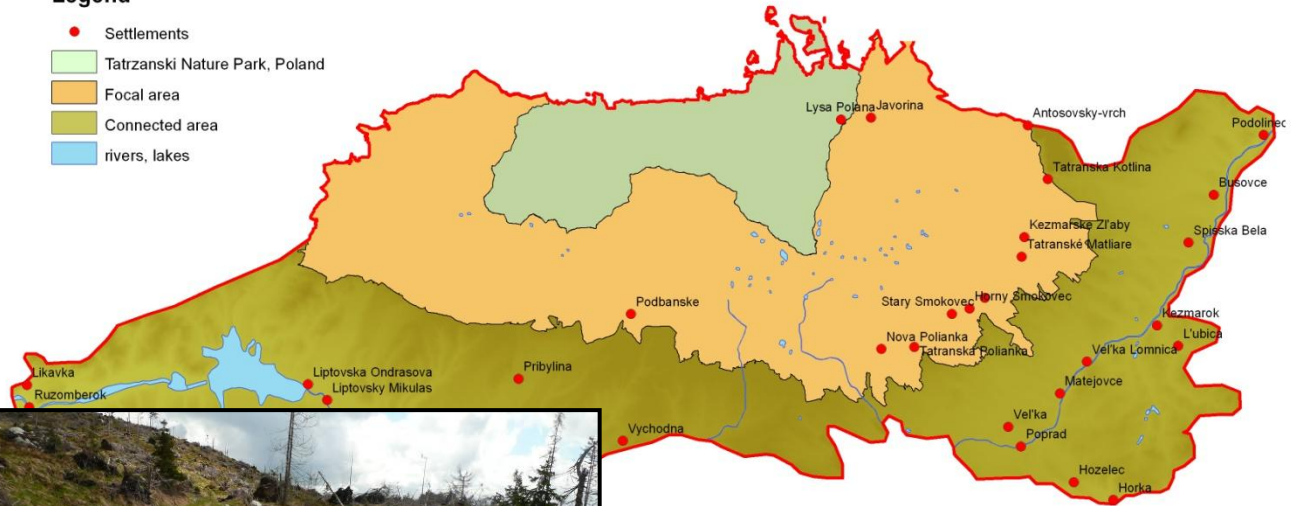
Integral vulnerability assessments in focal areas



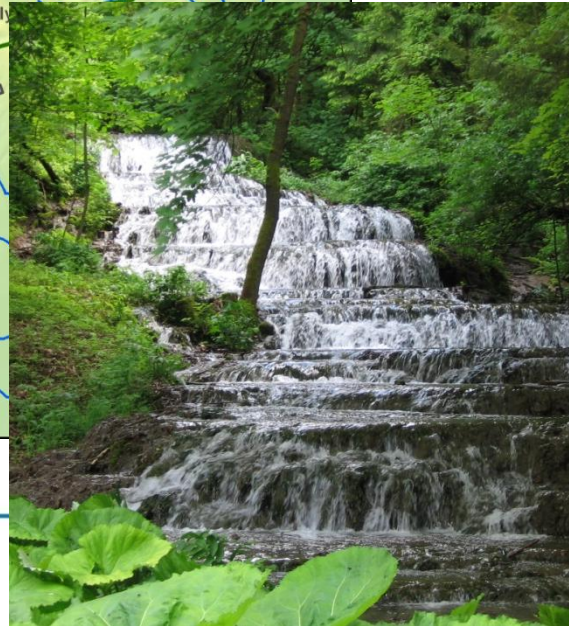
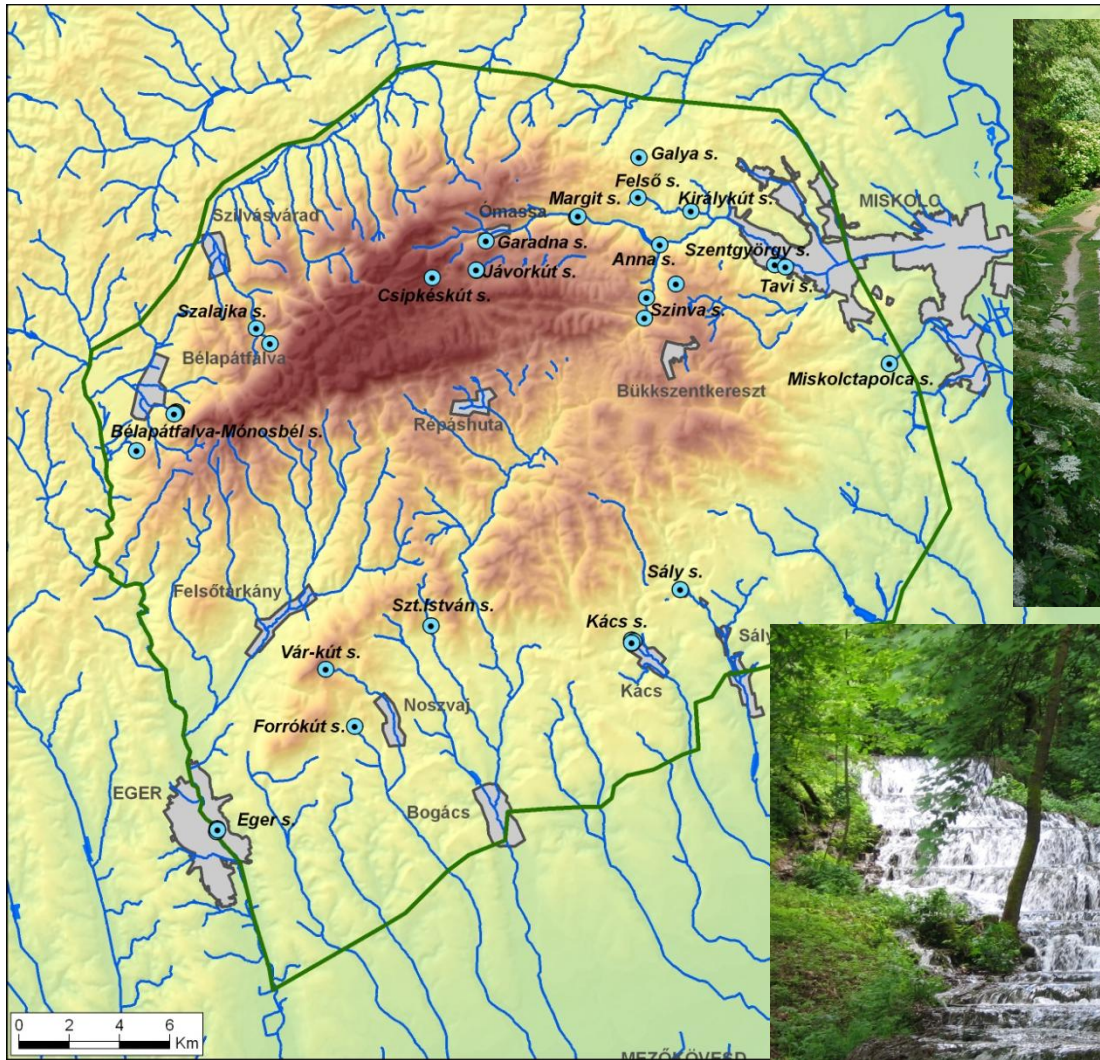
HIGH TATRAS

Legend

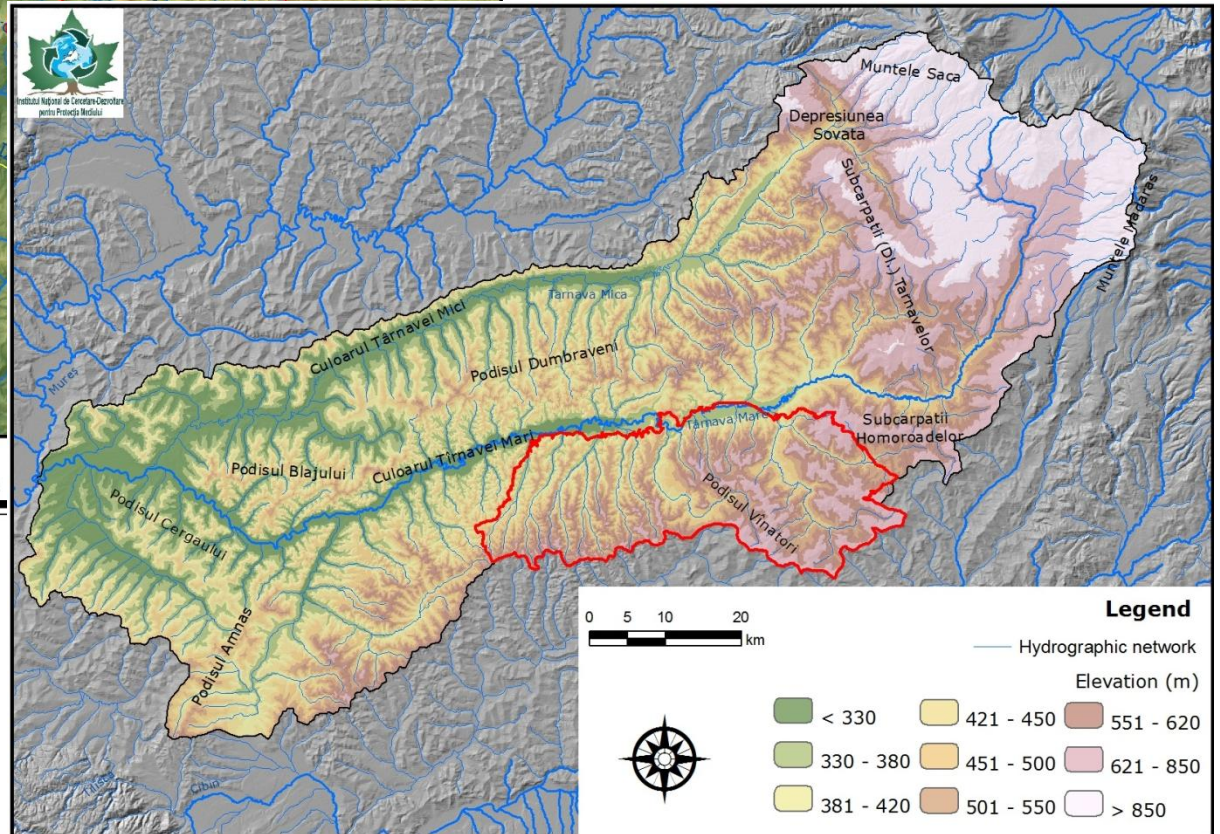
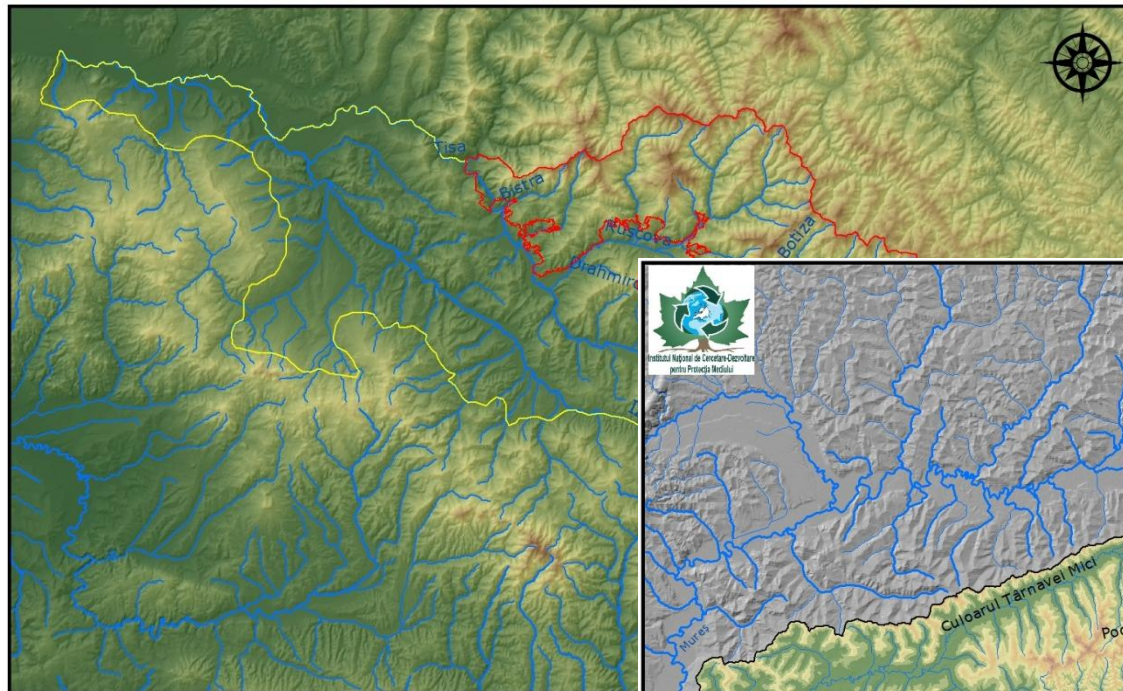
- Settlements
- Tatranski Nature Park, Poland
- Focal area
- Connected area
- rivers, lakes



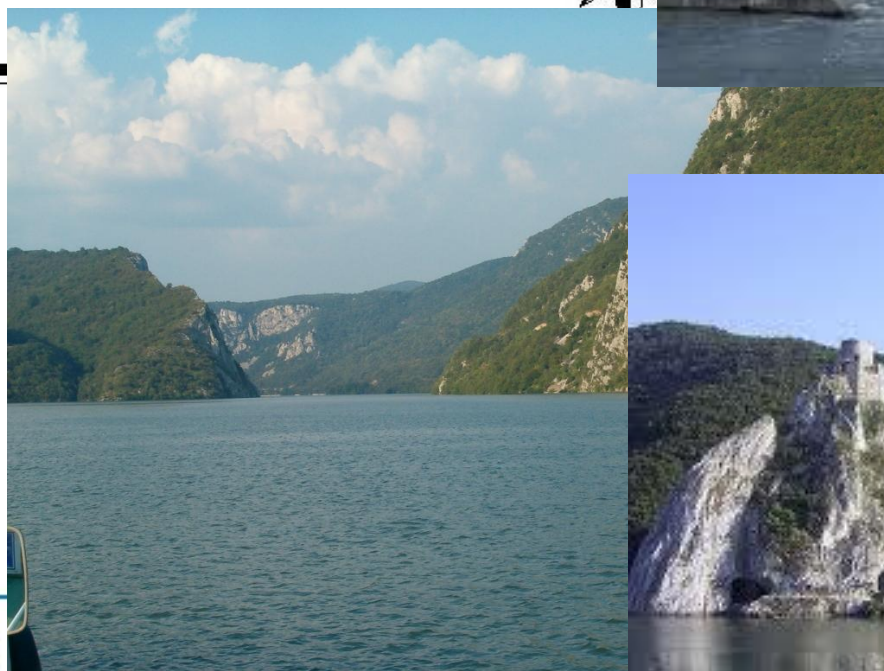
BÜKK



RODNA-MARAMUREȘ and TÂRNAVA MARE



IRON GATE

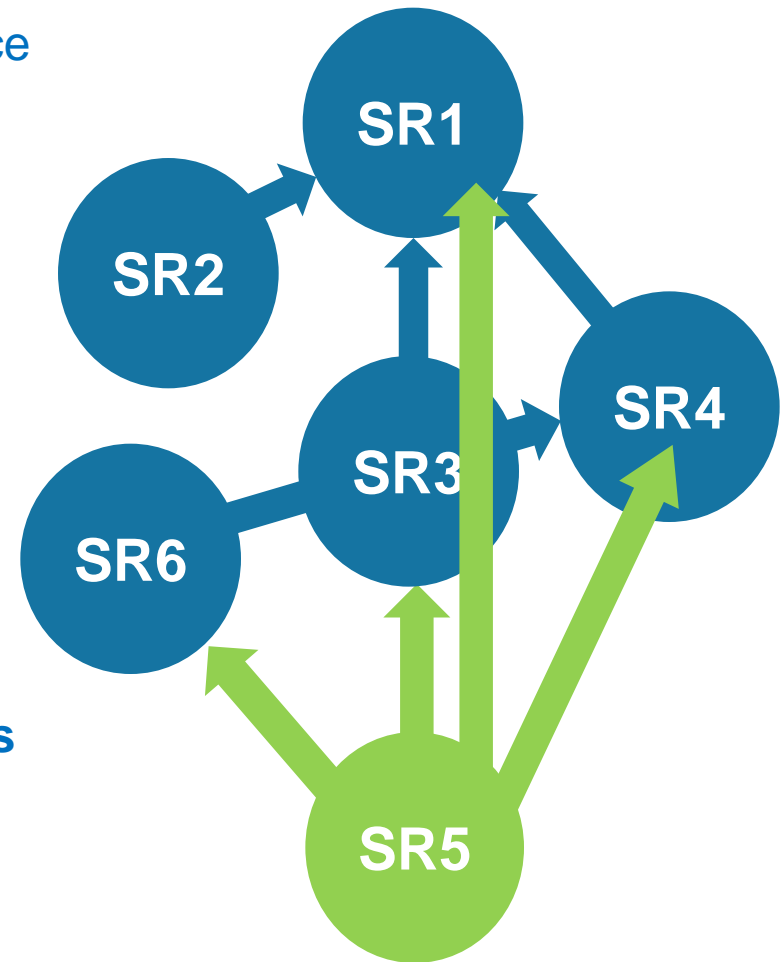


Module SR5 - Supporting stakeholder interactions

To recall successful stakeholder involvement and outreach activities are closely linked, hence SR5 combined stakeholder interaction and communication.

Our aims are:

- **To involve stakeholders successfully** by workshops;
- **To bridge the information gap** between stakeholders and disciplines;
- **Making the project more visible** (by providing additional communication tools (ex.: exhibition, project site etc.)
- **Helping to arrange similar future projects** with well-performed work and by communication tools.



WORKSHOPS

- There will be 1 scientific and 2, 2 days stakeholder workshops held by the following locations and time:
 - **Stara Lesná, Slovakia, May 2012**
 - **Eger, Hungary, January 2012 (Tatra+Bükk)**
 - **Belgrade, Serbia, March 2012 (Rodna+Tarnava_ Iron Gate)**
- 30 participants/workshop including experts and SR leaders
- Workshops are strictly focusing on the Focal Areas
- Plenary & working group sessions mixe



THANK YOU

Eszter Réka Mogyorósy

SR1 Gábor Bálint

SR2 Tomáš Hlasny

SR3 Johann Lammerant

SR4 Sándor Szalai

SR5 Krisztina Rajcsányi-Müller

SR6 István Zsuffa

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