Building the Link Between Flood Risk Management Planning and Climate Change Assessment in the Sava River Basin

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Core group on pilot projects, third meeting

Global Network of basins working on climate change adaptation, first meeting

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United Nations Economic Commission for Europe

Ministry of Infrastructure and the Environment

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Confédération suisse
Confederazione Svizzera
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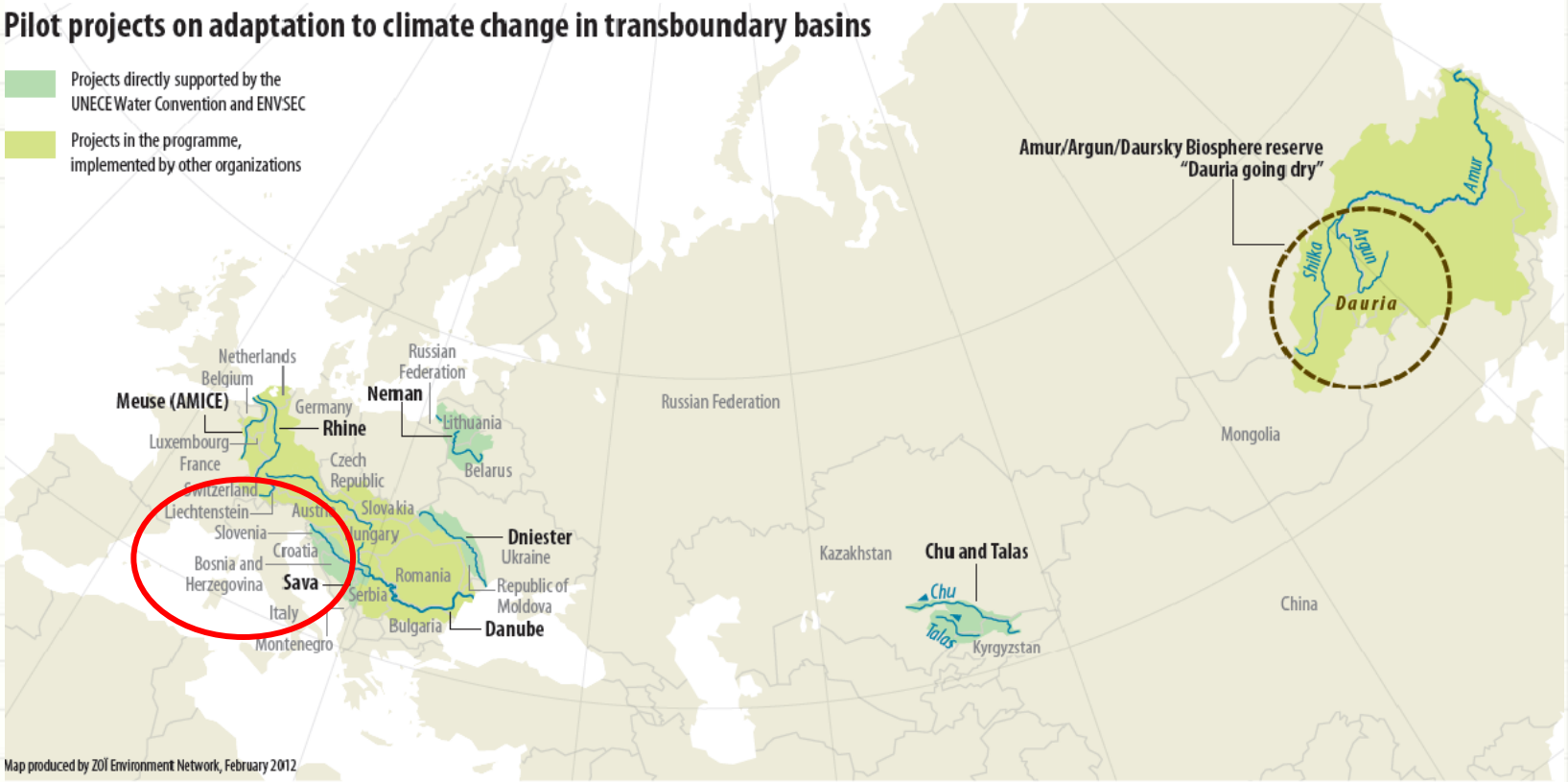
Geographical location



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Geographical location

Short introduction

The most important challenges:

- Creation of a common basis for the Flood Risk Management Plan for the Sava River Basin;
- Transboundary management of floods.

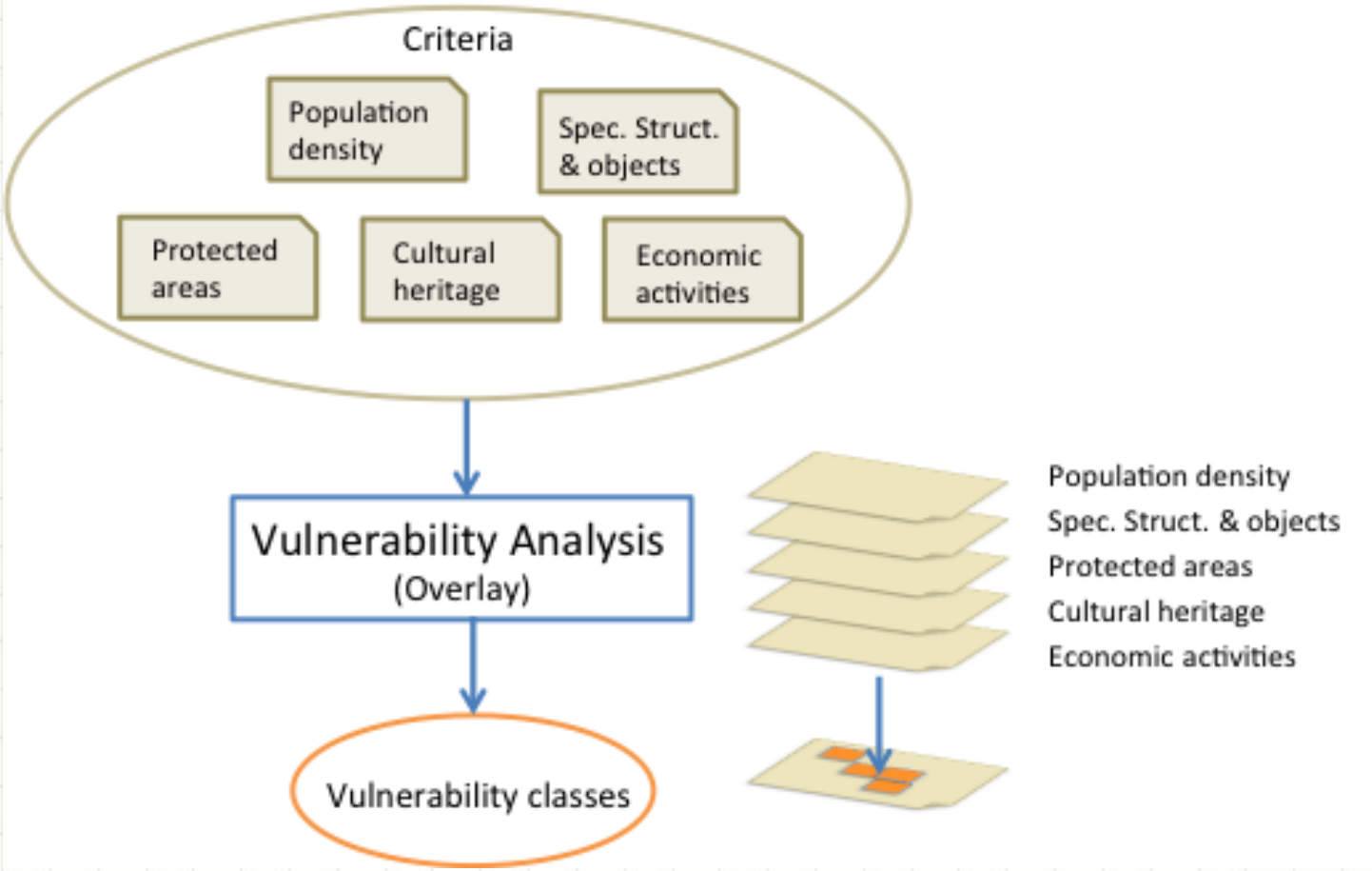
Main aims of the project:

- Initial flood vulnerability assessment in the Sava River Basin and identification of the most vulnerable areas;
- Preparation of a detailed Program for Development of the Flood Risk Management Plan in the Sava River Basin;
- Exchange of experience on the implementation of the project with other projects in the programme of pilot projects under the Water Convention and dissemination of the results.

Concrete results in the past year

1. Preparation of a *Program for Development of the Flood Risk Management Plan for the Sava River Basin*
2. Development of a methodology for the transboundary vulnerability assessment
3. Development of the risk assessment methodology (hazard, vulnerability)
4. Initial assessment of the flood vulnerability in the Sava River Basin

Development of the vulnerability assessment methodology



Development of the vulnerability assessment methodology

Vulnerability classes:

1. High vulnerability,
2. Moderate vulnerability,
3. Low vulnerability.

Spatial grid cells are classified according to each criterion, thus having five attributes: C1, C2, C3, C4, C5. For each cell vulnerability is calculated using the following rule:

Vulnerability Level = Max (C1, C2, C3, C4, C5)

high > moderate > low

Development of the vulnerability assessment methodology

Example: Economic criterion

The criterion is related to economic activities and their importance to economy: national, regional or local. The criterion has a high level of abstraction. Therefore each riparian country has to define particular type of activities through land cover/use categorisation and estimate their importance to the economy. For transboundary areas a special attention should be paid to avoid eventual discrepancy in judgement. The classes are:

1. High vulnerability - areas with importance to the national economy,
2. Moderate vulnerability - areas with importance to the regional economy,
3. Low vulnerability - areas either without any importance or with importance to the local economy.

Development of the vulnerability assessment methodology

Example: Cultural heritage

Cultural heritage includes tangible culture such as buildings, monuments, landscapes, books, works of art, and artefacts, etc. This criterion also comprises the museums and similar facilities that store cultural heritage. The riparian countries shall define importance of their cultural heritage. The classes are:

1. High vulnerability - World heritage (UNESCO) or high national importance,
2. Moderate vulnerability - national or regional importance,
3. Low vulnerability - local importance.

INITIAL FLOOD VULNERABILITY ASSESSMENT IN THE SAVA RB

Example: Population density criterion

Population density: vulnerability classification

Vulnerability classes/level	Classification 1 Population density (number of inhabitants per km2)	Classification 2 Population density (number of inhabitants per km2)
1	1-100	1-100
2	101-500	101-300
3	>500	>300

Population density: vulnerability classification of the affected areas by Q_{100} flood scenario (ha)

POPULATION DENSITY (C1)	no vulnerability	1 – low vulnerability	2 – moderate vulnerability	3 – high vulnerability	Σ (Q_{100} area)
Classification 1 (500) Affected area by Q100 flood scenario (ha)	0	804.907	104.638	30.074	939.619
Classification 2 (300) Affected area by Q100 flood scenario (ha)	0	804.907	91.432	43.280	939.619

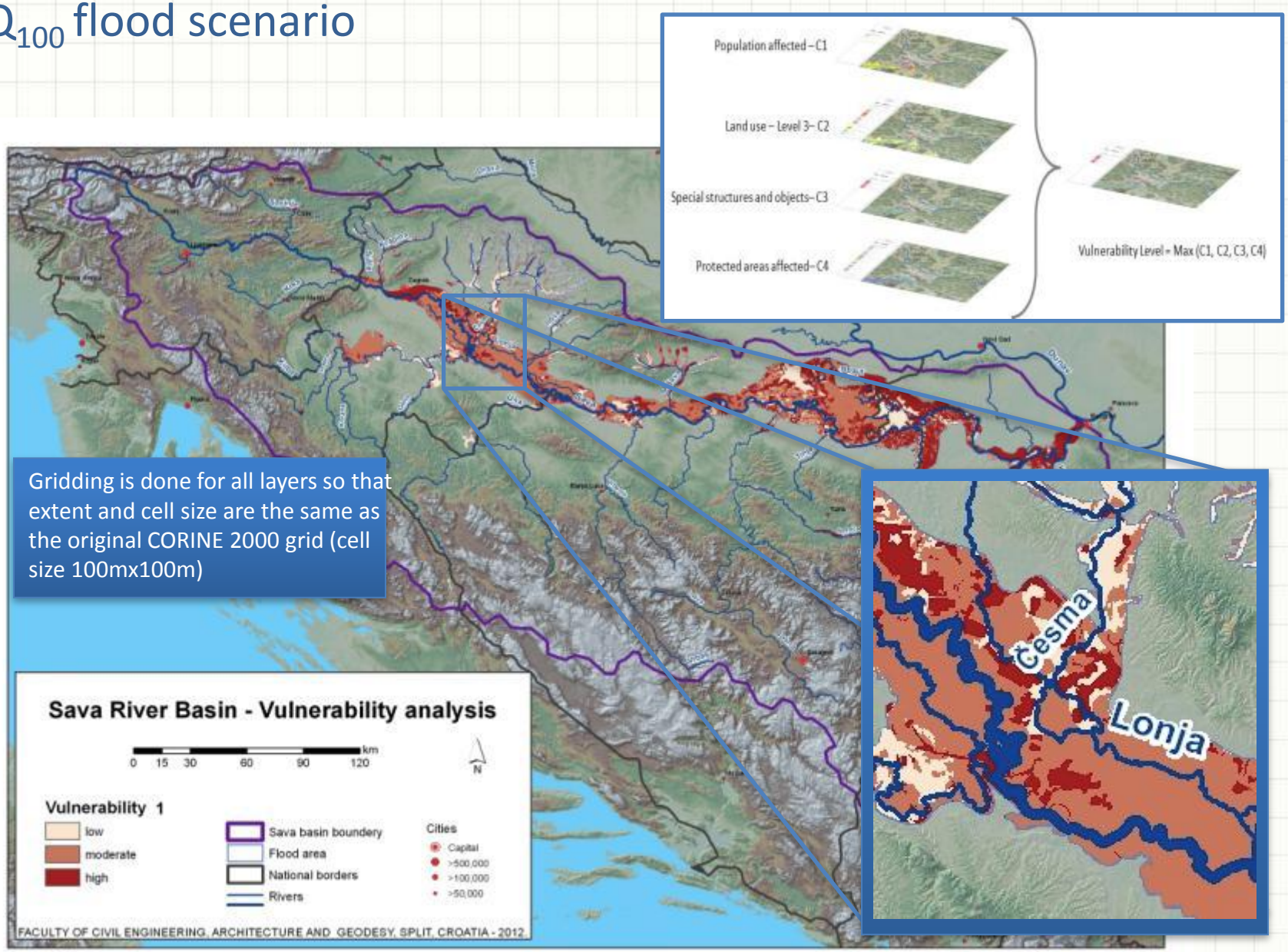
INITIAL FLOOD VULNERABILITY ASSESSMENT IN THE SAVA RB

Final vulnerability classification 1 and 2 (population density classification 1 and 2) of the affected areas by Q_{100} flood scenario (ha)

FINAL VULNERABILITY CLASSIFICATION Affected area by Q100 flood scenario (ha)	1 – low vulnerability	2 – moderate vulnerability	3 – high vulnerability	Σ (Q_{100} area)
Final vulnerability classification 1 (population density 1, 500)	214.356	447.264	277.999	939.619
Final vulnerability classification 2 (population density 2, 300)	214.356	439.852	285.411	939.619

INITIAL FLOOD VULNERABILITY ASSESSMENT IN THE SAVA RB

Q_{100} flood scenario



TRANSBOUNDARY COOPERATION

The most important challenges:

Different levels of adjustments to the EU legislative.

- Using flexible deadlines, leaving the Parties to flexibly adapt to the changes.

Different methodological approaches, as well as lack of methodological approaches for certain issues.

- To find a compromise methodology which minimises requirements and maximises an effect.

Outcomes of the project

Preparation of the *Program for Development of Flood Risk Management Plan for The Sava River Basin*, with a particular regard to:

- Risk assessment methodology
- Vulnerability assessment methodology
- Harmonisation of the activities in the transboundary areas

Lessons Learnt

- Methodological flexibility for transboundary areas taking into account countries' particularities.
- To find minimal requirements that could give feasible solutions thus minimise both costs and effort.
- A special attention should be paid for transboundary areas to avoid eventual discrepancy in judgements while defining vulnerability criteria classes. Even though the assessment has been done as an initial appraisal of the situation in the Sava River Basin, a problem has been recognised and a mandatory joint assessment for transboundary areas should be recommended.

FUTURE PLANS

- Final consultations with the Permanent Expert Group on Flood Protection of the International Sava River Basin Commission (PEG FP) on the *Program for Development of FRM Plan for the Sava RB* as the expert body*;*
- Estimation of the vulnerability to floods due to the possible climate change in the future
- Report on the assessment of data, information needs and strategy for obtaining missing data for the FRM Plan for the Sava RB;

FUTURE PLANS

- Preliminary identification and selection of possible adaptation measures to the impact of climate change to the flood vulnerability
- Discussion of the suggested adaptation measures with a wide range of stakeholders at the 3rd (final) Consultation workshop

Question to the other pilot projects?

Since vulnerability assessemnet on transboundray areas should be harmonised, how do your proposed methodologies avoid bias judgements by countries?