

# BORIS

Cross **B**Order **R**ISK assessment for increased prevention and preparedness in Europe

Newsletter #1, December 2021

Welcome to the first BORIS newsletter! In this newsletter, we want to inform you about the BORIS project, its progress over the past year, and future activities.

## About the project

Funded by the Directorate-General for Civil Protection and European Humanitarian Aid Operations (DG ECHO), BORIS will develop a shared methodology for cross-border seismic and flood risk management.

The project area, the Eastern Alps, including the Italian – Slovenian-Austrian borders, as well as the region of South-Eastern Europe – is in fact characterized by strong seismicity and hydro-meteorological risks. To establish coordinated transboundary approaches able to assess and communicate those risks, BORIS will firstly do an overview of the existing methodologies for flood and seismic risk assessment in the countries involved (Italy, Slovenia, Austria, Turkey and Montenegro).

Based on such analysis, a shared methodology for single and multi-risk assessment will be developed to assess the expected impacts for single natural hazards and to do a comparison with multi-risk impacts in those transboundary regions. The strategy will be tested in some pilot sites. The project also aims to develop a platform for single and multi-risk assessment which will facilitate the visualization, storage, updating of data, models, documentation and the representation of damage and impact data following a common metrics approach.



## Project partners

CI3R

AFAD

DCNA<sup>Austria</sup>  
Disaster Competence Network Austria

UCG

Univerzitet Crne Gore



University of Ljubljana

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## Timeline so far

- 01.01.2021 – official project launch
- 25.01.2021 – project kick-off meeting
- 25.06.2021 – BORIS leaflet published
- 31.08.2021 – submission of D2.1  
Comparison of National Risk Assessment

## Project updates

After a successful kick-off in January 2021, work commenced. One of the first deliverables were the website and the social media channel on LinkedIn to keep the public informed and updated about the project progress.

[Check out our website here >](#)

[Follow us on LinkedIn >](#)

In June, the first BORIS leaflet was published to give a quick overview of the project.

[Download the leaflet here >](#)

In August, we submitted the Comparison of national risk assessment (D2.1) as the first of the two deliverables of the BORIS WP2 "Analysis of the context and need assessment". Each project beneficiary presented the national seismic and flood risk assessment that was discussed in several meetings. As a consequence of project activities, the national risk assessment (NRA) from Slovenia, Italy, Austria, Turkey, and Montenegro is summarised in this report. Each section addressing the NRA comprises four subsections describing the analysed risks, seismic risk assessment, flood risk assessment, and multi-risk assessment.

[Download the report here >](#)

Screenshot of the June 2021 BORIS project partner meeting



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## Timeline so far

16.09.2021 - synergy meeting with colleagues from the Trans-Alp project

17.11.2021 - presentation of BORIS at DRMKC 5th Annual Seminar

23.12.2021 - first BORIS newsletter published

## Project updates

On September 16th, we met with our dear colleagues from the Trans-Alp Project to share insights, find synergies, and increase the cooperation – not just beyond country borders but also across different EU-funded projects. Because disasters don't stop at borders and together, we can work towards a safer Europe.

[Visit the Trans-Alp website >](#)

On November 17th, the BORIS project was presented at DRMKC 5th Annual Seminar as a highlight of cross-border collaboration.

We discussed the overall project status with the BORIS team on November 9th, 2021 the final full project team meeting for 2021.

Project Motivation

**Severe Storms** (e.g., VAIA) will be addressed as representative examples of **complex hazards with cascaded and compounded components** (e.g., snow, wind gusts, hail, lightnings, floods, landslides).

There is a current lack of **harmonised, transboundary risk assessments oriented to impact forecasting and prevention** for such type of events in the Alpine regions.

The project will be implemented by a **consortium of environmental, meteo-hydrological and earth observations institutes from Austria and Italy, including an Italian SME.**

The project will be supported by a group of **Interested Stakeholders from areas of Civil Protection, Land Management, Research and other key sectors, from Italy, Austria and Slovenia.**

Co-funded by the European Union

TRANS-ALP Kick off meeting, February 2, 2020

Trans-Alp synergy meeting

DCNA Austria  
Disaster Competence Network Austria

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- ...development of a shared methodology for single and multi-risk assessment
  - evaluation of expected consequences
  - multi-risk impact comparison and ranking in transboundary regions
- ...development of a platform for single/multi-risk assessment and representation
  - facilitate the storage and updating of data, models and documentation
  - representation of damage and impact results
  - visualization of shared transboundary risk assessment

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DISASTER COMPETENCE NETWORK AUSTRIA

BORIS at DRMKC  
5th Annual Seminar

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## Next Steps

Work package 2

Work package 3

Work package 4

Work package 5

## WP2

The results of WP2 are elaborated in D2.1 Comparison of National Risk Assessments and D2.2 Data availability and needs for large scale and cross-border risk assessment, obstacles and solutions. Here is a brief overview of the findings:

It was realised that the flood risk assessment in all five countries is in compliance with the EU Floods Directive, but countries have selected flood scenarios differently. The flood NRAs of the five countries are mainly based on deterministic scenario-based risk assessment. However, the national seismic risk assessment is more diverse. In Austria, it is based on hazard maps. Turkey, Slovenia and Montenegro are assessing seismic risk based on selected seismic scenarios. In Italy, the seismic risk was evaluated by a time-based risk assessment approach, which was also implemented in Slovenia with the support of the Ministry of Environment and Spatial Planning. Most probably, the time-based risk assessment is the only valid option for unbiased multi-risk assessment in the future. However, efforts are needed to harmonise also the sources of information and databases used for NRA.

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## WP3

The first version of the Web GIS platform for cross-border risk assessment has been developed and test data has been successfully uploaded. As basis for this Deliverable D3.1, a report on the architecture of the Platform will be finalised until the end of this year and send to the partners of the Transalp Project to foster the exchange of knowledge and find synergies.

Within Task 3.1 potential end-users for the BORIS Platform were identified on different levels (national, regional, local) within all five countries. Meetings with 19 experts in the field of flood and earthquake hazards and from national and local civil protection units were organised and documented to ensure the development of functionalities and tools that meet the user requirements as well as the project objectives.



Screenshot of one of the user interviews

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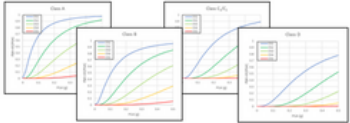
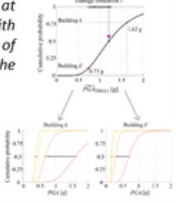
## WP4

Several meetings of groups dealing with earthquake and flood risks were organized to ensure harmonized cross-border assessment. For seismic risk it was agreed that the ESHM13 will be employed for hazard, harmonized datasets will be organized to describe typological based building inventory while a heuristic methodology is being adopted to develop transboundary vulnerability model that accounts for differences of the models adopted in confining countries.


Comparison of different Vulnerability Models in confining countries

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### Vulnerability modelling harmonization

ITALY	SLOVENIA
<ul style="list-style-type: none"><li>➤ <b>Damage scale EMS98</b> (5+1 damage levels)</li><li>➤ <b>Vulnerability models defined for 5 Building Classes</b> according to EMS approach (3 for M and 2 for RC)</li><li>➤ <b>Lognormal fragility curves</b> defined for each vulnerability class</li><li>➤ <b>Exposure model</b> establish rules for assigning building typologies to vulnerability classes</li></ul> 	<ul style="list-style-type: none"><li>➤ <b>Damage scale HAZUS</b> (4+1 damage levels)</li><li>➤ <b>Vulnerability models defined for 20 Building Typologies</b> (6 for M, 8 for RC and 6 for other)</li><li>➤ <b>Lognormal fragility curves</b> defined for each typology</li></ul> <p><i>fragility functions simulated at the building level with consideration of the effects of uncertainty of fragility at the level of the building class</i></p> 

GA n° 101004882 - BORIS - UCPM-2020-PP-AG - Project co-funded by the European Union Civil Protection



For flood risk a methodology to harmonize transboundary flood risk maps is proposed that needs as input the flood maps from EU flood directive developed by each country, high resolution DTM and building footprint; the same vulnerability and consequence functions will be adopted cross-border to estimate expected impact.

For multi-risk, common impact metric is being chosen to allow comparison and ranking of the risks in the same area.

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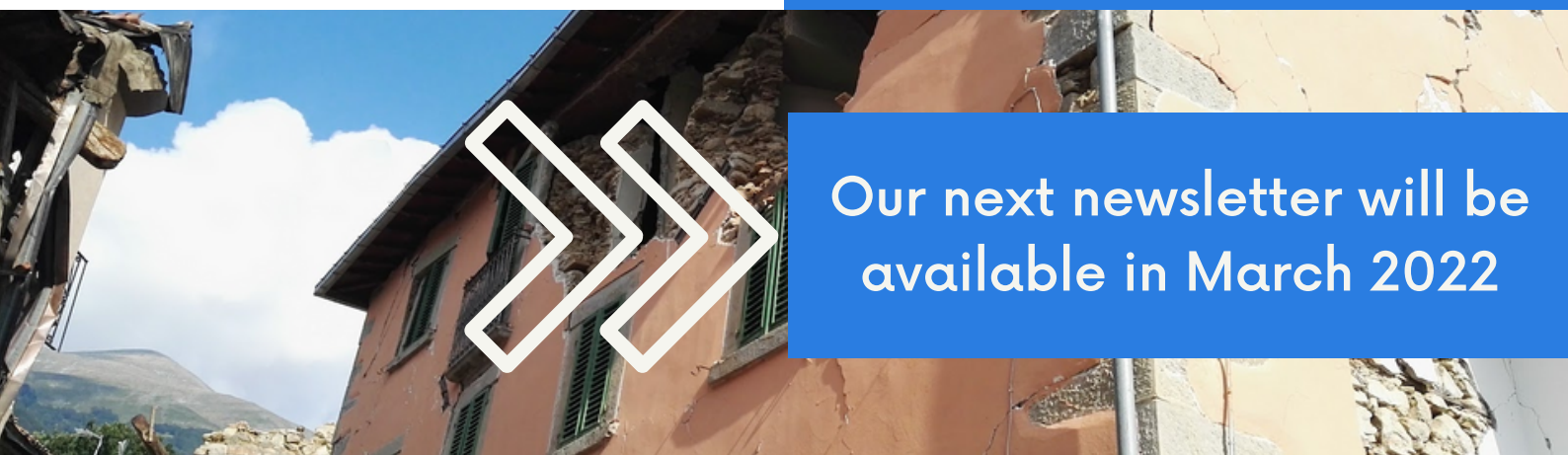
Work package 4

Work package 5

## WP5

The pilot sites in cross-border regions have been defined and some regional stakeholders have already been informed about the BORIS Project.

In the begin of 2022 we will have a WP5 Kick off meeting to further discuss on the “Pilot application of methodology and tool for multi-risk assessment at Italy-Slovenia border and at Austria-Slovenian-border” to test and apply the multi-risk framework (developed in WP4) and platform (developed in WP3) for comparing and ranking different risks potentially affecting the same area.



Our next newsletter will be available in March 2022



BORIS is a project funded by Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO).

## Learn more about BORIS

 [borisproject.eu](http://borisproject.eu)

 [linkedin.com/showcase/borisprojecteu](https://www.linkedin.com/showcase/borisprojecteu)