STORM

Safeguarding Cultural Heritage
through **T**echnical and **O**rganisational **R**esources **M**anagement

STORM Policies and Recommendations – a new vision for authorities, first responders and civil protection towards an effective protection of cultural heritage.

Florence Heri-Tech, October 2020

Funded by the Horizon 2020 Framework Programme of the European Union

700191-STORM-H2020-DRS-2015
Project funded by: EUROPEAN COMMISSION - Executive Agency for Small and Medium-sized Enterprises (EASME)

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700191-STORM-H2020-DRS-2015

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Introduction and motivation

Every year, cultural heritage all over the world is lost or damaged under the devastating impact of climate change and natural hazards. Many times these damages are irreversible and often result from insufficient and disjointed preparedness systems, unable to cope with these threats.

Awareness of this situation and the urgent need to find solutions for it has been a motivational call to taking actions towards the raising of consciousness of all involved, the incentive to training and the sharing of good practices.

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Introduction and motivation

Project STORM (funded by the European Union's Horizon 2020 research and innovation programme – H2020-DRS-11-2015: Disaster Resilience & Climate), introduced a new vision for authorities, first responders and civil protection services concerning cultural heritage, by proposing new policies and recommendations.

This new paradigm based on the STORM experience sets the way headed for the implementation of an overtly risk-oriented approach to the preservation of heritage sites, following the objectives that guided the STORM project through the development of new operative proposal – STORM 5 C.

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Introduction and motivation

Regarding the safeguarding policies for cultural heritage to face natural hazards, STORM recommends the adoption of disaster reduction policies that introduce a new pathway that takes us from safeguard to effective protection of cultural heritage.

Recommendations for new policies and guidelines for best practices regarding a new paradigm for the effective protection of cultural heritage were the main interests of the municipality in the STORM project. Therefore, in this paper we will focus on the policy recommendations and on a new paradigm based on a set of guidelines - the STORM 5 C.

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STORM 5 C

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STORM 5 C

The STORM 5 C are a set of guidelines aimed to improve the disaster risk management (DRM) of cultural heritage.

It is an overtly risk-oriented approach to the preservation of heritage sites ensuing directly from the STORM experience, that identify the areas where improvements may lead to a qualitative improvement of the DRM cycle and, thus, to the improvement of cultural heritage protection.

They resulted from the identification of five “C” keywords from areas thought to be the ones where the advancing of resources could have the highest impact in terms of heritage risk management. Each one of the STORM 5 C guidelines is split into a set of recommendations deemed necessary for its fulfilment.

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STORM 5 C

Heritage **Conservation**

*Heritage **Conservation** and management guidelines and procedures at site and government levels*.

- DRM programs for tangible heritage, explicitly based on the cultural values of the heritage asset(s), should be promoted, in compliance with currently accepted conservation deontological principles;
- At government level, a Frame of Reference (FoR) should be defined considering principles, concepts and terminology documents, and promoted in order to enable and/or support the development and implementation of conservation and/or risk management initiatives;
- A maintenance plan that supports conservation interventions should be set up and include, as much as possible, regular on-site monitoring, preferably with low impact technologies, testing, and thorough documentation about the heritage site;
- The improvement of financial instruments is one critical aspect of heritage conservation, and it should be given preference to preventive approaches to heritage risks, using DRM procedures, instead of merely reactive approaches.

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STORM 5 C
Communication

Communication *between climate researchers and heritage managers, including government authorities…*

- … should be improved, and cultural heritage should be included as a dimension in all national adaptation strategies;
- European Union policy encourages member states to develop their own comprehensive climate adaptation plans covering from local to national levels in coordination with neighbour-states;
- Cultural heritage must be incorporated in climate change research and governance to increase its consideration within climate and environmental policies;
- Climate change risks on cultural heritage should rely on high-resolution climate model simulations.

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STORM 5 C

Coping and adaptive capacities

Coping and adaptive *capacities of heritage sites and organizations to meet their specific risks*.

- *Coping capacity* is “the combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience”;
- *Adaptive capacity* is the ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences;
- Governments should acknowledge cultural heritage as a cross-sectoral area and strengthen the integration of heritage needs in disaster risk reduction and climate change adaptation agendas;
- Financial mechanisms for preparedness activities, including regular drills, and emergency response, must be created.

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STORM 5 C
Cooperation

Cooperation *between the different actors involved in the disaster risk management of cultural heritage*.

- The Civil Protection authorities – or any other emergency officials that assist in the preparation and update of emergency plans, assure the implementation of risks and hazards mitigation activities, and support the emergency teams and disaster victims – play an important role in the safeguard of buildings, monuments and cultural assets;
- It's crucial to create an operative structure that can manage emergency situations on heritage assets, establishing and coordinating the necessary actions to be performed by the different actors;
- All site emergency plans must be elaborated in close articulation with national and local authorities;
- It's essential to support and promote voluntary work in cultural heritage prevention and conservation projects.

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STORM 5 C
Capacity building

Capacity building *of heritage professionals, as well as of other pertinent stakeholders*.

- Capacity building among heritage and DRM professionals can significantly contribute to regional and national disaster reduction strategies and processes;
- It’s essential to organise DRM and Climate Change Adaptation training programs for heritage professionals, designed to protect cultural heritage;
- It’s also essential to encourage the transfer of knowledge from the academia to the public and to support universities in the development of courses with contents on safeguarding and managing Cultural Heritage in the face of climate change.

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STORM recommendations for policies

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STORM recommendations for policies

Existing policies

Under STORM, a comprehensive analysis of the current policies and procedures was undertaken in the pilot countries of the project, with the following results:

1. **Lack of national strategies** - national legal systems do not include a national risk management plan, nor climate change adaptation plans;

2. **Lack of coordination** - the nonexistence of risk management policies for cultural;

3. **Lack of capacity** - inability to implement preventive measures on cultural heritage due to the lack of resources, including funds;

4. **The importance of scientific and technological research** for a better understanding of cultural heritage risks and vulnerabilities, and thus for the development of an efficient legal and policy framework.

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STORM recommendations for policies

Existing policies

An essential assumption, outcome from this analyses: the acknowledgement that cultural heritage is a transversal value to all the key governance areas – Civil Protection, Territorial Planning, Public Works, and Environment – and it is a priority that needs to be in the political agenda in the coming future;

A major teamwork developed by the STORM consortium led by the Portuguese National Directorate for Cultural Heritage that followed the STORM comprehensive analysis of the current policies and procedures, resulted in a set recommendations for policies adoption;

No precedence is established among them, assuming that any sequencing or any prioritisation is possible, depending on the government's responsibilities for the entities in charge of its adoption (national, regional or local levels):

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STORM recommendations for policies

Recommendations for policies adoption

1. ***Political commitment of the national, regional or local government communities*** - this commitment should serve as a framework for solving funding limitations and promote preventive measures in the scope of shared management of endangered heritage assets;

2. ***Creation of a High level Permanent Intersectoral Forum*** - this forum should have a mandate to promote legislation review, establish guidelines and methodologies, disseminate good practices, promote the articulation between central government and local authorities;

3. ***Include risk assessment information on the listing or designation procedures for cultural heritage*** - the identification of hazards, vulnerabilities and exposure level of cultural heritage to threats, should be considered as criteria in the decision-making processes;

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STORM recommendations for policies

Recommendations for policies adoption

4. ***Involve communities in heritage safeguarding*** - participatory management models are widely recognised by international organisations, including UNESCO, who clearly requires the involvement of World Heritage Sites stakeholders in the preservation and maintenance of its outstanding universal values;

5. ***Set up Local Framework Plans*** - this non-legislative instrument should allow to collect in a single document all normative references, whether legal, standards or good practices, that the political decision maker, or any interested party, must take into account in territorial planning where protected cultural heritage is located;

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STORM recommendations for policies

Recommendations for policies adoption

6. ***Implement risk mapping on heritage management*** - this tool is recurrently mentioned by managers of cultural heritage as a missing and necessary key element to support decision making. This instrument should also inform other territorial planning instruments, as well as emergency plans, and be communicated for the purpose of adequacy of the action of civil protection agents.

7. ***Secure funding for the financing of preventive measures for cultural heritage*** – among others, it's essential to develop a line dedicated to risk prevention and management projects, including the financing of risk prevention plans.

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STORM experience and conclusions

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STORM experience and conclusions

STORM project promoted several drills and exercises to test the technological solutions and recommendations.

In the Portuguese pilot site – Roman Ruins of Troia – one of the most daring drills was held, in which more than 50 professionals and volunteers took part.

The preparation and execution of this drill was done in an environment that mixed simulated actions with concrete actions of protection and safeguard of endangered cultural heritage.

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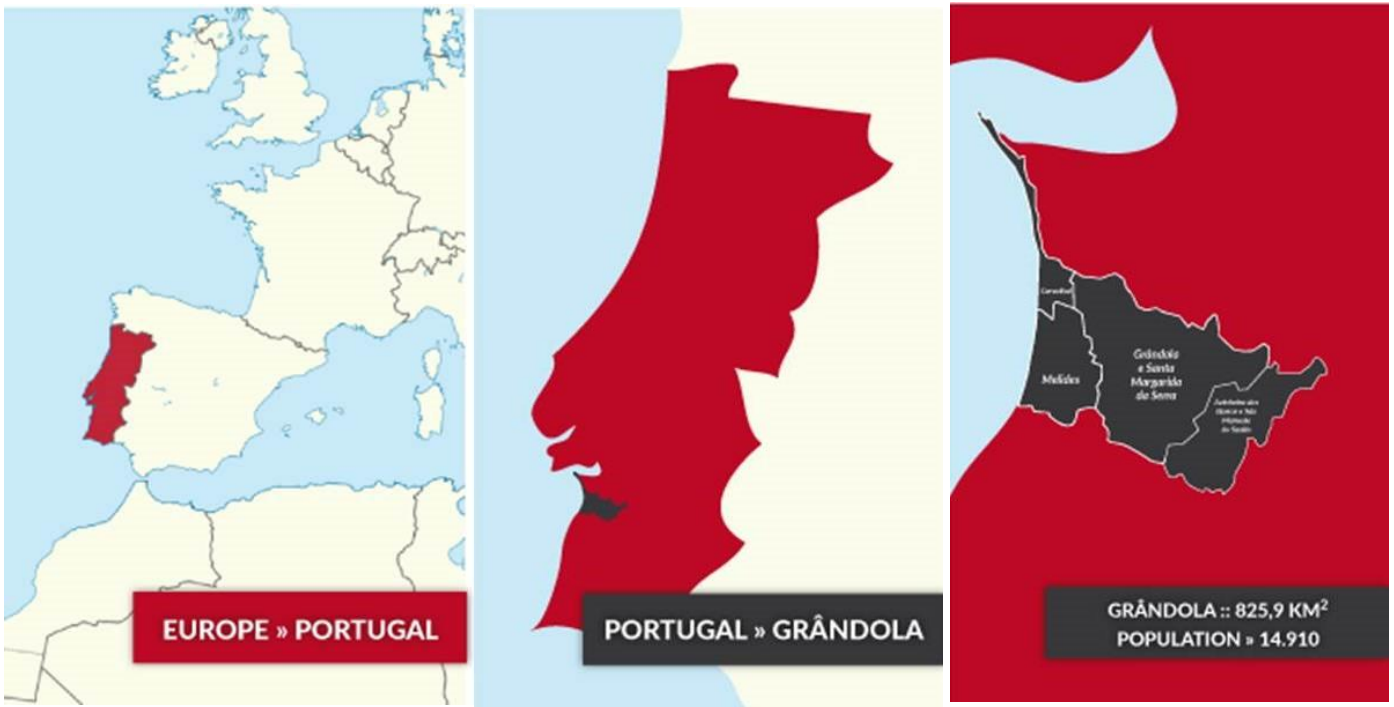
STORM experience and conclusions

Roman Ruins of Troia and Grândola location



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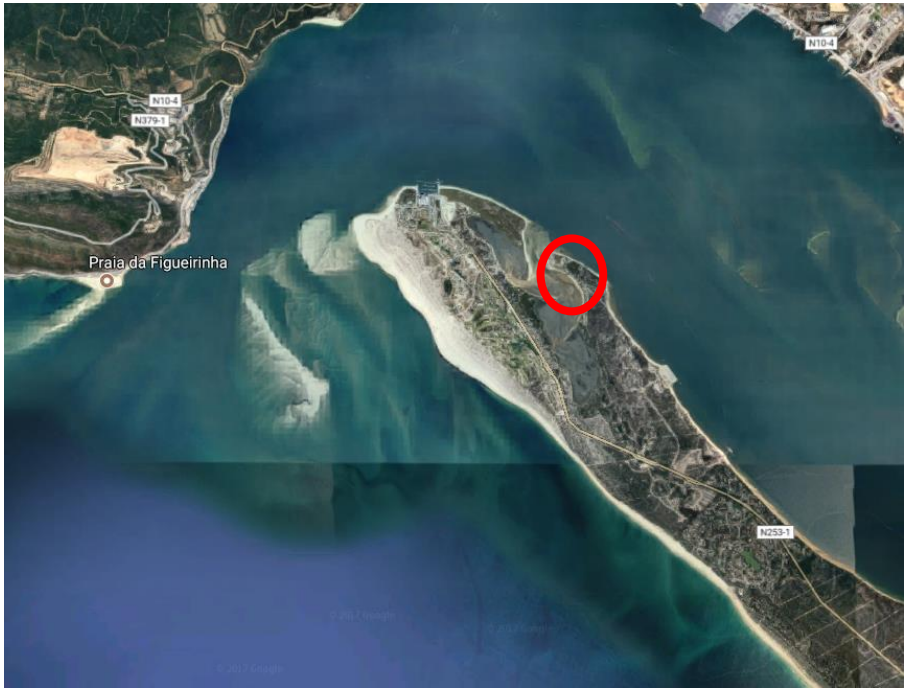
STORM experience and conclusions

Roman Ruins of Troia and Grândola location

- In the North end of the territory is one of the STORM pilot sites - The Roman Ruins of Troia;
- Located on a narrow peninsula, the Roman Ruins of Troia may be affected by a series of climacteric phenomena, such as floods, storms and tides;
- The Municipality of Grândola (MG) is the first entity responsible for civil protection and emergency operations in the territory.



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STORM experience and conclusions

Held in February 2019, it intended to secure one of the walls of fishing salt workshop no. 21.

The necessity for improving communication channels, in order to strengthen an integrated collaboration of all actors involved in emergency management processes, was recognised.

Heritage site owners, civil protection authorities, security forces, firefighters, cultural heritage authorities, conservator-restorers, environmental agencies, and military forces, namely, the Portuguese Navy and the Maritime Police/Authority, participated in this exercise, bringing together, for the first time, different expertise for cultural heritage safeguarding.

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STORM experience and conclusions

This successful experience was possible due to the endeavour of the local authority of civil protection (Municipality of Grândola – Civil Protection Municipal Service), who mobilized and coordinated the different actors involved, demonstrating that coordination can be done at the local level.

This drill is the proof that the STORM recommendations are viable and establish a new paradigm towards the adoption of a **new pathway that will takes us from safeguard to effective protection of cultural heritage**.

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STORM experience and conclusions

The exercise was recorded on video and is available on the following links:

- (short video) https://youtu.be/VQLxI0wHLDM;
- (long video) https://youtu.be/6Ea7QXyXbc4.

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Questions, doubts, experiences exchange…

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Thank You

for your time