

# DELIVERABLE D.T3.1.2

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Transnational Strategy part ITALY

Final version  
06 2019

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## 1. CHARACTERISATION OF THE PILOT SITE



Fig. 1: Ferrara City Centre.

Ferrara is an Italian town of about 132000 inhabitants. It is a university and archiepiscopal center. Ferrara is a city of art and culture: The recognition of UNESCO World Heritage as a city of the Renaissance dates to 1995 and in 1999 it has obtained a second one for the Po Delta and its “Delizie Estensi”.

The first reliable document in which Ferrara is named is the diploma issued by the Lombard king Astolfo in 753 AD which attests to its dominion over the city.

At the end of the Lombard period, Ferrara was ceded to the Church of Rome and then became centre of a feud of the Canossa family until the beginning of the 1100: in this period the first signs of autonomy appeared, starting the birth of the free municipality marked by continuous and bloody struggles between the Salinguerra and Adelardi families, who contended the city government.

The Adelardi Family brought along the Este Family from the homonymous locality which, in 1242, after long conflicts and thanks to a huge land patrimony, assumed the absolute power over the City of Ferrara.

For over three centuries under the rule of the Este Family, who brought artists, writers and musicians to the court, Ferrara became one of the most refined cultural centers of the Italian Renaissance.

Important reclamation works were undertaken in the surrounding area. The Duke Ercole I promoted the theater and the chivalric literature and commissioned the imposing and innovative urbanistic project known as “Addizione Erculea” which doubled the surface of the city and changed its appearance. The imposing defensive walls that still surround the city were enlarged and strengthened.



In 1598 the Este dominion in Ferrara came to an end when Alfonso II died without leaving direct heirs and Pope Clement VIII reunified the Ferrara Duchy with the Papal States (Devolution).

During the period of pontifical domination Ferrara suffered a slow decline on artistic, commercial, agricultural and demographic levels.

During the Napoleonic domination many religious orders were suppressed and a large part of the artistic heritage collected by the Este Family left the city and never returned. The revolutionary uprisings led to the expulsion of the Papal government and the annexation of Ferrara to the Unitary State occurred in 1860.

Many laborers participated in the First World War with the promise of acquiring new arable land at the end of the conflict. The huge losses prevented the keeping of the promise and this "betrayal" had as consequence a wide adhesion to the Fascism. During the Second World War the city suffered serious injuries under aerial bombardment, the forces of resistance paid a high contribution of blood, the Jews of Ferrara were deported to concentration camps and very few returned.

Today the City of Ferrara can boast a high quality of life given by a lively reality full of splendid art exhibitions, a refined concert season, various sporting and cultural events.

The economy is historically based on agricultural production, but has industrial plants such as a big petrochemical plant, various industries and a center for small and medium-sized enterprises. Part of the city uses a district heating network powered by geothermal energy.

**Main risk: Heavy rain**



## 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

|   |                               |                |     |
|---|-------------------------------|----------------|-----|
| Contact to possible emergency responders established with |                               |                |     |
| Emergency responders                                      | Civil Protection Service      | Local level    | Yes |
|   | Fire fighters                 | Local level    | Yes |
|   | Police forces                 | Local level    | Yes |
|   | Italian Red Cross Association | Local level    | Yes |
|   | Civil Protection Service      | 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 | No      |



|   |  |    |
|---|--|----|
|   | Local stakeholders                     | No |
|   | 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 | No |
|   | Local stakeholders                     | No |
|   | Policy makers                          | No |
| D.T2.1.3 Decision Support Tool  | Owners / curators of cultural heritage | No |
|   | Local stakeholders                     | No |
|   | Policy makers                          | No |
| D.T2.2.1 Manual of good and bad practices for disaster resilience of cultural heritage risk assessment                                    | Owners / curators of cultural heritage | No |
|   | Local stakeholders                     | No |
|   | Policy makers                          | No |

## D. Emergency plans

|                         |  |                           |                           |     |
|-------------------------|--|---------------------------|---------------------------|-----|
|                         |  |                           |                           |     |
| <b>Developed</b>        |  | Heavy rain                |                           | Yes |
|                         |  | Movable cultural heritage |                           | No  |
| <b>Implemented</b>      |  | Heavy rain                |                           | No  |
|                         |  | Movable cultural heritage |                           | No  |
| <b>Tested / Trained</b> |  | Heavy rain                |                           | Yes |
|                         |  | Movable cultural heritage | Internal                  | No  |
|                         |  |                           | With emergency responders | No  |



## E. Education and training for cultural heritage protection

|                          |             |    |
|--------------------------|-------------|----|
| Heritage side            | Theoretical | No |
|                          | Practical   | No |
| Emergency responder side | Theoretical | No |
|                          | Practical   | No |
| Collective               | Theoretical | No |
|                          | Practical   | No |



### 3. THREAT ANALYSIS

|            |                |   |               |                            |                    |                |
|------------|----------------|---|---------------|----------------------------|--------------------|----------------|
| Likelihood | Almost certain |   |               |                            |                    |                |
|            | Likely         |   | Deterioration |                            |                    |                |
|            | Possible       | Accidents,<br>Pollutants,<br>Theft,                           |               | Climate<br>Pests &<br>Mold | Extreme<br>Weather | Fire,<br>Flood |
|            | Unlikely       |   | Light         |                            |                    |                |
|            | Rare           | General<br>security<br>Violence<br>Accidents /<br>malfunction | Vandalism     |                            |                    | Earthquake     |
|            |                | Insignificant   | Minor         | Moderate                   | Major              | Severe         |
| Impact     |                |   |               |                            |                    |                |

The perimeter of the pilot site includes open spaces, squares where people meet and move. Places are vulnerable to the impacts of climate change due to their artificial nature and almost completely paved and consequently waterproofed. This feature makes it necessary to constantly maintain and clean the water collection sewer system.

Open spaces, monuments, buildings and people are increasingly subjected to the following risks: flooding, heavy rains, raising of average temperatures due to global warming.

Extreme weather events are possible: Heavy rain that results in major damage to cultural heritage.

Earthquake is another unexpected and dangerous risk. The last seismic event dates back to 2012 and caused partial collapses and a lot of fear in people.

The pilot site includes museums and historic buildings rich in artwork. Therefore pests and mold were rated as possible and having a moderate impact, since the whole site with its different cultural heritage items, built and movable was taken into account.

**The most likely threats however are fire and flood.** Fire is recognised as big risk for the old towns since the roofs of the buildings often are immediately connected.

Floods are possible due to the proximity of the Po River.



## 4. RESPONSIBILITIES IN CULTURAL HERITAGE PROTECTION

In Italy the protection of cultural heritage in emergency situations is coordinated on the national level. On May 29 2012 the directive n. 24 established the Crisis Unit - National Coordination UCCN - MiBAC, which is depicted below (fig. 2). The MiBAC, the Italian Ministry for Culture and Tourism thus is responsible for the national coordination of cultural heritage emergency. On national level it cooperates with the Nucleo Carabinieri Tutela Patrimonio Culturale (NCTPC, the law enforcement for the Protection of Cultural Heritage), the Ufficio nazionale Beni culturali ecclesiastici (CEI, the National Agency for ecclesiastical heritage), the Fire Brigades and Civil Protection as well as the general direction of the MiBAC and other central, national or autonomous institutions.

Below that national level are three regions with their own Territorial Crisis Units, which work together with the Nucleo Carabinieri TPC, the local Bishop's Conference, the local representatives of the MiBAC, the local Fire Brigades, the local Civil Protection and other local institutions relevant for coping with the situation from the cultural heritage point of view. The Regional Directorates as national peripheral structures are competent to activate these Territorial Crisis Units, interacting with the listed institutions. The local crisis unit itself has three branches with different specialisations.

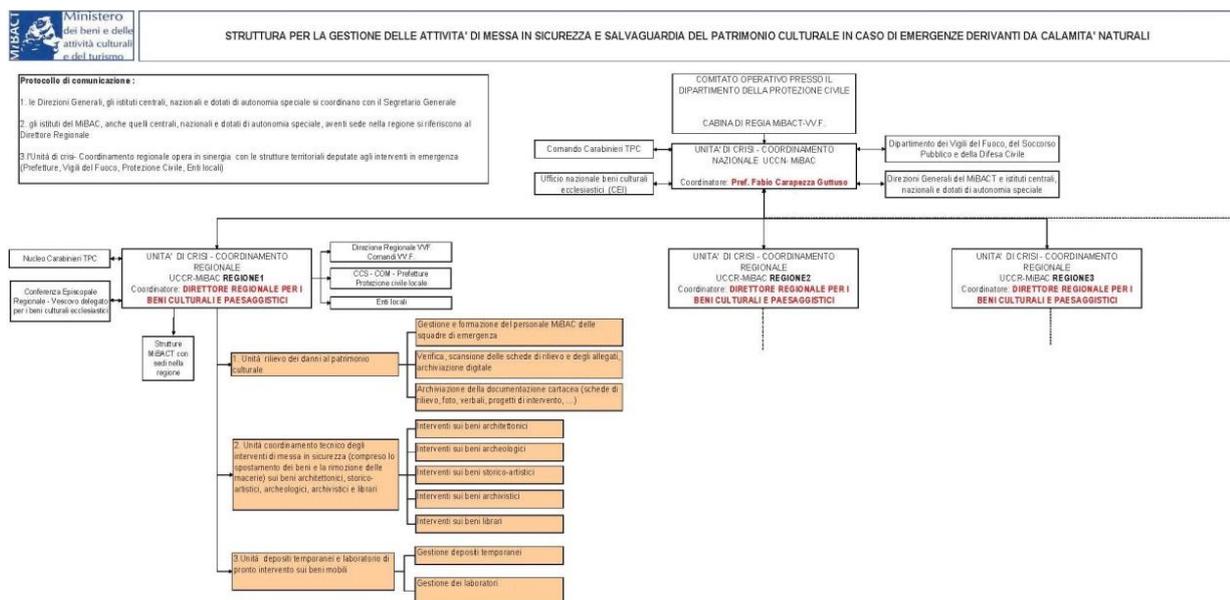


Fig. 2: Structure of the 2012 established MiBAC crisis units.<sup>1</sup>

Details on responsibilities in the different phases of emergency and its prevention are listed in the Bray Directive (2013) and repeated in the subsequent Franceschini Directive (2015). Both describe as well the operational collaboration between the Civil Protection, the MiBAC and the representatives of local authorities involved. The national centre collecting and sorting all the relevant information is the Crisis Unit - National Coordination UCCN-MiBAC, which interacts with the National Civil Protection on

<sup>1</sup> Schema della struttura per la gestione delle attività di messa in sicurezza e salvaguardia del patrimonio culturale in caso di emergenze derivanti da calamità naturali. Attached to Directive 2013, December 12: Procedure per la gestione delle attività di messa in sicurezza e salvaguardia del patrimonio culturale in caso di emergenze derivanti da calamità naturali. (published in GU Serie Generale n. 75 del 31-3-2014) <http://www.beniculturali.it/mibac/export/MiBAC/sito-MiBAC/MenuPrincipale/Normativa/Direttive/index.html> (accessed 22.04.2019).



national level. Concerning recovery measures the Superior Institute for Conservation and Restoration of the Ministry for Cultural Heritage and Activities is the one to be named; it recovers, restores and protects artworks from places affected by disasters. Actions to be taken on the local level are decided by the Regional Secretary coordinator of the UCCR-MiBAC Crisis Unit, which on its level also interacts with the Civil Protection structures, the prefectures, Nucleo Carabinieri TPC and with the Fire Brigades.

At the local level the rescue and safeguard operations are coordinated by the Associated Service of Civil Protection.<sup>2</sup>

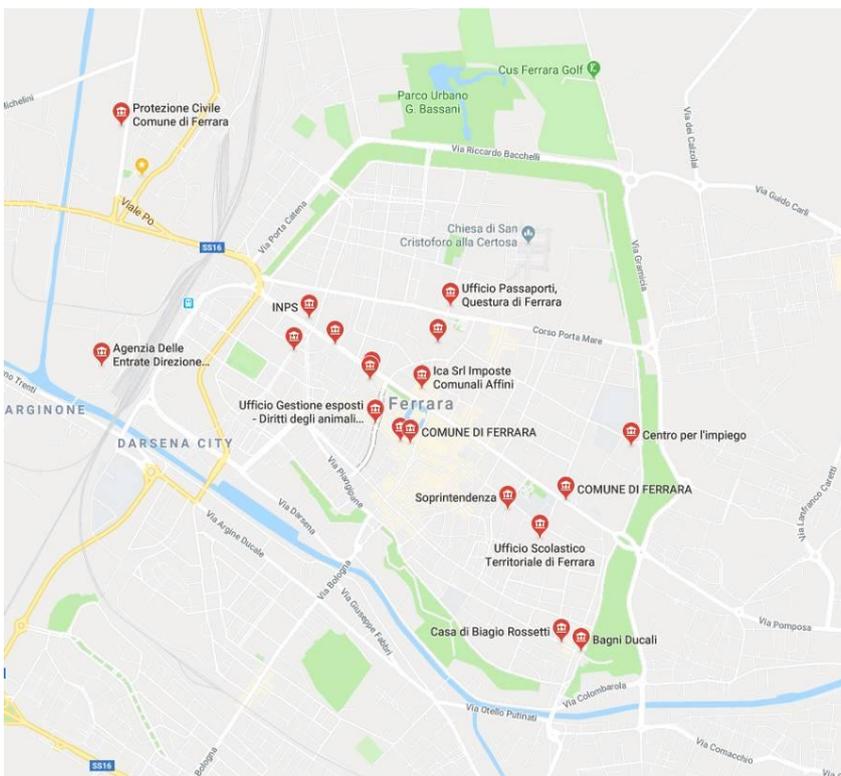


Fig. 3: City centre of Ferrara with official authorities marked in red (Google Maps 2019).

## 5. RESILIENCE OF BUILT ENVIRONMENT

The Hydraulic Risk Management Plan for heavy rainfall dates to 2013 and has been drawn up by the Municipality of Ferrara, Consorzio di bonifica Pianura di Ferrara, Hera, Provincia of Ferrara, the Fire Department, which identifies the risks, the areas involved and the actions to be taken for risk prevention and problem solving.

<sup>2</sup> <http://servizi.comune.fe.it/7543/rischio-pioggie-eccezionali> (accessed 03.07.2019).



## 6. EMERGENCY PLANS

The inter-municipal Civil Protection Plan analyses and highlights the risks to which the population and the territory are subjected, it plans the activities necessary to deal with and manage calamitous events, assigning responsibilities and tasks to the various levels of management and control. It is necessary to collect and organize information regarding the characteristics of the territory, the distribution of services and the population, the factors of danger, vulnerability and exposure present in the area considered. A 24-hour availability service has been set up.

It is necessary to involve and allow the exchange of information between the central and local system of the various civil protection centres also involving municipal technicians, associations of various kinds, professional associations, the Italian Red Cross, citizens, firefighters, local police, armed forces, the Carabinieri, and the national police.

## 7. EDUCATION AND TRAINING

Emergency response training for cultural heritage protection will be structured according to the upcoming ProteCHt2save deliverables.