

Risk prevention and safeguarding of Cultural Heritage in emergency

June 23, 2020

The issue of the risk on CH (into 2 domains: natural and anthropic) is very problematic due to the intrinsic characteristics of CH:

- Typological, structural, dimensional inhomogeneity, heritage diffusion
- Multiplicity of management subjects and owners (State, local authorities, Catholic Church, private citizens)
- Dualism between 1- historical-critical knowledge and 2- physical-dynamic knowledge

The risk assessment is given by the interaction between dangerousness of the context, vulnerability of the single asset, exposure of the asset

Prevention is based on knowledge of the risk

- Knowledge requires the assessment of individual vulnerability
- Vulnerability requires a detailed knowledge of the asset (state of decay, building characters, materials, use) and careful monitoring, the trend of the state of the monuments and other CH over time.
- Prevention involves risk mitigation, through positive actions aimed at the "improvement" of structures

BUT

There is a big divide between risk and prevention

Prevention is difficult: there is a lack of prevention culture, little success of incentive policies

In Italy the greatest natural risk is the seismic one

- The culture of prevention by citizens is lacking on a widespread level
- Failure of incentive policies through tax benefit (*sismabonus*)
- Risk-based programming is missing
- Failure to prevent involves the need for a great effort in the emergency

The earthquakes of central Italy in 2016 - 2017 caused immense disasters to the cultural heritage and it required very great efforts

The macro-seismic scenario detects 3 events:

24 August - 26 October - 30 October: (max 6,5 degree magnitude on the Richter scale), each with its own characteristics. Thousands of aftershocks occurred in the intermediate period. The affected area has gradually expanded. The impacts on cultural heritage have consequently grown exponentially.

The damage occurred not only on monumental structures but also on widespread small historical building, in the small historical cities scattered throughout the mountainous area in the Appennini.

The effects have been very different: territorial and landscape structures completely and wildly transformed, totally destroyed cities and dead cities.

Amatrice, Accumoli, Arquata, and many other small villages seemed bombed; cities like Camerino apparently seem almost intact, actually they are completely unusable, they are dead cities.

Negative causes and impacts:

- the repetition of events that have weakened more and more structures that since the first shock had lost much of the initial resistance capacity;
- the largely prevalent functional typology of cultural heritage, as churches and ancient palaces, has an intrinsic greater vulnerability than the others;
- the construction typology is characterized by poor technical construction and materials, further vulnerable due to the many transformations undergone in the centuries.
- a high exposure due to the presence of many monuments of great artistic and symbolic value, such as the church of San Benedetto in Norcia, which have been destroyed or seriously damaged

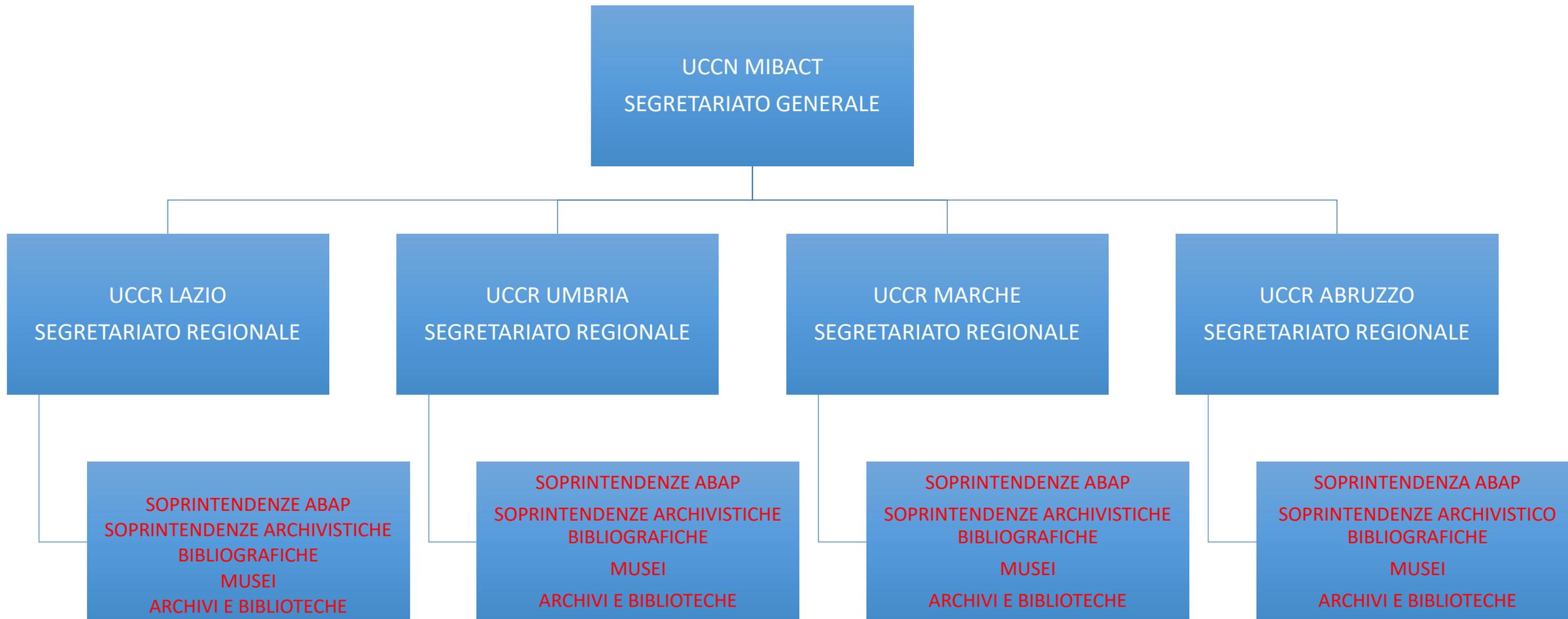
<i>Region</i>	<i>immovable goods</i>	<i>movable goods</i>
ABRUZZO	256	4.282
LAZIO	395	11.968
MARCHE	5.308	43.888
UMBRIA	766	9.895
TOTALE	6.725	70.033

MIBACT Organization in the emergency:

Integrated approach to the specific issues of cultural heritage, however always closely connected with all the others: public safety, viability, anthropic safety, etc.

There is a strong organizational model accompanied by specific protocols, developed "in peacetime" with the MiBACT Directive of 23 April 2015.

The model provides for a national coordination structure headed by the Secretary General (National Crisis Unit - UCCN) and by many Regional Crisis Units (UCCR) headed by the Regional Secretaries of Cultural Heritage.



The UCCR are organized into 3 operating units:

1. Unit for detecting damage to cultural heritage, with the task of managing the damage detection teams, checking and archiving the survey files.
2. Technical coordination unit for the safety interventions on movable and immovable goods, with the task of coordinating the safety intervention teams and the archiving of the technical documentation concerning the interventions and subsequent consolidation.
3. Temporary storage unit and emergency response laboratory on movable artifacts, with the task of managing temporary deposits and emergency response laboratories.

The emergency activities carried out by MiBACT concerned extremely diversified and all very complex areas both by their own nature and due to the surrounding details determined by the earthquake:

- relief and evaluation of damage
- participation in the Technical Support Groups as requested by local authority
- security of immovable goods
- security of movable goods
- temporary protection of collapsed sites to prevent the decay of buried works
- management rubble, in the second phase of recovery of movable property
- Etc. etc.

A strong collaboration with the CCTPC (Comando Carabinieri Tutela Patrimonio Culturale) is included in the MiBACT emergency organisation.

By the central office and the 8 operating units of CCTPC:

- cooperate with the personnel of the Ministry, of the Diocese (Catholic territorial offices) and of the Fire Brigade in the activities on the territory;
- contribute to the security of the works, in synergy with the subjects involved in the management of the emergency;
- provide assistance for the transport of the works removed from the places of origin to suitable places of hosting;
- act as a connection point with the territorial weapon and coordinate with the other police forces, for the provision of dynamic surveillance services to the sensitive objectives identified.

The operational deployment described above has made it possible over time to guarantee the necessary coordination with the structures external to the Administration in charge of emergency management, as has actually happened on time, **with the inclusion in the Civil Protection system.**

In the context of the **Civil Protection system** the MiBACT organization could intervene with the maximum possible efficiency (considering the trend of the events) for the protection of cultural heritage, mostly with:

- a necessary coordination between the central and territorial entities;
- a massive presence in the affected area with technical teams (up to 50 teams per day)
- a participation of all the Ministry's departments in the management of emergencies, to deal with the subsequent stages of restoration and reconstruction with the utmost awareness and effectiveness, in parallel with emergency structures or when they have completed their activities.

During the emergency:

- 8 main directives have been issued by the Secretary general as well as a lot of provisions at operational level
- thousands of tons of ruins have been selected
- nearly 6000 damage assessments in the immovable ch (monuments, churches etc) were made and more than 2,000 participation in the Technical Support Groups (requested by local authorities) are assured by technicians of MiBACT
- over 1,200 provisional interventions to make safe monuments and historical churches were made
- over 25,000 movable ch have been saved in deposits and restored with first aid
- over 700 MiBACT volunteer technicians and thousands of other volunteers from the associations participated

prevention would have been better!!!!!!!

Thanks for your attention