

DELIVERABLE D.T3.1.2

Transnational Strategy part CROATIA

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Authors:
PP Croatia





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1. CHARACTERISATION OF THE PILOT SITE

The city of Kaštela is located in the eastern Adriatic coast of Croatia, in Central Dalmatia (lat. Dalmatia), Splitsko-dalmatinska County. In particular, this site is located under the mountain Kozjak, northwest of the city of Split, west of Solin and east of Trogir. The uniqueness of Kaštela town lies in the fact that city has developed itself around seven castles, built in the time of Turkish threats in Dalmatia, around which the present day settlements (Kaštel Sućurac, Kaštel Gomilica, Kaštel Kambelovac, Kaštel Lukšić, Kaštel Stari, Kaštel Novi, Kaštel Štafilić) gradually developed.

We singled out the places of Kaštel Sućurac and Kaštel Gomilica, but taking into consideration the other settlements as well, referring to the fact that all settlements of the City of Kaštela developed around fortresses, positioned on the coast, nearby sea.

Kaštel Sućurac is the oldest established settlement on the Kaštela coast.

In ancient times Salonitans built their summer houses in this area, and the most representative palace in the place is the archbishop's mansion built to protect the villagers of Putalj, located on the slopes of Kozjak, around the church of St. Juraj. Over time, with additional activities on the tower, it became a settlement by the sea. Nowadays Kaštel Sućurac hosts the Museum of the Kaštela city.

The area on which the settlement is built represents the embankments in the sea made in 16th century. The embankment spread deeper into the sea as the number of citizens grew as a result of migrations due to war threats by Turks. According to the report made by count Nikoa Correr in 1583, there were 226 citizens in 54 houses, well protected by the defensive wall, but unprotected from the sea side. A great number of houses from that area are still inhabited.



Fig. 1-3: The old town and threats posed by sea floods.

Kaštel Gomilica is a part of the city of Kaštela, the second settlement from the direction of Split towards Trogir, located along the coast of the Kaštela Bay, as all Kaštela settlements are.

Kaštilac is the Fortress built by the Benedictine nuns from Split in 1529 on the small island called Gomile (meaning “a pile” of stones). Based on the name of the island the castle and the settlement got its name, which is present until today.

On the underwater cliff, about 40 meters from the shore, a fortress of a square ground floor was built. The castle is connected to the land by a stone bridge, which still exists. The castle has a high tower in the middle of its northern wall over the entrance to the fort. Its defensive function was lost in the 17th century.

The settlement is still inhabited and faces the same problems as Kaštel Sućurac due to fact that it is built on an embankment. During the centuries the sea impact has caused erosion of the foundation, cracks on buildings and penetration of the sea water when tide is high. For the location documentation of structural repair is currently under way, but it does not resolve the problems of high tide threat and sea flood impact.

The locality of Kaštilac is the most beautiful and one of the most photographed castle towers in Croatia.



Fig. 4-5: Kaštel Gomilica from the air and in detail.



2. OVERVIEW ON EXISTING AND PLANNED MEASURES FOR DISASTER RESILIENCE

A. Threat analysis

Conducted		yes
Communicated to	Owners / curators of cultural heritage	yes
	Local stakeholders	yes
	Policy makers	yes

B. Emergency responders for cultural heritage protection

Insert possible emergency responders for cultural heritage for the pilot site. Adapt the table as you see fit according to the structure of responsibilities in your country respectively the pilot site.

Contact to possible emergency responders established with			
Emergency responders	Fire fighters	Local level	Yes
	Civil protection	Regional level	Yes

C. Resilience of built environment

Developments and guidelines ProteCHt2save communicated to		
D.T1.2.1 Risk Assessment of Cultural Heritage in Central Europe in facing Extreme Events	Owners / curators of cultural heritage	Ongoing
	Local stakeholders	Ongoing
	Policy makers	Ongoing
D.T1.2.3 Elaboration of Maps with hot-spots of extreme potential impacts on cultural heritage	Owners / curators of cultural heritage	Ongoing



	Local stakeholders	Ongoing
	Policy makers	No
D.T1.3.1 Manual for Cultural Heritage Managers containing mitigation and adaptation Strategies to face up future climate change pressures	Owners / curators of cultural heritage	Ongoing
	Local stakeholders	Ongoing
	Policy makers	Ongoing
D.T2.1.3 Decision Support Tool	Owners / curators of cultural heritage	Ongoing
	Local stakeholders	Ongoing
	Policy makers	Ongoing
D.T2.2.1 Manual of good and bad practices for disaster resilience of cultural heritage risk assessment	Owners / curators of cultural heritage	Ongoing
	Local stakeholders	Ongoing
	Policy makers	Ongoing

D. Emergency plans

Developed	Kaštel Sućurac and Kaštel Gomilca	Flood		Ongoing
		Fire		Ongoing
		Movable cultural heritage		No
Implemented	Kaštel Sućurac and Kaštel Gomilca	Flood		No
		Fire		No
		Movable cultural heritage		No
Tested / Trained	Kaštel Sućurac and Kaštel Gomilca	Flood		No
		Fire		No



		Movable cultural heritage	Internal	No
			With emergency responders	No

E. Education and training for cultural heritage protection

Heritage side	Theoretical	Ongoing
	Practical	No
Emergency responder side	Theoretical	Ongoing
	Practical	No
Collective	Theoretical	No
	Practical	No



3. THREAT ANALYSIS

Likelihood	Almost certain					
	Likely				Severe Weather, Climate	Flood, Sea Flood
	Possible		Fire	Accidents, Pollutants		
	Unlikely					
	Rare		Violence, Vandalism	Earthquake		
		Insignificant	Minor	Moderate	Major	Severe
Impact						

The analysis is based on experience and previous events. Historical sites are on the coast line and major threat comes from the rising sea level as well as events related to climate changes. Due to the fact that Kaštela's bay is a closed area with marinas and industrial infrastructure it is expected to have moderate risk from ship accidents and pollutants from ballast waters. Earthquakes are rare and with minor magnitude, but Kaštela is situated in Adriatic earthquake zone. The project PMO GATE, which is in implementation, will give detailed information about this threat. Although the fire is recognized as a big threat to surrounding areas, the pilot sites are not in direct danger from that hazard due to the fact that most of the building infrastructure is made of stone and concrete. The major risk is the sea flood because of its strength and impact and the fact that settlements are built on the sea level and measurements for protection from the rising sea level are overall expensive and in some parts infeasible.

4. RESPONSIBILITIES IN CULTURAL HERITAGE PROTECTION

Cultural heritage and the impact of risk and disaster on cultural heritage management are not adequately represented in legal regulations and strategic documents of the Republic of Croatia. The area of protection and restoration of tangible and intangible cultural heritage in Croatia is regulated by certain legal and subordinate regulations. However, there are no clear provisions regarding the basic conditions and preventive disaster protection measures, or the issuing of permits or licenses for making a risk assessment of the exposure of cultural heritage to disasters. Therefore, such activities in this area are mainly carried out according to the rules of the profession.

The aforementioned law regulates the types of cultural goods, protects them and defines the obligations and rights of cultural property owners. The same law sets forth the measures for the protection and preservation of cultural goods, the performance of their protection and preservation, the carrying out of administrative and inspection activities and other issues related to the protection and preservation of cultural goods

In practice the local fire brigades and civil protection organisations (and in rare catastrophic events of a large scale the army as well) are the only ones who intervene when disasters happen. But the problem is that no special effort or regulations are presented just for cultural heritage. Cultural protected sites or buildings range on the same level of importance as any other part of infrastructure.



Fig. 6: Location of Fire brigades in Kaštela City (Google Maps 2019).

5. RESILIENCE OF BUILT ENVIRONMENT

Firefighting plans and vulnerability assessment with a plan of action are valid and exist, but the problem is that these documents do not consider cultural heritage as special category, but list it as part of the overall infrastructure. The same situation applies to the law regulations and other implementation documents.

6. EMERGENCY PLANS

Emergency plans are in development in coordination with fire brigades and institutions responsible for the cultural heritage in Kaštela City (Museum of Kaštela city and Department of Urban Planning of Kaštela city). The plans will be in correlation with existing protection documents, but with stress on protected heritage. The biggest risk concerning sea floods is the combined impact of the high sea level and the devastating waves with enough power to cause great devastation to the coast and buildings. Since physical protection is not efficient in that scenario, early warning systems will be developed in order to minimize damage and casualties.

7. EDUCATION AND TRAINING

According to general recommendations, it is evident that timely planning and mutual cooperation between the various stakeholders is the most important for the protection of cultural heritage from disasters. In the case of disaster and its impact on cultural heritage, it is important to highlight the rescue priorities. As a preventive measure, it is therefore necessary to identify all elements of cultural heritage, their exposure to disaster risk and the importance of rescue. Based on the classification and prioritization of cultural heritage elements, their recovery in case of disaster will be performed.

For all identified risks of disasters, it is necessary to act preventively in order to protect the elements of cultural heritage before the disaster itself arises. Therefore, the managers of the cultural heritage of the town of Kaštela must follow the steps defined at the beginning of the document. They include the implementation of the analytical phase, the research phase, which is the base to define measures, the implementation of the defined measures and ultimately the evaluation of the implementation results. For each object of cultural heritage, it is necessary to conduct all of the above steps because all measures and goals are unique and depend on the location of cultural heritage.

Cooperation between basic stakeholders in preparation and implementation of rescue plans is most important for emergency response. Theoretical parts developed through this project will be conducted by fire brigades and other responsible institutions in real life.