



**Interreg**  
CENTRAL EUROPE



European Union  
European Regional  
Development Fund

**ProteCHt2save**

RISK ASSESSMENT AND SUSTAINABLE PROTECTION OF  
CULTURAL HERITAGE IN CHANGING ENVIRONMENT  
(HODNOCENÍ RIZIKA A UDRŽITELNÁ OCHRANA KULTURNÍHO  
DĚDICTVÍ V MĚNÍCÍM SE PROSTŘEDÍ)

**NEWSLETTER #2**

**ÚNOR 2018 - SRPEN 2018**

Disasters and catastrophes pose risks not only to the conservation of the cultural heritage assets with its cultural, historic and artistic values, but also to the safety of visitors, staff and local communities. Additionally, they cause undoubtedly negative consequences for the



local economies due to the loss of tourism revenues, and for the livelihoods of local people who are dependent on it. ProteCHt2save contributes to the improvement of capacities of the public and private sectors to mitigate the impacts of climate change and natural hazards on cultural heritage sites, structures and artefacts. The project focuses primarily on the development of feasible and tailored solutions for building resilience of cultural heritage to floods and events of heavy rain.

## ***WHAT HAD HAPPENED IN THE LAST FEW MONTHS?***

ProteCHt2save project has been selected by the European Commission to be presented in an e-book on Interreg projects for the European Year of Cultural Heritage. The aim of the European Year of Cultural Heritage is to encourage more people to discover and engage with Europe's cultural heritage, and to reinforce a sense of belonging to a common European space.

### ***Plan vs. implementation***

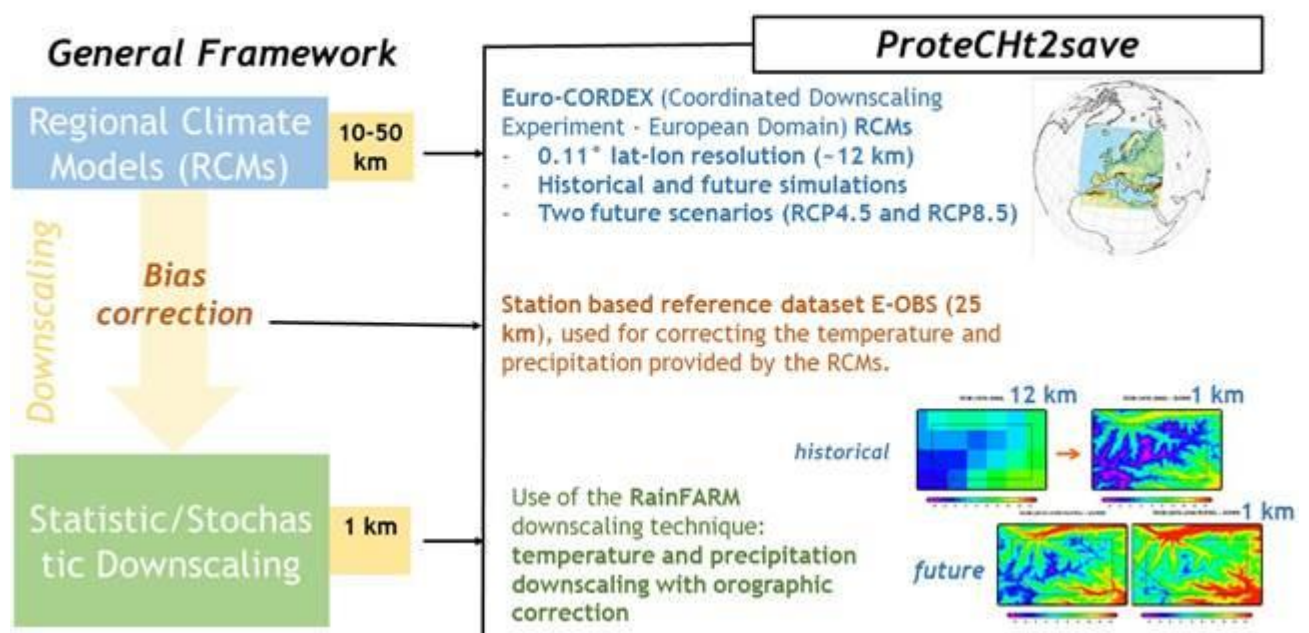
Assessment of risk prone areas to extreme events

The analysis of existing state-of-the-art approaches, methods and models to identify risk areas was performed by CNR-ISAC and focuses on the analysis of procedures, tools and database to identify the most important hot-spots where different categories of cultural heritage are exposed to individual extreme events due to climate change (heavy rain, flood, fire due to drought). The obtained results will be fundamental for the “Development of map creator on line tool” and “Elaboration of maps with hot-spots of extreme potential impacts on cultural heritage”. The maps will substantially contribute to the elaboration of plans for cultural heritage protection in emergency situations (WPT3) and the subsequent testing and implementation on site (WPT4).

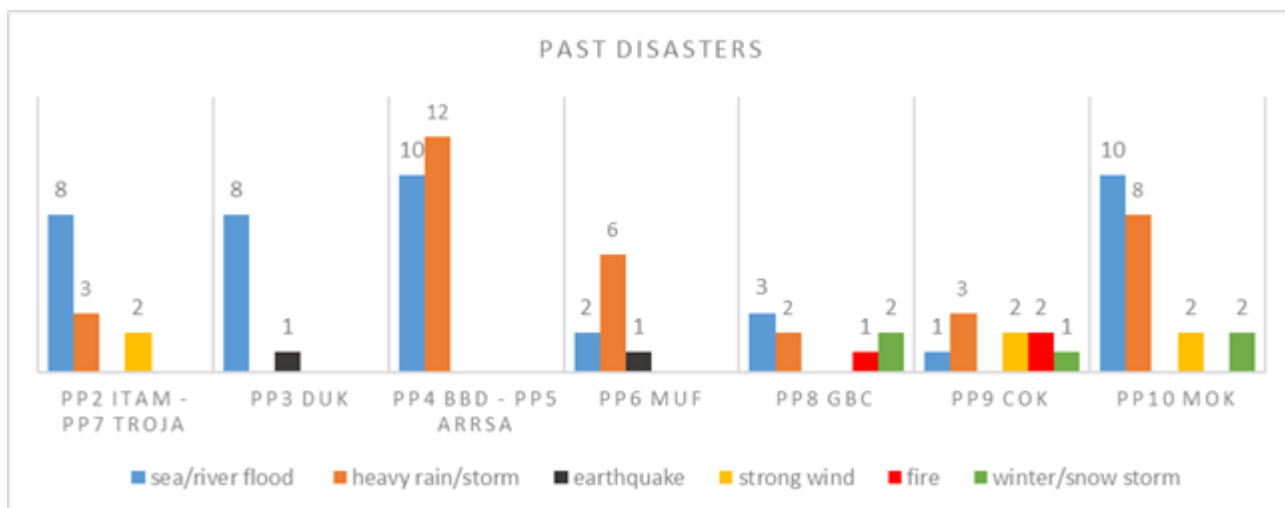
First of all an inventory of existing tools for risk evaluation aims at highlighting the suitable and pertinent tools for the risk prone areas assessment in Central Europe to extreme events was been collected. Moreover, results from previous funded projects on climate change and hazards impact on cultural heritage were also gathered.

In parallel the climate models, downscaling approaches and tools of data analysis for the assessment of risk prone areas to extreme events, were specifically selected for ProteCHt2save by ISAC and summarized in figure below. Climate related variables and correlated indexes, particularly Temperature and Precipitation, will be extracted from regional climate models (Euro-CORDEX simulations - of Regional Climate Models (RCMs)) with ~12 km resolution. Subsequently maps at local levels of risk prone areas for cultural heritage exposed to flood, heavy rains and fire due to drought periods for two scenarios (RCP4.5 - stabilization scenario and RCP8.5 - high pathway scenario) and periods (2021-2050 and 2071-2100).

## Climate models and downscaling

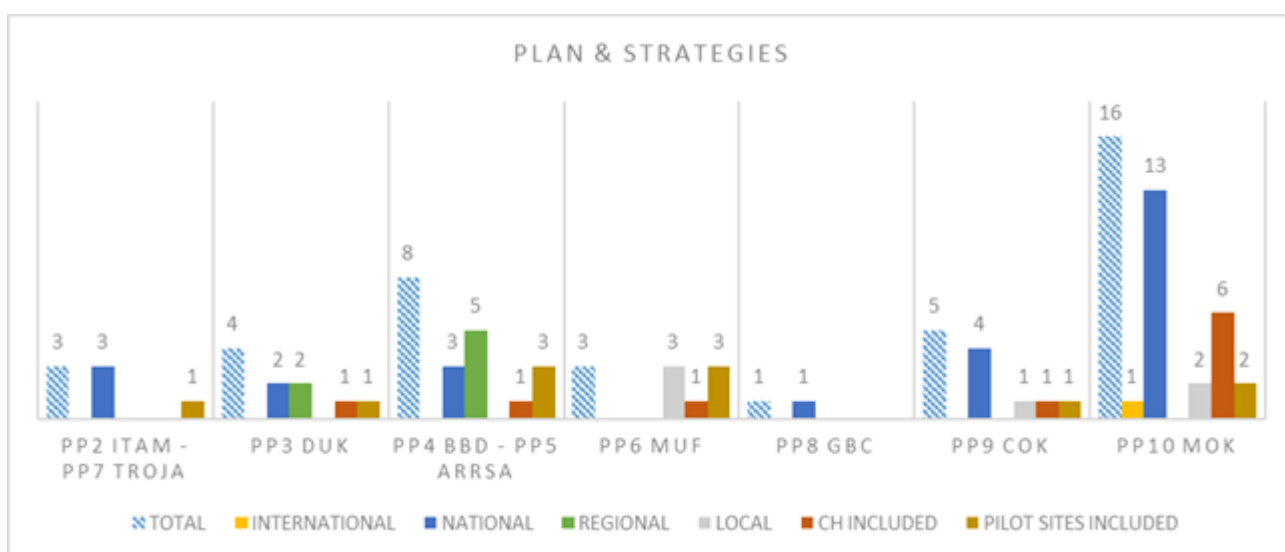


The analysis of the past disasters occurred in different territorial levels (local/regional/national/international), provided by each partner for their Country/Region involved in ProteCHt2save was also performed by ISAC with the aim of identifying strengths and weakness in the risk management process with focus on cultural heritage safeguarding. The analysis shows the typology of past disasters documented since 1900 by the consortium in the areas under study and the exiting plans and strategies adopted. The analysis displays that in spite of the fact that past disasters with impact on built heritage have been recorded for all the regions investigated with exception of Krems (Austria), plan and strategies including cultural heritage protection represents in the most positive case the 30% of the total existing plans (Kocevje).



Typology of past disasters documented by the ProteCHt2save consortium in the areas under study

(Czech Republic: PP2 Prague and PP7 Troja; Austria: PP3 KREMS; Poland: PP4 Bielsko-Biala; Italy: PP6 Ferrara; Hungary: PP8 Pécs; Croatia: PP9 Kastela; Slovenia: PP10 Kocevje).



Existing Plans and Strategies in the ProteCHt2save areas.

## Identification of the critical elements in the resilience and risk management of cultural heritage

The decision support tool developed within the project defines criticalities substantially influencing the resilience and risk management of cultural heritage. The first stage of site inspections took place from June 26 till July 5 in Pécs (Hungary), Kaštela (Croatia), Kočevje (Slovenia) and Ferrara (Italy) with the aim of identifying controllable criticalities endangering heritage assets. The effort was perfectly prepared by the relevant project partners. The inspection of 26 objects



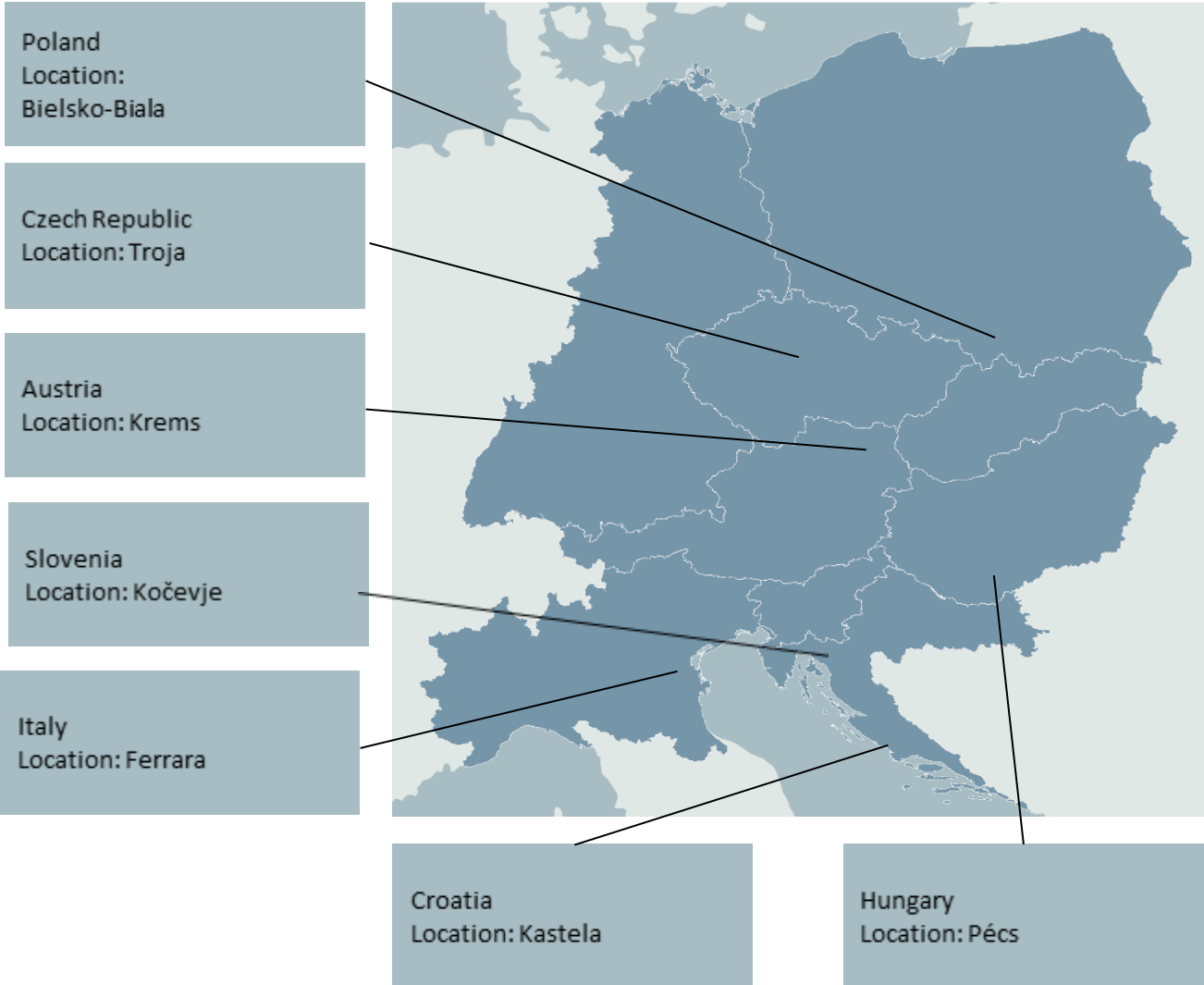
and urban areas revealed possibilities for prevention or mitigation of damage to cultural heritage during emergency events. The results will be exploited for the final report on controllable resilience criticalities of cultural heritage suitable for innovative mitigation.



Frescoes in cella trichora – a space without humidity control.

### Emergency plan

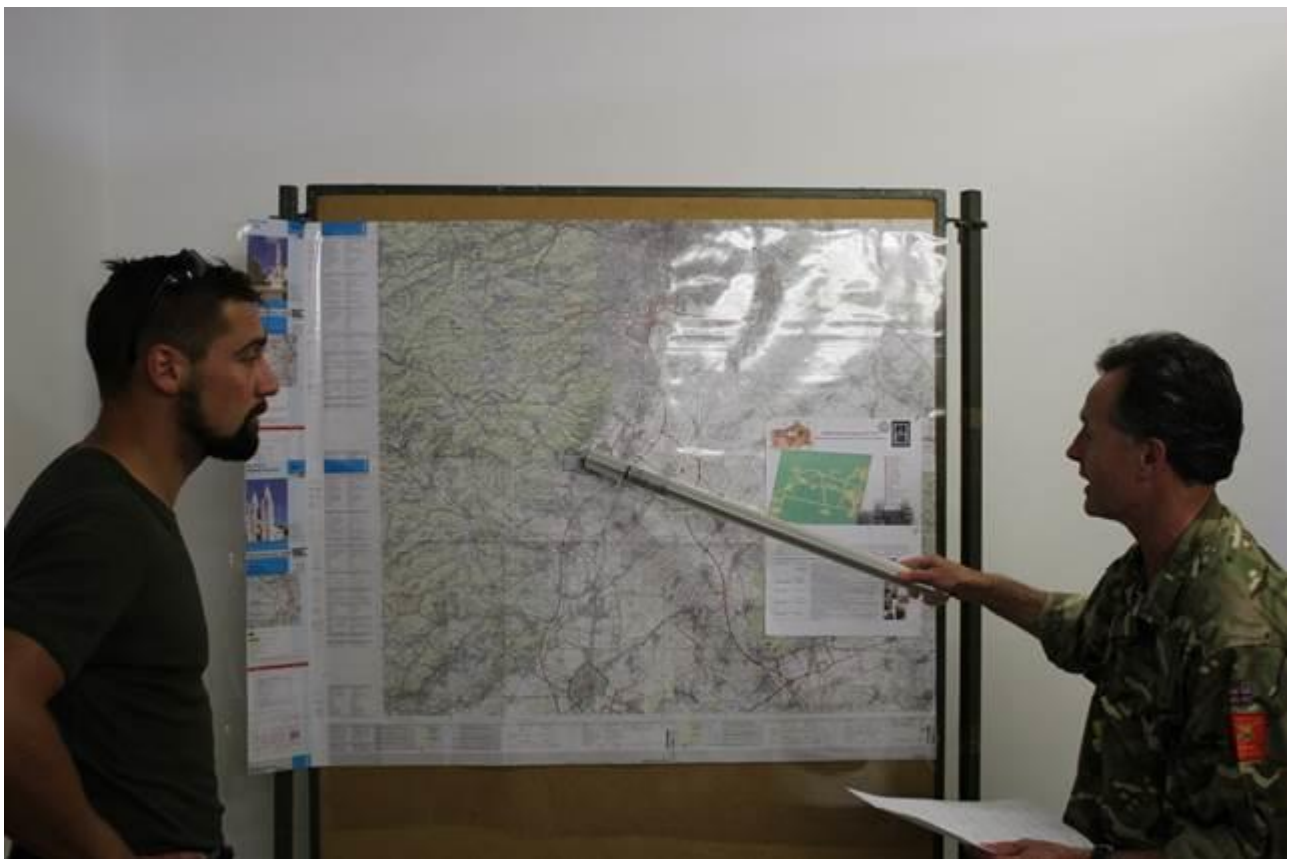
Evaluation of pilot action results and definition of final emergency plans will be adopted. The map shows the seven places where the pilot actions will be implemented.



## ***Events in the last few months:***

### ***Exercise Sequence TRITOLIA18 (May 26th - 28th 2018, Austria)***

On May 26th 2018 14 participants met for the exercise sequence TRITOLIA18 in eastern Austria to train how to salvage cultural property after an earthquake and to establish skills in working together with emergency units, in this case an Urban Search and Rescue Platoon from the Austrian Armed Forces. The participants came from Austria, Croatia, Great Britain, Italy, Romania, Switzerland and the USA. Most of them are connected to cultural property protection, and all of them brought in specialised and different knowledge on how to recover and treat cultural goods. The output of the three days training are first and foremost training sequences and schedules in order to enable different personnel to work together in calamitous events and effectually recover cultural heritage. It is not easy for civilian specialist on any kind of cultural heritage to immediately work together with first responders, whereas the other way round is not easy either. Therefore training exercises like Tritolia18 are one of the deliverables in ProteCHt2save.







The ENVIRONMENT - MATERIAL interaction School “Preventive conservation of coastal archaeological sites and cultural landscapes in the Mediterranean Basin” is organized by CNR-ISAC in collaboration with University of Calabria (IT) every year since 2014. The fifth edition saw also the collaboration of the Danube University Krems and ARCHMAT: ERASMUS MUNDUS Master in ARCHaeological MATerials Science coordinated by the University of Evora (PT).

The School, held in the wonderful location of Lipari (Aeolian Islands) from 26 to 29 June 2018, combined understanding of the impact of pollution and climate change with risk assessment and management on coastal archaeological remains, monumental complexes and cultural landscapes, with main focus on measures of protection to natural and anthropogenic risks (floods, sea level rise, fires, volcanic activity, earthquakes and air pollution). Strategies of preparedness, in response to emergency and recovery have been discussed.

The lectures, theoretical and practical, were held by teachers of recognized international fame, among which C. Hanus, P. Strasser and A. Bonazza, also participants at ProteCHt2save. 25 participants from all over the world (United States, China, Indonesia, Mexico, Ukraine, Taiwan, Slovakia, Jordan, Bangladesh, Kyrgyzstan, Iran, United Kingdom, Poland, Portugal) contributed to enrich the implementation of the course with their personal experiences and with examples of risk management adopted in their countries. The students were able to valorise their background by providing concrete solutions to case studies specifically conceived as final test realizing excellent presentation after assessing the types of climate, pollution and socio-economic threats, the type of damage to the materials and prepared the specific action plan for the sites safeguarding.





## Stakeholders support the project in Kočevje (April 2018)

On the 10th of April Municipality of Kočevje organized an event to present the project goals and activities. Representatives of all key local and national stakeholders welcomed the project and emphasized good preparedness and organization at the local level is crucial for long term cultural heritage management. Representatives of Civil protection emphasized that models from abroad must be adapted to the local environment. Fire-fighters need concrete recommendations for intervention in case of natural disasters.

The representative of Slovenian Museums Association and International council of museums Slovenia suggested that the project can build on the experience and products they have already prepared. Representative from the national Ministry of culture suggested to share good experiences from the project with other Slovenian municipalities. Representatives of NGOs would welcome instructions for private owners of cultural heritage collections on how to take action in case of emergency.

## FUTURE EVENTS

### 1<sup>st</sup> ISAC Local Focus Group - Resilience Festival (September 7<sup>th</sup> 2018, Italy)

ProteCHt2save's participating to the organization of the Resilience Festival that will be held in Bologna from 7 to 9 September 2018, including as topic for the first time the safeguarding of Cultural Heritage. CNR-ISAC will arrange it's 1st Local Focus Group in the session "Città e territori dinamici - La resilienza dal passato al futuro/ Cities and dynamic territories - Resilience from the past to the future", the 7th September 2018, 18:00. This event is also included in the teaser event of the "European Night of Researcher 2018" funded by Project SOCIETY H2020-MSCA-NIGHT-2018/2019 Nr.819090 (<http://nottedeiricercatori-society.eu/>).



From August 27 to September 1 2018 ProteCHt2save's Summer University Cultural Property Protection will be held in the Monastery of Melk in Austria, a Baroque Benedictine Monastery famous from Umberto Eco's "The Name of the Rose". During the week participants will develop models for Cultural Heritage Rescue Teams that will be implemented in all partner countries. They also will work on short training and educational

sequences for cultural heritage protection and crisis staff work and exercise as well as conduct a short life exercise for rescuing cultural property in the monastery together with the Cultural Property Protection officers of the Austrian Armed Forces / Territorial Military Command of Lower Austria.

## ***ProteCHt2save key facts***

**Project duration: 01.07.2017 - 30.06.2020**

**Project budget: 2,150,549 €**

**ERDF funding: 1,787,110 €**

**Website: <http://www.interreg-central.eu/Content.Node/ProteCHt2save.html>**

## **LEAD PARTNER**

**Institute of Atmospheric Sciences and Climate – National Research Council of Italy**

## **PROJECT PARTNERS**

**Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences**

**University for Continuing Education Krems Danube University Krems**

**Regional Development Agency Bielsko-Biala**

**Municipal District Praha – Troja**

**Bielsko-Biala District**

**Municipal of Ferrara**

**Government of Baranya County**

**City of Kaštela**

**Municipal of Kocevje**