

SHELTER Project

Aitziber Egusquiza, project coordinator (TECNALIA)

The quality of being able to return to a previous good condition after something bad happens is called

resilience



Sustainable

Historic

Environments

holistic

reconstruction through

Technological

Enhancement &
community based

Resilience

Shelter

Is a project dedicated to research,
funded by the European Commission



The aim of Shelter is to:

- increase **resilience** of historic areas
- to improve their reconstruction after a disaster

How? with:

- research
- people
- Technology



How much time we have?

4 years of work together
(June 2019-May 2023)

Shelter

Who we are?

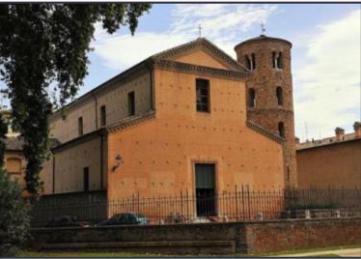
23 partners

8 Small Companies
10 Research Organisations
5 Public Bodies



Shelter

from 9 countries



5 Open Labs

representative of **main climatic and environmental challenges** in Europe and **different heritage's typologies**

3 Urban

- Ravenna, Italy
- Seferihisar, Turkey
- Dordrecht, Netherlands

2 Cross-border

- Baixa Limia-Serra Do Xurés Natural Park, Galicia - Spain
- **Sava River Basin**, South East Europe



Resilience in historic areas is a challenge

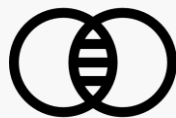
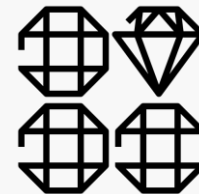
*Fragmented
laws*



*Higher
vulnerability*



*Unique
Historic Areas*



*We need to find solutions compatible with
materials, cultural values and traditional
lifestyles*



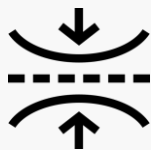


Resilience in historic areas is an **opportunity**

Historic areas are living examples of resilience. They have survived during centuries!



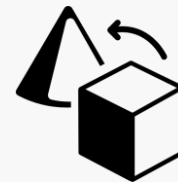
We need to learn from their capability to:



*take advantage
of **natural
resilience***



***link resilience
with sustainability***



*use it for
transformation*





What does **resilience** mean for us in SHELTER?

Shelter

- *dynamic view of the future*
- *risk, uncertainty and surprises are going to be normal*

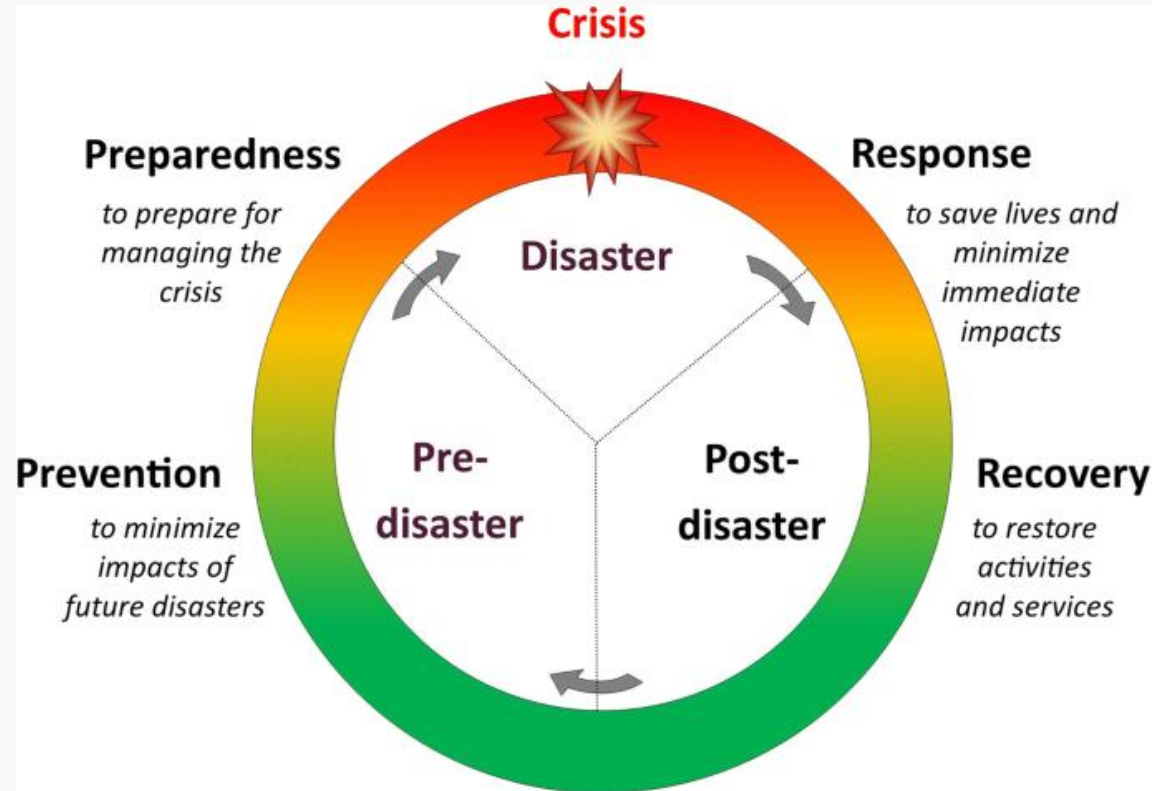
...but we can use them to build a more sustainable future!

Disturbances cannot be an unexpected event anymore, we must expect them, accept them and use them for transformation



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 821282

How can we reduce disaster risk?



Disaster risk management

Is the application of disaster risk reduction **strategies** to

- prevent new disaster risk,
- reduce existing disaster risk
- manage residual risk.

Contributing to the strengthening of resilience and reduction of disaster losses.

Our challenge is to develop tools for all the phases of disaster risk management

The hazards in Shelter



Earthquakes



Floods



Subsidence



Wildfires



Heat wave



Storms

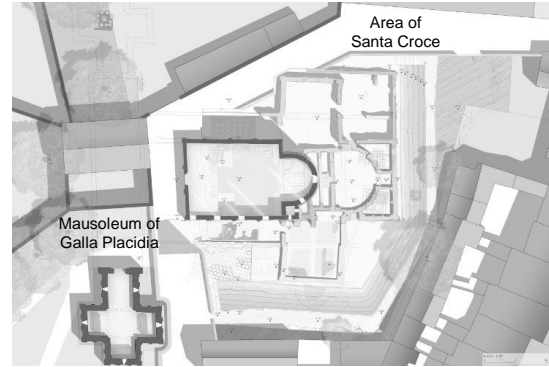


Let's make a virtual journey to our 5 open Labs



Area of Santa Croce Ravenna, Italy

- Church and archaeological area next to UNESCO World Heritage sites
- Lack of cooperation among the 2 owners and the manager of the area
- No early warning system or emergency plans available for the area



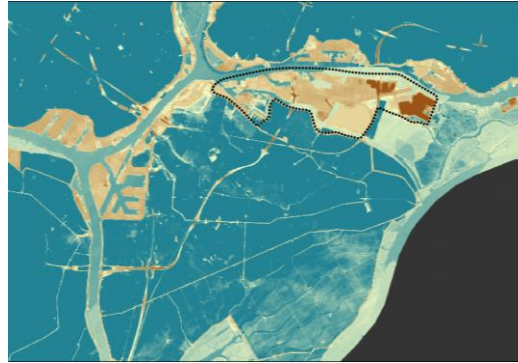
Seferihisar - Turkey

- Port town of Sigacik characterised by **fortress walls and historical protected buildings** which are in deteriorating condition
- In the coastline there is located **Teos archaeological site**
- On the hills, there are villages that accommodate **historical buildings** and **sustain authentic rural practices**



Dordrecht - Netherlands

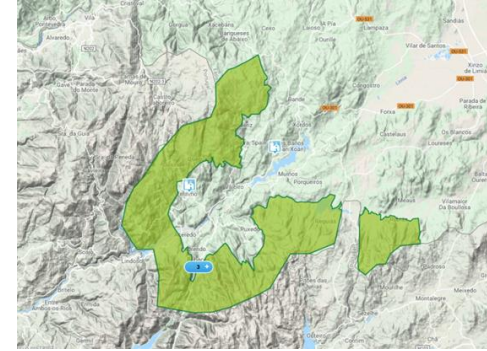
- Part of the **historic city centre** which includes almost 800 listed buildings
- characterised by the **long stretches outside the dikes** which includes the historic port area
- Small scale flooding occurs regularly, but larger floods are rare
- With climate change the risk is expected to increase



Baixa Limia - Serra Do Xurés Natural Park

Galicia, Spain


- The Natural Park has an **area of about 30.000 hectares**
- important set of **natural habitats and species of significance** for the conservation of the existing biodiversity
- **Natural and built heritage** coexist in the Park.



Sava River Basin – South-Eastern Europe



Sava River Basin – South-Eastern Europe



SAVA RIVER BASIN

IS OFTEN VERY AFFECTED BY EXTREME FLOOD EVENTS WHICH CAUSE HUGE LOSSES


6 COUNTRIES
SLOVENIA • CROATIA • BOSNIA AND HERZEGOVINA • SERBIA • MONTENEGRO • ALBANIA

16%
OF COUNTRIES' POPULATION LIVES WITHIN FLOOD AREAS (1.4 MLN. OF 9 MLN)


2ND LARGEST
DANUBE SUB-BASIN (97.7K KM²)

5,8%
FLOOD AREAS OF THE TOTAL RIVER BASIN AREA

SAVA OPEN LAB
ACTIVITIES COORDINATED BY



INTERNATIONAL SAVA RIVER BASIN COMMISSION



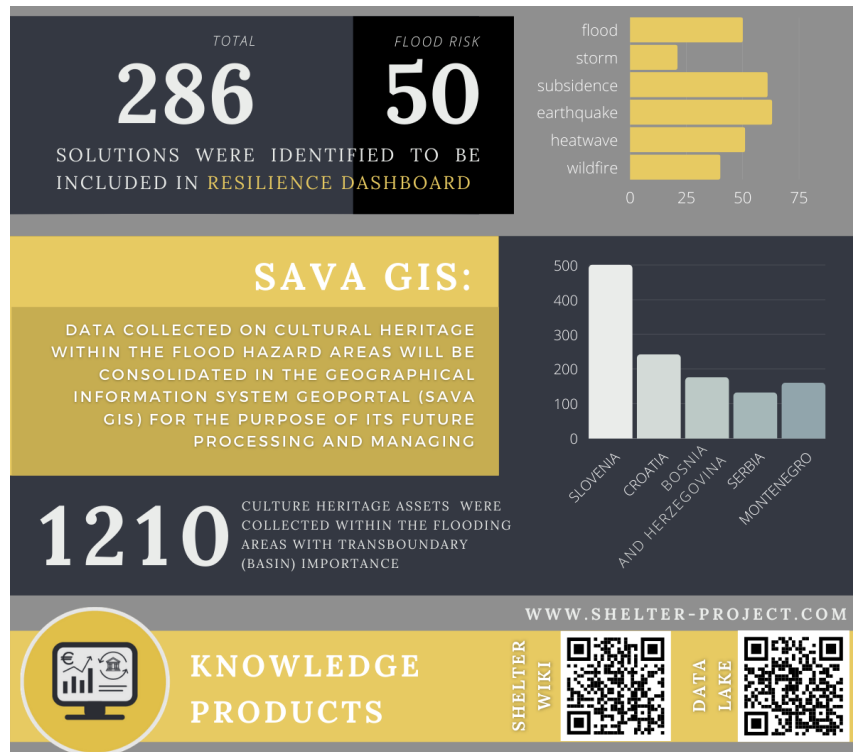
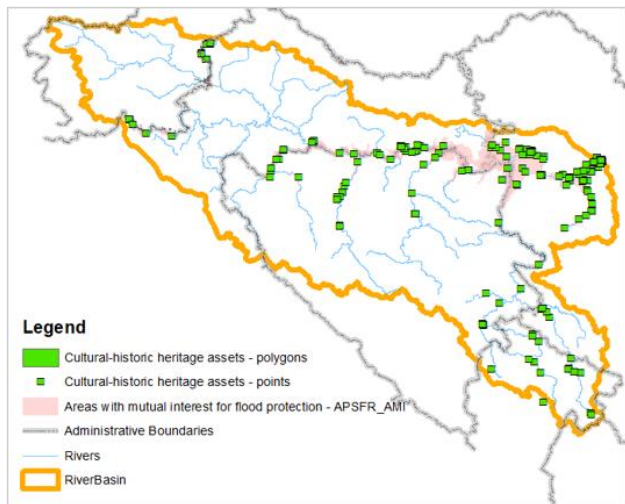
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Sava River Basin – South-Eastern Europe



What we have done:

- 37 stakeholders meet twice/ three times per year during workshops to discuss the project activities
- 12 task Group experts nominated (from 12 institutions from 5 countries), will make sure the results of the project will be used after the end
- At the moment data of more that 1210 cultural heritage assets in the Sava River basin have been collected and they can be visible in the SAVA GIS



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But SHELTER family is not alone!

We work together with other colleagues
in other countries for the same purpose:
Protecting cultural heritage





Shelter

ARCH SAVING
CULTURAL
HERITAGE

Hyperion



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Thank you!

Contact us

 Website: www.shelter-project.com

 contact@shelter-project.com

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Disaster (Floods) Risk Management

Mirza Sarač (International Sava River Basin Commission)



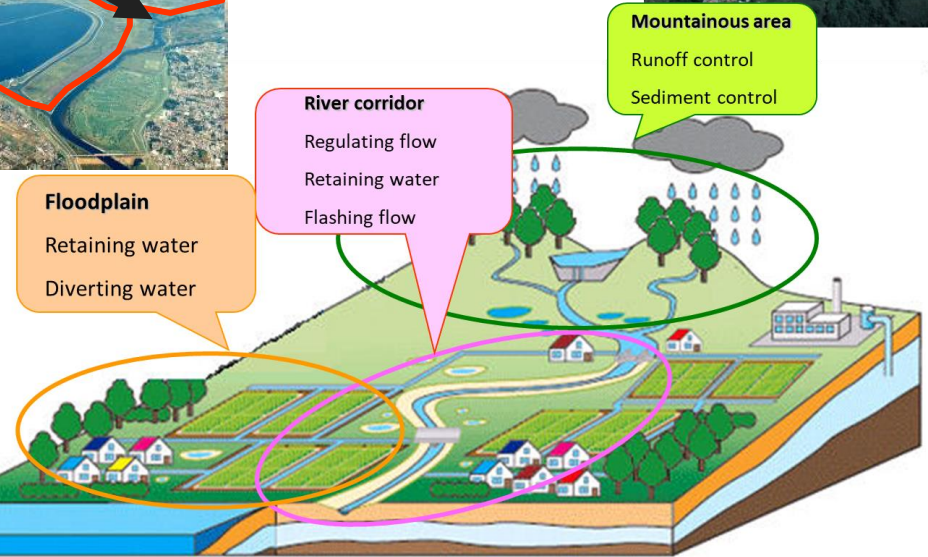
Disaster: Floods

- **Riverine (channel) or fluvial flooding is caused by water overflowing from a lake, pond, river or stream**
 - Pluvial (aerial) flooding – by heavy rainfall or snowmelt
 - Coastal (sea) flooding – by rising sea levels
 - Urban flooding – by a drainage system or a storm sewer system that is overwhelmed
 - A flash flood – sudden and rapid flooding of an area that is prone to flooding
 - Catastrophic flooding – infrastructure failure, like the failure of a levee or dam
 - Groundwater flooding
-
- ❖ The deadliest flood on record – 1931 (Jul-Nov) China floods. Some estimates have the death toll as high as 4 million people. This flood is also considered the deadliest natural disaster in recorded history
 - ❖ The latest severe flood in the Sava River Basin – 2014 (May) with the death toll of 79 people



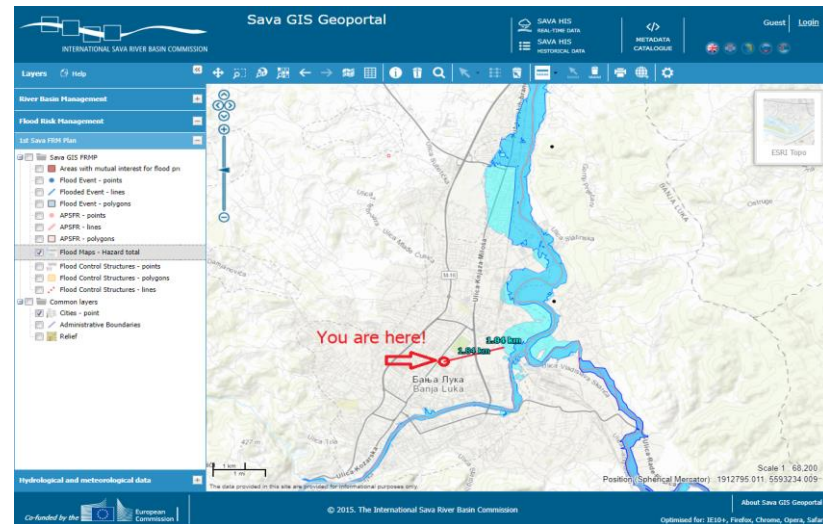
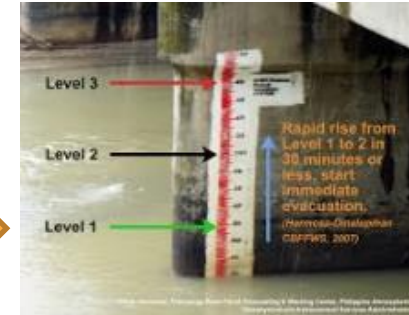
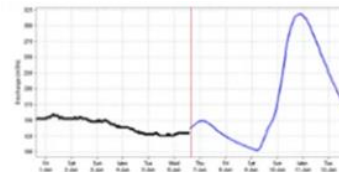
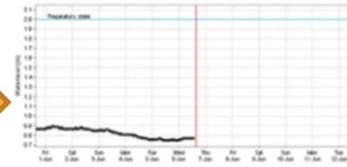
Mitigation/ Prevention

- Construction of dike
- Building of dam
- Forestation
- Construction of flood control basins/
reservoirs
- Construction of erosion control dams
- Construction of retaining walls



Preparedness

- Establishment and operation of hydrological and meteorological observation systems
- Preparation of hazard maps
- Establishment of early warning systems
- Emergency drills
- Education and raising awareness
- Providing access to information and communication
- Food & material stockpiling
- Preparation of emergency kits



Response

- Rescue efforts
- First aid treatment
- Water fighting
- Monitoring of secondary disaster
- Construction of temporary housing
- Establishment of tent villages



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Recovery/Reconstruction

- Disaster resistant reconstruction
- Appropriate land use planning
- Livelihood support
- Industrial rehabilitation planning
- Cultural heritage recovery



Experts dealing with floods

- Civil engineers (hydrotechnical expertise)
- Hydrologists and meteorologists
- Emergency responders
- Environmental engineers
- Architects
- Geophysicists
- Geologists
- Humanistic scientists

- ...



Thank you!

Contact us



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[The SHELTER Project](https://www.youtube.com/watch?v=The_SHELTER_Project)



[The SHELTER Project](https://www.linkedin.com/company/The_SHELTER_Project)

Best solutions

Estibaliz Briz (University of the Basque Country UPV/EHU)





Argumentum.al

Earthquakes

Subsidence



UKInsuranceNET

Storms



netherlandsnewslive

Shelter



Deltares.nl

Floodings



Deltares.nl

Wildfires



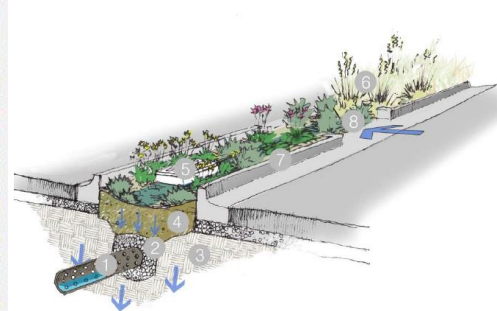
TheLocal.es

Heat waves



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Natural Based Solutions



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The natural infiltration of rainwater and runoff from streets

Avoid
flooding at
the city scale

The optimal distribution of
green spaces should be
defined in an urban
development **plan**

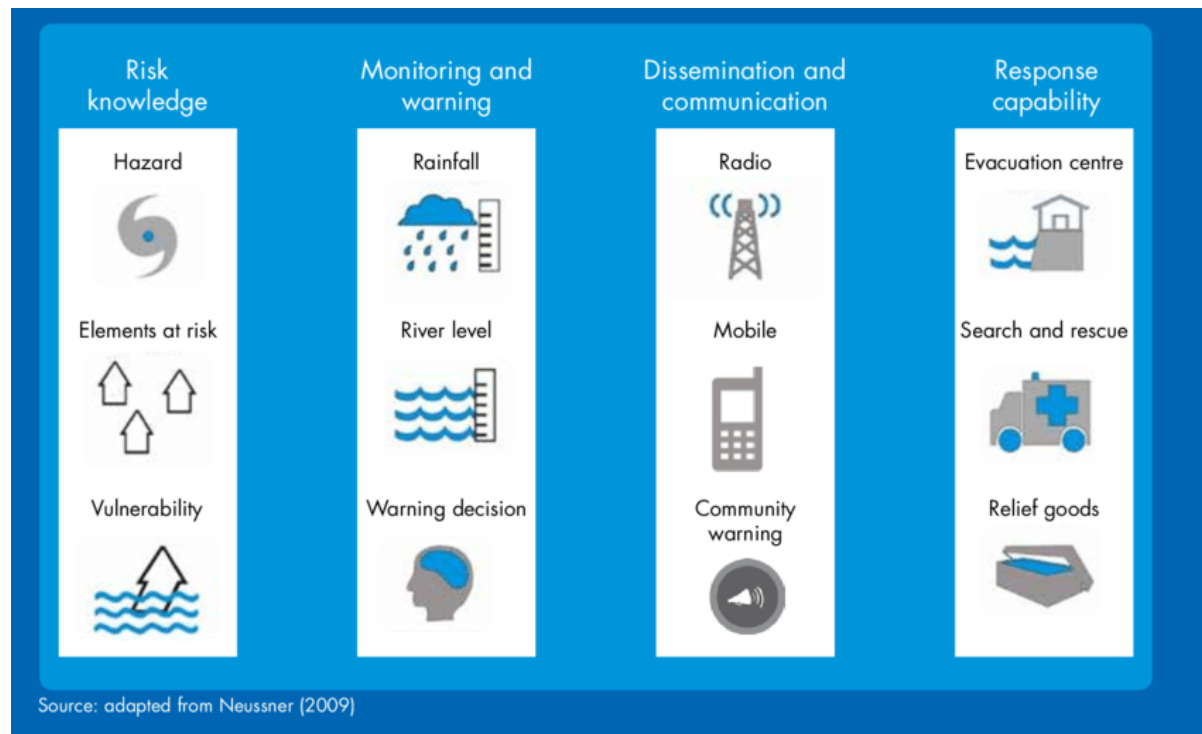


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Early warning systems

To alert authorities and/or the public in advance about a coming flood

Improves community preparedness



Rapid damage assessment

Web service providing automatic flood and wildfire affected area on satellite data



Helpful as first assessment, before manual assessment

Helpful for future better response



Immersite tool



Design of development and construction projects using 3D visualisation.

Easily movable wooden table, a visual display screen, and 3D printed objects.

Explain project impacts.

Illustrate in a simple and educational way the solutions



Shelter



[IMMERSITE® & Vous Ep. 2] Projet d'aménagement du quartier Bonamour de Capbreton (40)



Storage facilities

Cultural heritage object could be saved by storing or relocating in spaces with appropriate conditions :

- constant and moderate temperature
- appropriate relative humidity levels
- reasonable ventilation

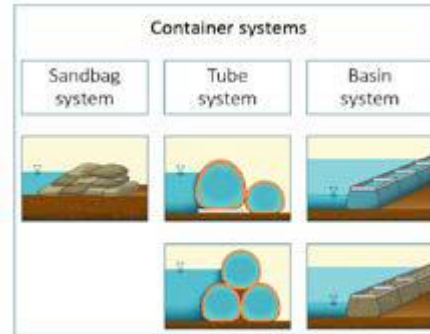


Container systems:

A temporary flood protection system is removed when the flood is passed.

Must be installed before the flood event.

Only functional when the barrier is fully erected before the water rises, so, they need prior warning and time to be installed



Free-standing and frame barriers

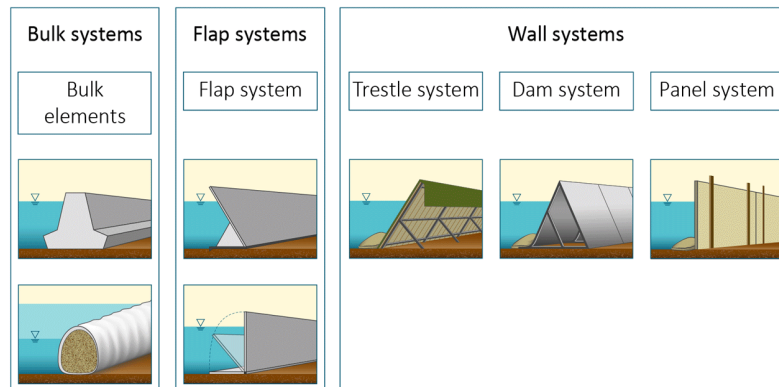
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Must be installed before the flood event.

Only functional when the barrier is fully erected before the water rises, so, they need prior warning and time to be installed

Free standing barriers are modular with enough resistance for self-supporting.

Made of impermeable materials which are joined together to form a continuous wall



Installation of check systems and pumps (district)

Installation of sum pumps, pipes and check systems to extract flood water

Previous study of the flooding level to select the system and its capacity



SUMMARY

Cultural/Natural Heritage management supported by digital tool



Training and awareness of citizens, public bodies..



Creating safe areas maps



Cultural heritage flood management plan and Emergency/Recovery plans



Assessment



...and many more....



Thank you!

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To add Shelter Youth Ambassador ALPHA



SHELTER Youth Ambassador Call

Call dates: 9.10.2021 – 01.06.2023

Sava Youth Parliament, 8th-9th October 2021

A large, abstract, light grey graphic element resembling a ribbon or a stylized infinity symbol, located in the bottom right corner of the slide.



Call for

Shelter

YOUTH AMBASSADORS

NOW OPEN

SHELTER Youth Ambassador Call - Eligibility

Eligibility criteria:

- Being between 15 and 25 years old.
- Having participated to a SHELTER event linked to this call
- Being an active user of social media (e.g., twitter)
- Being interested in performing social and/or academic activity in the related subjects: Climate change, Disaster Risk Reduction, Global Governance, International affairs, Cultural Heritage Preservation, Urban Studies



SHELTER Youth Ambassador Call - Responsibilities



Responsibilities

- Respect Terms of Reference
- Follow all SHELTER social media channels
- Once a week create unique content (video, photo, text) on at least one social media channel related to SHELTER project with mentioning all necessary references (like hashtags and tags)
- Repost to personal social media accounts all SHELTER social media updates



SHELTER Youth Ambassador Call - Responsibilities



Responsibilities

- Volunteer for activities in Sava Region aimed to protect and recover the region from/after natural hazards events, & other areas coordinated by the SHELTER Open Labs
- Perform educational, academic and/or research activities on the related subjects: Climate change, Disaster Risk Reduction, Global Governance, International affairs, Cultural Heritage Preservation, Urban Studies
- Provide detailed report on performed activities to the SHELTER team



SHELTER Youth Ambassador Call - Benefits



Benefits

- Privileged viewpoint on research activities in the frame of heritage preservation and resilience
- Possibilities of support for high school essays and/or university thesis
- Traineeship and other opportunities in SHELTER partners organizations (e.g., TECNALIA, UMAS, ...)
- Mentorship for future career advice on the related subjects



SHELTER Youth Ambassador Call - Benefits

Benefits

- SHELTER team will take the interview of the most active ambassadors and publish it via the project's website & its dissemination channels
- UNESCO Regional Bureau for Science and Culture in Europe will disseminate some of the achievements of SHELTER Youth Ambassadors via its website & social media channels
- Create content shared with SHELTER consortium through SHELTER social media building connections



How to apply

Call dates: 9.10.2021 – 01.06.2023

Interested candidates can apply by sending an email to:

contact@shelter-project.com

With a:

- brief presentation (word or powerpoint)
- motivation to become a

SHELTER Youth Ambassador



Thank you!

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