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Covid-19 crisis

Libraries in the crisis

Volunteering in the sector of culture after disasters

EDITORIAL NOTE

This special issue of Libellarium features selected papers presented at the virtual conference on *Solidarity in Culture: Heritage Protection under Conditions of Crisis* that was held in March 2020. It was organised by the National and University Library in Zagreb, Croatia, in partnership with the European Commission as well as the State Archives of Croatia, Croatian Ethnographic Museum, Ruđer Bošković Institute (Radiation Chemistry and Dosimetry Laboratory), University of Dubrovnik Department of Art and Restoration, Zagreb City Office of Emergency Management, International Group for conservation of historic and artistic group: Croatian group and International Council of Museums (ICOM) Croatia. The conference was also supported by the Ministry of Culture and Media of the Republic of Croatia and the Croatian Commission for UNESCO.

The conference programme consisted of 45 oral lectures, 17 poster presentations, 4 workshops with 10 lectures and one roundtable. The details of all the presentations are available in the Book of abstracts. The conference focused on interoperability and collaboration across sectors and fields, capacity building in the cultural sector, in particular within heritage communities, scientific and technological innovations, and solidarity and volunteering in the context of crisis management. Ironically, perhaps, the conference itself was prepared and held not only during the Covid-19 global pandemic but also in the wake of two major earthquakes that caused extensive damage in Croatia (one that was centred around Zagreb that occurred on March 22, 2020 and one in the Banovina region on December 29, 2020). This short editorial introduction to the conference papers has also been written while the military conflict in Europe with the Russian invasion of Ukraine is causing enormous human and cultural tragedies and destruction. At the same time, while in Croatia we inevitably focus on local, regional and European crises and disasters, we tend to overlook those that are distant to us, geographically or temporally. Scholarly and professional contributions to research and the dissemination of knowledge and expertise, conveyed through publications such as this one, help to bridge those gaps. Having in mind the recommendation for extended collaboration and inclusion of various perspectives and knowledge basis that was stipulated in the Sendai framework for disaster risk reduction 2015–2030, this publication seeks to contribute to ongoing processes of risk mitigation, specifically in the cultural sector.

The range of contributions in this special issue mirrors the breadth of papers presented at the conference, and the interdisciplinary and intersectoral approaches they brought to bear. The contributions are compiled within four major areas: risk management and cultural heritage, the Covid-19 pandemic, libraries in crises, and the role of volunteers in the cultural sector after disasters. All these aspects contribute to education and capacity building, the importance of which is highlighted by the Council Conclusions on European Union Approach to Cultural Heritage in conflicts and crises published in 2021. It should also be noted that many of the papers in this issue refer to important survey data that describe the specific contexts of crises, and in that way enhance our knowledge of particular places or events. They document specific situations and the resulting data can be used in future

assessments. The data collected by the RIZIK survey and elaborated in the paper authored by Valentina Ljubić Tobisch, Mirta Pavić, Jasna Širec and Žana Matulić Bilač are a case in point. The authors identify and analyse risk management in the context of Croatian museums that were heavily damaged in the 2020 earthquakes. Long-term planning and clear risk management strategies are the key features of the sustainable approach they advocate. Vesna Živković and Vicki-Anne Heikell, discussing their work in New Zealand, stress the importance of including local communities in the development of risk management strategies. In particular, they advocate the importance of including local indigenous communities in the decision-making processes, adding another layer of complexity to risk management in the cultural sector. Sagita Mirjam Sunara's work looks at education concerns, but it also discusses data and lessons learned from academic work with conservation and restoration students in Croatia during the Covid-19 pandemic. Similarly, but in the Italian context, Marta Gómez Ubierna proposes a systematic method for assessing risk in contemporary public art collections and examines its application at the World Heritage Historic Center of San Gimignano. Writing from the perspective of Italian capacity building to safeguard cultural heritage that is at risk from disasters, Veronica Piacentini presents the contributions of the PROCULTHER project to the European Union Civil Protection Mechanism in Reinforcing Cultural Heritage Protection. Piacentini's findings highlight the need for greater international and intersectoral collaboration, both in size and in concept, with the aim of developing a common European methodology.

The Covid-19 crisis has resulted in many lessons being learned by both professionals and scholars in the cultural sector. Some of the learning has not yet been completed and conclusions are yet to be drawn, but the expression build back better has now entered regular discourse. Chiara Ronchini's contribution on futures thinking approaches to aid recovery and renewal during the Covid-19 crisis within Historic Environment Scotland, a public body dedicated to the protection and planning protection of Scotland's historic environment, reveals the value of scenario-based planning. Intersectional coherence across the cultural sector and the creative industries that emphasises cultural heritage workers and freelance professionals and artists and the impact of the Covid-19 crisis is elaborated in Inês de Carvalho Costa's paper. One of the positive consequences of the Covid-19 pandemic was the rapid digital transformation in cultural heritage institutions. Business operations of cultural institutions had to adapt to the distorted situation, switch to other communication channels, and test new outreach methods ad hoc. From the perspective of the Croatian History Museum, Mislav Barić discusses how the Museum's virtual presence was enhanced as a result of coping with the impacts of the Covid-19 pandemic and the Zagreb earthquake. His paper discusses the Croatian History Museum website and social media analytic data and reveals how the techniques used by the Museum in adapting to the twin crises eventually showed benefits in terms of outreach to new audiences. Jelena Balog Vojak and Maja Mladinov's paper, also written from the perspective of the Croatian History Museum regarding efforts during Covid-19, shows some aspects of the crisis that turned out to be a business opportunity.

As already stipulated, one of the most important features of the papers in this special issue is that they incorporate quantitative and qualitative data and other information gathered in the field that reflect aspects of the situation at specific moments. The survey conducted by Jelena Duh, Aleksandra Pikić and Lucija Ašler on academic and special libraries in Croatia and their crisis preparedness resulted in valuable data regarding the importance of risk

management, strategic planning and preventive conservation effected through the collaboration among conservator-restorers and librarians. The challenges of overlapping crises are elaborated in the paper by Irena Šimić, Lina Šojat, Magdalena Blažić and Filip Kartelo which discusses the case of the Library of the Institute of Art History in Zagreb where, in addition to the Covid-19 crisis, the library was damaged in the earthquake and flooding. This paper also points to the value of volunteers and their immediate help in response to the crisis. Volunteering in the cultural sector in the context of crisis preparedness and response is a general topic that will likely develop even further given the global challenges precipitated by the Covid-19 pandemic, the tremendous damage to cultural heritage caused by the war in Ukraine, and, in the Croatian context, two major earthquakes. The European Union, as well as Croatia (since 2007), have adopted regulations regarding volunteering and, as already noted, the inclusion of volunteers and community members in the cultural sector is of immense importance. Antonija Ujević's contribution reports on volunteers' actions after the last earthquake in Norcia in Italy when European Solidarity Corps and young volunteers helped in conservation-restoration works as well as with cultural initiatives to promote community healing.

Finally, it should be noted that the idea for the conference on Solidarity in Culture: Heritage Protection under Conditions of Crisis, was first proposed by dr. sc. Dragica Krstić, the Head of the Department of Preservation and Storage in the National and University Library in Zagreb at the time. The aim was to gather experts from various disciplines to discuss the issues of solidarity, cultural heritage under threat or affected by the crisis, and the value of intersectoral and interdisciplinary approaches. Therefore, in line with that vision, the aim of this special issue is to introduce these issues from various national and local contexts to the readers who wish to gain insights into the complex area of cultural heritage protection.

In Zagreb, June 3, 2022

Guest Editor
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Risk management for cultural heritage

RIZIK – a risk management survey for Croatian museums geared towards the better assessment, prevention and reduction of risk

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Abstract

Purpose. The aim of the survey on risk management in Croatian museums was to collect comprehensive data on the preparedness of Croatian cultural organisations for various risks in order to better assess, prevent and reduce risks.
Approach and methodology. Against the background of the devastating damage caused by the March 2020 earthquake to cultural heritage in Zagreb, Croatia, the International Institute for the Restoration of Historical and Artistic Works, IIC-Croatian Group, conducted a national survey under the name of RIZIK. The online survey included 73 questions divided into four categories: general information about the institution, the property including buildings and collections, followed by questions on finances and audience. Questions on safety and regular maintenance, work and business plans, essential emergency services in case of danger, possible hazards and risks affecting the buildings and the collection, along

with questions on measures that can help prevent or minimise risks and damage to the collection, the building, staff, and visitors, are part of the survey.
Findings. As many as 188 museums were invited to participate in the survey, more than 100 responded, although some answered the questions only partially. This paper shows a cross-section of the general situation in Croatian museums, addresses the problem of modernising exhibition and depository spaces, describes the idea behind the survey, and discusses its results and possibilities for enhancement.
Originality/value. The RIZIK survey is the first risk management survey sent to all museum institutions in the Republic of Croatia. The collected data are an important first insight into the current state and standards in Croatian museums, galleries and collections. Based on the results obtained, the survey participants can identify areas where they can strengthen or change their work practices, organisation and further planning.

KEYWORDS: cultural heritage, earthquake damage, long-term prevention, risk assessment survey

1. Introduction

We work with and are responsible for our common cultural heritage, which we develop and preserve for the future through the conscientious use of heritage collections. In this work, we spread awareness of our cultural heritage on the one hand and increase its value on the other. It is essential to ensure that there is no loss of value and materials, or at least to minimise such loss as much as possible (Brokerhof, Ankersmit, and Ligterink 2016; Pedersoli, Antomarchi, and Michalski 2016; Will and Meier 2007).
Cultural heritage management and outreach means making the right decisions on investment priorities, resource allocation, and minimising all kinds of risks. Risks can manifest themselves in the form of mild continuous processes whose effects are not immediately noticeable. However, they can also be catastrophic events that lead to devastating damage. By identifying and assessing risks in the form of harmful events or processes and their consequences, we can make a major contribution to the long-term preservation of our cultural heritage (Rose, Hawks, and Waller 2019).
A professional, structured and well-documented approach to risk identification is important for every cultural institution (Waller 1994, 2019; Soley 2017; Pedersoli, Antomarchi, and Michalski 2016). An innovative method of providing concise practical information on how to protect collections in emergencies was the invention of a simple paper-based tool called the Emergency Response and Salvage Wheel, in the 1990s.
Various categories are used to describe and classify risks and change factors in cultural property. These categories are based on the probability, frequency, or progression of the hazard. Specific risks need to be defined broadly enough to cover the full range of individual risks, but also clearly enough to allow for quantification. Furthermore, a single risk, such as physical damage to organic materials, may be influenced by many general risks, such as sporadic or continuous exposure to pollutants, continuous exposure to adverse temperatures and adverse relative humidity (Brokerhof et al. 2005; Ryhl-Svendsen and Thickett 1971). The collections of many museums contain substances which pose a potential chemi-

cal hazard; they usually occur either in a pure form or as a component in a mixture and need to be assessed separately. Separate measures usually also need to be considered for such substances (Ljubić Tobisch 2016).

On March 22, 2020, an earthquake measuring 5.5 on the Richter scale hit Zagreb and its surroundings (Figures 1-2). It caused significant damage not only to historical buildings, but also to small and mid-sized objects in both indoor and outdoor collections (Pavić 2020; Podany 2020; Damjanović 2020, 2021). Immediately after this natural disaster, the International Institute for Conservation of Historic and Artistic Works - Croatian Group (IIC-Croatian Group) supported several initiatives for damage assessment and structured management of the earthquake damage. Colleagues around the world were shocked by the images taken in museums and churches, where enormous damage was revealed not only to the buildings, but also to museum and church inventories (Podany 2017).

In the protection of objects, especially from natural disasters, object-adapted displays in exhibition rooms and appropriate showcases play a significant role (Henderson and Nakamoto 2016). Although few museums in Croatia are housed in a purpose-built building, it is important to mention that the right choice of building technology, materials, and storage systems, as well as the proper application of these elements, can have a significant impact.

Heritage collections require the development of suitable and affordable solutions for the preservation of the majority of objects, and the development of special solutions for the preservation of the most at-risk objects with specific needs. Many guidelines for a healthy environment with extensive information on optimal technical and climate conditions based on both scientific research and the personal experience of professionals have been developed for many years (Poggendorf 2010; Michalski 1990; Prislan, Cerar, and Zivkovic 2014). Regular maintenance, personal care, and our sense of responsibility for cultural assets are decisive in long-term preservation as well. The specific aspects of object behaviour - singly, in homogeneous or in heterogeneous object groups - should be considered in the development of individual, risk-reducing strategies for small and large museum institutions.

Figure 1. *Museum staff evacuating and packing objects after the earthquake* (Source: Museum of Contemporary Art in Zagreb documentation)

Figure 2. *Conservator assessing the condition of artefacts after the earthquake* (Source: Museum of Contemporary Art in Zagreb documentation)

1.1. RIZIK survey distributed to museums

After the devastating damage caused to cultural heritage in Zagreb, Croatia, by the March 2020 earthquake, the International Institute for the Restoration of Historical and Artistic Works IIC-Croatian Group designed a national survey called RIZIK and distributed it to the museums (Figure 3). The aim of the survey was to collect comprehensive data on the preparedness of Croatian cultural organisations for various risks (Prislan, Cerar and Zivkovic 2014; Trust 2012).
The RIZIK survey provides an opportunity for museum directors, curators, conservators and responsible staff in libraries, archives, and other cultural heritage institutions to evaluate their awareness of potential risks and their organisation's preparedness for these risks. By taking part in the RIZIK survey, an institution profile can be created. The profile will highlight the areas that demonstrate good awareness and organisation and those where

Figure 3. *The cover image of the RIZIK survey* (Source: Valentina Ljubić Tobisch, Maja Curman)

improvements need to be made. Furthermore, RIZIK provides guidelines that help to develop better awareness and strategies for dealing with risks resulting from the everyday operation of museums.

The purpose of the RIZIK survey is to collect, for the first time, information on awareness, readiness, and preparedness for the particular risks that cultural institutions face across Croatia. The data will form a basis for compiling a statistical overview of the current conditions across the country.

In the event of a disaster, but also in the case of lesser hazards and risks, staff should be able to act quickly to limit the damage to collections, address the cause of the emergency, stabilise the environment, assess the extent of the resulting damage, and salvage and stabilise damaged or endangered objects (Canadian Conservation Institute 1995). The results of the survey will be used as a basis for further studies, development, and work on improving the risk-prevention system, especially in high-risk areas.

2. Recognising risks and finding safety solutions

The influence of conservators on the objects in heritage institutions is not limited only to conservation measures directly applied to the materials themselves. It goes beyond conservation treatments and includes a great deal of planning, monitoring, and foresight (Ashley-Smith, 1999). Numerous preventive activities are also part of their responsibilities. When confronted with emergency situations, it is extremely important to be prepared to act promptly and according to a pre-designed plan.

Croatian museums are mostly situated in buildings that were not built specifically with this purpose in mind. Consequently, these museum buildings require a certain re-adjustment in order to ensure the desired conditions, which include a safe environment for people and collections. To accomplish this goal, it is necessary to invest time, effort, and money. Experience has shown that even the small number of museums that are located in purpose-built buildings should invest more in risk prevention, and that the most common reason for not doing so is the lack of financial resources. However, it has been shown that even a small increase in the efforts and funding invested in risk protection leads to a considerable improvement. Investing in risk assessment and risk management is sometimes expensive at the beginning, but cost-effective in the long run. It enables long-term protection, the feeling of safety and economical maintenance for a long time. A secure building means a safer collection as well, but in order to ensure maximal protection it is important to understand the specific needs of the different objects, both individually and within the storage or exhibition space. A collection survey with the aim of understanding the critical and most fragile points of the collection requires a detailed investigation and its findings would lead to significant safety improvements. It is time-consuming and involves the participation of different museum professionals mostly occupied in a wide variety of tasks, but it is worth paying attention to this segment of management.

According to some studies, there are two kinds of risk: manageable risk and pure risk (Brokerhof et al. 2016; Griffith 1994; Rose et al. 2019; Waller 2019, 1994). Pure risk refers to risks which cannot reasonably be avoided or diminished (for example, a visitor falling and sustaining an injury in the museum). Manageable risk, on the other hand, can and should

Figure 4. *The Kožarić Atelier after the earthquake* (Source: Museum of Contemporary Art in Zagreb documentation)

be reduced as much as possible. This includes natural disasters such as earthquakes, fires, floods, tornados, damage caused by people (vandalism or theft, for instance), and neglect on the part of custodians. Most of the potential risks are the result of the environment and inappropriate manipulation or treatment.

For example, the effects of the earthquake in the Kožarić Atelier, a part of the permanent display in the Museum of Contemporary Art in Zagreb, taught us a very simple but important lesson. Since the Atelier has a dynamic life, in keeping with the artist's concept, with objects changing position on the shelves or being replaced with Kožarić's other artworks and moved to the museum's storage, some of them were not fixed with museum wax immediately after the changes were made. Then the earthquake struck the city. Five artworks out of the thousand on display fell to the floor and suffered serious damage (Figure 4). A method of protection as simple and cheap as applying museum wax saved all the artworks except for five works made of plaster. In many cases, the solution is neither expensive nor complicated.

3. Methodology

3.1. Concept of the RIZIK survey

To better understand the circumstances concerning risk management in Croatian museums, IIC-Croatian Group designed and conducted an online survey. This is the first comprehensive risk study on the general state, challenges, and preparedness for multiple risks in Croatian museums and their repositories. The study, entitled RIZIK, was sent as an online questionnaire to all museums in Croatia, except private and liturgical collections. A total of 188 collections and sub-collections with their own sites were contacted, although in some cases they have an organisational affiliation. The intention was to collect data for each museum site separately, because technical and exhibition conditions often differ between the main building and the additional sites if the institution covers several locations.

The survey consisted of 73 questions divided into four categories: general information about

the institution, the property including buildings and collections, followed by questions on finances and audience. Due to the physical, social, and political environment, all the four areas are exposed to various kinds of risks. These are broad categories within a complex structure of interconnected factors, and some overlap between categories is inevitable.
RIZIK also raises several basic questions about planning, policies, and procedures within an organisation, some of them leading on to more detailed questions about the institution's working system. At the first level, the questions are grouped in four areas covering important elements of the organisation and its business. In addition to natural disasters and a range of potentially unsatisfactory conditions, risks also include finances and management, as these dictate the application of optimal conditions and standards of care for the collections. Finally, the visitors, whose opinion and satisfaction provide another opportunity for improvement, are also represented in the survey with a set of questions.

3.1.1. Form of the RIZK questionnaire

The RIZIK questionnaire asks about the work system in a particular organisation, grouped in four important fields. Conceivable risk issues include physical violence, fire, earthquake, water, vandalism or theft, pests, contamination, light/UV, incorrect temperature, incorrect relative humidity, and loss, storage, and display situations. Accordingly, all the categories should be considered when designing an institution's risk assessment and prevention strategy.
However, as has already been said, the safety of an institution and its staff are not only under threat from a natural disaster and unsatisfactory conditions for people and collections. Financial management and number of visitors also play an important role in a risk-management strategy. In accordance with the above, the questionnaire included questions about:
The institution – basic information about the institution which, in addition to information on the name, address, etc., includes information on the founder / financier, legal status, and position of the person completing the questionnaire.
Assets – this includes the physical segment, such as buildings and collections, and the less tangible segment, such as information and intellectual resources, as a basis of the institution's operations and identity.
These questions relate to the maintenance of the building and all the spaces inside it in terms of upkeep, checking alarms and alarm systems, analysis and organisation of collections and storage by type of material and position, to intellectual property and education for increasing the professional competencies of staff.
Finances – the necessary balance between income and expenses.
This area includes the business plan, fund raising, own revenues and expenditure control.
Audience – people whose opinions and choices affect the success of the institution. The audience also influences the work of an institution, and museums are intended for the public, so it is important that the institution responds to expectations and examines visitor satisfaction. This area includes manner of communicating with the public, advertising programmes and monitoring quality and results as well as the safety of museum visitors. Attendance is also a revenue-generating segment.
The RIZIK online questionnaire was sent to 188 institutions in the Republic of Croatia. They were invited to fill it in anonymously, which entitled them to be informed about the final results. This offered insight into the general situation in museums, as well as an opportunity to determine their own position in the broader context and in comparison to other museums.

4. Results

Out of the 188 institution that were addressed and invited to take part in the RIZIK survey, just over 100 participated; 73 institutions fully responded (Chart 1). It is important to add that a large number of institutions began to fill in the questionnaire but gave up after a time, and the questionnaire was not designed to be continued once the program had been left. This taught us that it is important to state right at the beginning how long it will take to fill in the questionnaire and to enable subsequently returning to complete the questionnaire. The responses received are an approximate indicator of the current situation and standards in Croatian museums, galleries and collections. The data obtained demonstrate that risk assessments for museum premises, such as exhibition spaces, workshops and storage facilities, have only been carried out in one quarter of the institutions, 26% (Chart 2). In areas where there is a significant risk of flooding, only 8% of the institutions considered special measures in an emergency plan for this genuine natural threat (Chart 3). In environments with significant earthquake risk, 5% of the total number of institutions that participated in the survey included special measures in their emergency plan (Chart 4). A larger proportion of all the institutions – 32% – reported having a building maintenance plan in place, and 33% reported revising existing building maintenance plans or plans to revise them within the coming 5 years.

4.1. Analysis of survey results

Only 13% of the institutions that fully completed the survey had carried out a risk assessment for their collections, but there are slightly more priority action plans to reduce existing risks for collections, with an overall rate of 20%. Only half of the museums have appointed a person officially responsible for the professional storage and management of the objects not on display. The museums also indicate that on average slightly less than half of the objects, 47%, are visibly marked with an inventory number. Only 30% of the museums report using laminated and safety glass exclusively. All the other museums still use plain glass or are equipped with old display cases that are made of plain window glass and have not been modernised. In all the institutions, great emphasis is placed on possible damage to different types of materials caused by unsuitable climate conditions and light. Meanwhile, institutions' intellectual property risk assessment and copyright and data protection plans are carried out in only a small number of institutions (Chart 5).

The results of the RIZIK survey suggest, that in the field of cultural-heritage preservation and management, there is a need and potential for improvement in all areas for both protection of buildings and organisation. According to the results obtained, survey participants can identify areas where they can improve or change their approach to work, organisation, and planning. New areas that may have seemed simpler and less important, such as securing, funding, and maintaining their own facilities, may now emerge as vital.

The survey-generated data were anonymously analysed for the purpose of statistically determining the situation and risk awareness within cultural heritage institutions in Croatia. The names of the participating institutions will not be published. The results were forwarded to the Ministry of Culture and Media of the Republic of Croatia (MKM) and the Museum Documentation Centre (MDC), which is involved in the systematic collecting, recording,

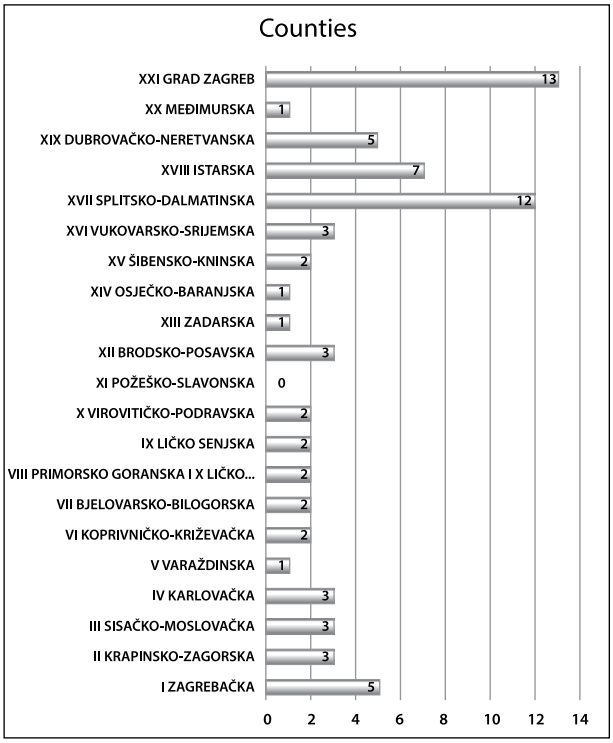

Chart 1. *Responses from participating institutions by county*

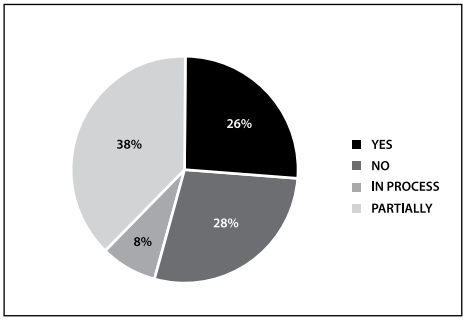

Chart 2. *Conduct of risk management studies for museum premises in the participating institutions*

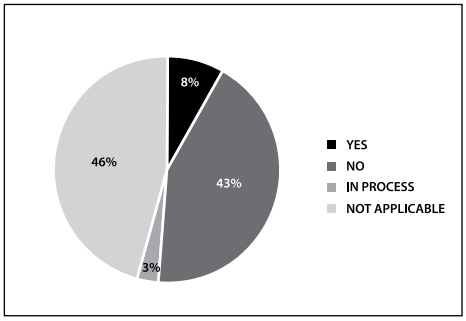

Chart 3. *Consideration of special emergency measures in regions with a significant risk of flooding*

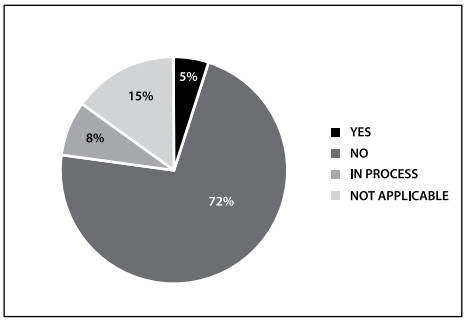

Chart 4. *Consideration of special emergency measures in regions with a high risk of earthquakes*

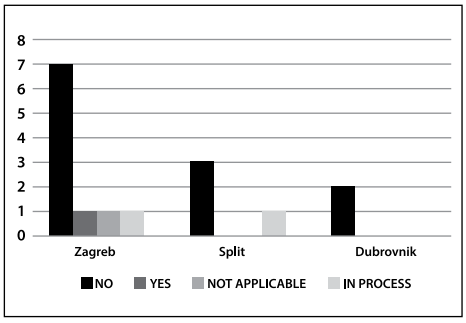

Chart 5. *Risk assessment for the intellectual property of the institution*

and cataloguing of material relating to museum development and activities. Both the MKM and MDC read the questionnaire in advance and approved it. The data were also forwarded to all participating museums in the form of a final report so that museum managers can get an insight into the general situation in similar institutions and the status of their organisation in terms of risk management.

5. Discussion

The first risk-management survey in Croatia was designed, implemented and evaluated by the IIC-Croatian Group. One of the disadvantages that became apparent during the study was that the survey was not sent directly to the museums by an official supervisory body such as the MKM or the MDC, although the project had their full official support. This would have increased the museums' participation in the study. Hence, the participation in the survey was on a voluntary basis. Nevertheless, the survey results provided a comprehensive reflection of risk preparedness in Croatian heritage institutions.

The RIZIK survey was designed as a complex questionnaire divided into four main thematic groups, with some of the questions developed in detail. It was intended for all, from very small, to medium and large museums. A side effect of the survey was to provide professional support, especially to museums with limited staff and thus fewer experts. In a customised risk-management study prepared for a specific institution, the questions could have been framed more succinctly. One part of the survey was based on previous risk-management studies; the other part was formulated on the basis of the damage and omissions in various collections that became visible after the earthquake in Zagreb in March 2020.

In many cases there are only enough financial resources available for the exhibition set-up, but there is often lack of funding for the appropriate depots, storage, safeguarding and long-term preservation of the parts of collections that are not exhibited. Museum management is mainly willing to finance the activities that are to be seen and exhibited in order to strengthen the museum's presence in the public eye. Objects that remain invisible often receive much less attention.

Simple actions can often result in an enormous improvement and increase in safety. For instance, shelves and dividers made of plain glass should be completely replaced by tempered or laminated glass, as they are responsible for most of the damage from vibrations (such as earthquakes). Measures such as carefully considered storage systems, clear allocation of spaces either for storing collection objects or furniture and other belongings, consistent and clearly visible labelling of storage units and objects, securing objects from sliding or tipping over, placing heavy and large objects in the lower storage units, but also regular hygienic maintenance and checking for pest infestation can all contribute enormously to the long-term preservation of cultural property.

The object of this survey was to get a credible view of the general situation of risk management in Croatian museums. The effects of the earthquake, which caused significant damage to cultural heritage, showed that risk management is an extremely important segment of museum activity. As Croatia is largely located in an earthquake belt, seismologists foresee the possibility of new earthquakes and past experience has taught us that we must be prepared.

6. Conclusion

A number of factors determine and influence the needs and working methods concerning museum collections. Each of them, with their spatial, personnel and financial difficulties, must be considered individually. People cannot change geographical location, with all its conceivable natural hazards. However, awareness of climate change must grow urgently and each of us should take responsibility for it, as without the planet, there is no cultural heritage. If we know the risks well, we can prepare ourselves and respond in the best possible manner in case of an emergency. The need for improvement of storage solutions as well as the need for gradual enhancement of preventive measures in storage and exhibition spaces is very evident from the results of the RIZIK survey. As demonstrated after the earthquake in Zagreb and in Sisak, nine months after, some simple actions and solutions can prevent damage and protect collections. These are not necessarily associated with a large financial investment. On the one hand, even simple safety measures, individually considered and consistently implemented for each object, can prevent a great deal of damage when, for example, creating displays at exhibitions. On the other hand, for natural disasters such as floods or earthquakes - especially if the geographical location clearly indicates a high-risk area - plans can be drawn up in cooperation with the fire services or civil protection, to name just some possibilities.

As a conclusion of the RIZIK survey, bearing in mind the current state of preparedness of individual institutions for risks, the construction of a central depot for multiple museums seems worth considering. One of the advantages of a well-thought-out depot in terms of building technology and professional expertise would be that each individual museum would not have to invest time, resources and money in the same considerations. With a central depot, many precautionary and safety measures could be addressed and implemented only once. The management of this depot would be in the hands of one team. Preventive measures relating to pest monitoring, climate values, delivery areas, handling of hazardous materials, loan traffic and other art transports could be handled much more easily, cheaply and safely in a central depot. Many basement and attic areas unsuitable for object storage could be cleared out and objects moved to safety. Placing this depot in a building of low-energy quality or even passive-house quality would not only save costs and provide long-term safety for cultural assets but would also contribute to a healthier environment.

Acknowledgements

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Sažetak

RIZIK – anketno istraživanje o upravljanju rizicima u hrvatskim muzejima u svrhu bolje procjene, prevencije i smanjenja rizika

Cilj. Cilj anketnog istraživanja o upravljanju rizicima u hrvatskim muzejima bio je prikupljanje sveobuhvatnih podataka o spremnosti hrvatskih kulturnih institucija na različite vrste rizika u svrhu bolje procjene, prevencije i smanjenja rizika.

Pristup i metodologija. Nakon razornih šteta koje je potres u ožujku 2020. prouzročio na kulturnoj baštini u Zagrebu, Međunarodni institut za restauraciju povijesnih i umjetničkih djela, IIC – Hrvatska grupa, proveo je nacionalno istraživanje pod nazivom RIZIK. Mrežna anketa sastojala se od 73 pitanja podijeljena u četiri kategorije: opće informacije o instituciji, o imovini, uključujući građevinu u kojoj su smješteni muzej i zbirke te pitanja o financijama i posjetiteljima. Sastavni dio ankete činila su pitanja o sigurnosti i redovitom održavanju muzejskih prostora, radnim i poslovnim planovima, hitnim službama u slučaju opasnosti, mogućim opasnostima i rizicima koji utječu na građevinsku imovinu i zbirku, kao i pitanja o mjerama koje mogu pomoći u sprječavanju ili smanjenju rizika i štete na zbirkama, građevinskoj imovini, osoblju i posjetiteljima.

Rezultati. Ukupno 188 muzeja pozvano je na sudjelovanje u anketi, a odgovorilo ih je više od 100 premda su neki na pitanja odgovorili samo djelomično. Ovaj rad prikazuje presjek općeg stanja u hrvatskim muzejima, bavi se problemom modernizacije izložbenih prostora i čuvaonica, opisuje ideju istraživanja putem ankete RIZIK te razmatra rezultate ankete i mogućnosti unapređenja.

Originalnost/vrijednost. Anketa RIZIK prvo je anketno istraživanje na temu upravljanja rizicima upućeno svim muzejima na području Republike Hrvatske. Prikupljeni su podaci okvirni pokazatelj trenutačnog stanja i standarda koji se primjenjuju u hrvatskim muzejima, galerijama i zbirkama. Sudionici ankete na osnovu dobivenih rezultata mogu identificirati područja u kojima postoji prostor za unapređenje ili promjenu pristupa radu, organizaciji i daljnjem planiranju.

KLJUČNE RIJEČI: dugoročna zaštita, kulturna baština, procjena rizika, šteta uzrokovana potresom

Harnessing indigenous knowledge in disaster risk management in Aotearoa New Zealand

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Abstract

Purpose. This paper will provide an insight into understanding of risks and cultural heritage by local and indigenous communities, as well as their knowledge, values and practices informing the perception of disaster risk management. The aim is to contribute to the implementation of Community Based Disaster Risk Management (CBDRM), which leads to a locally appropriate and locally "owned" strategy for disaster risk management.
Approach. The paper presents experiences in disaster response by local communities in New Zealand Aotearoa and consequent shift in the perspective towards disaster risk management which needs to be reflected in cultural heritage field. Disaster risk management plans can be understood as series of written policies and procedures that prevent or minimize damage resulting from disasters, tailored to a museum's, library's, archives or community's specific circumstances and facilities. Having a disaster management plan is not an end result, in itself. The process of creating, implementing, and updating a plan can be far more important and beneficial to an institution or community.
Value. At-risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capabilities. This means people are at the heart of decision-making and implementation of disaster risk management activities. This aligns with a paradigm shift in disas-

ter management from having management agencies as the primary actors, towards wider and deeper stakeholder involvement, especially in the private sector with local level actors.

KEYWORDS: community based disaster risk management (CBDRM), disaster planning for cultural heritage, indigenous knowledge

1. Introduction

Ko te wehenga o Ranginui rāua ko Papatūānuku. Ka puta ki te whai Ao, ki te Ao mārama.

From the separation of [Ranginui] the sky father and [Papatūānuku], the earth mother, first light burst upon the world, and from it came a well-spring of knowledge and understanding.

The creation story of Ranginui and Papatūānuku is a representation of a Māori view of the world – it illustrates an understanding of the environment and through their off-spring, an understanding of the origin of risks.

Each of their children are *ātua* [deities] who govern life in the natural world and are the foundations of *Mātauranga Māori* or Māori knowledge. One of these is Rūaumoko - yet to be born or newly born child representing earthquakes and volcanoes. There are many stories of Rūaumoko - the shaking of the lands is a result of Rūaumoko kicking and moving around; volcanic eruptions are his mother's feeling of unwellness. Geothermal unrest is considered the first sign that Rūaumoko is restless.

People, creatures, and the environment that supports them are considered an extended family. *Whakapapa* is the Māori term for genealogy - a knowledge system that enables Māori to realise their connections. Maintaining relationships is important to maintaining mauri or the vitality of people, creatures, and the natural environment. Knowledge of the natural world, including risks, is passed on through *whakapapa, pūrākau* [stories], *waiata* [songs] and place names.

In 1840, *Te Tiriti o Waitangi*/ The Treaty of Waitangi, was signed by the British Crown and Māori chiefs. The Treaty has two texts – one in the Māori language and one in English. Among other things, the Māori language Te Tiriti promises to uphold the authority of tribes over their *taonga katoa*.

Taonga is defined as treasure, anything prized – applied to anything considered to be of value including socially or cultural valuable objects; resources, phenomena, ideas, and techniques[1] . *Taonga* is used to describe Māori cultural heritage and encompasses physical objects, the natural environment, language, and cultural beliefs.

This paper uses the term *taonga* and cultural heritage to consider disaster risk management context in Aotearoa New Zealand. The paper also considers the change in scope of the term cultural heritage which includes historic cities, living cultural landscapes, gardens, or sacred forests, as well as movable and immoveable items within sites, museums, historic properties and archives and knowledge, beliefs, and value systems (Jigyasu et al. 2013).

In 1975 the Waitangi Tribunal was set up as a permanent commission of inquiry that makes

[1] Also see: Te Aka Māori Dictionary available at maoridictionary.co.nz.

recommendations on claims brought by Māori on alleged breaches of the promises made in Te Tiriti o Waitangi Treaty of Waitangi.

In 1991 WAI262 claim was lodged with the Tribunal about policies and laws that were taking away Māori control over taonga. As noted by historian Paul Hamer the claim concerned much more than treaty rights over native species but went to the very heart of what is involved in maintaining Māori culture and identity. This extends to the Crown's control or funding of *mātauranga* Māori (Māori knowledge) across libraries, archives and museums, the regime governing protected objects, education, the arts, broadcasting, and research science (Hamer 2016).

An understanding of *taonga*, as outlined in Article Two of Te Tiriti o Waitangi/Treaty of Waitangi and understood by Māori could provide a more nuanced disaster risk management framework for cultural heritage organisations in Aotearoa New Zealand.

The role of Māori knowledge or *mātauranga* Māori is outlined in King et al. 2007 and they argue for considering this knowledge in hazard identification and management and prevention, while research of Aotearoa New Zealand Community-led disaster management responses draws on the Christchurch earthquakes of 2010 and 2011, and research led by Dr Christine Kenney, Professor of Disaster Risk Reduction, Massey University. Her work with indigenous communities has been internationally recognised as best practice science.

Iwi created disaster risk management publications relate more specifically to environmental resource management issues or climate change policies. While not directly related to disaster risk management, the plans often outline information relating to cultural values and consultation, engagement protocols for resource consents and monitoring, plan changes and matters of significance for the local indigenous population. Examples include the Ngāti Hine Iwi Environmental management plan 2008[2], Te Arawa Lakes Trust Climate Change Strategy[3] and Ngai Tahu Climate Change Strategy[4].

There are very few published examples of collaborative projects between *iwi* and Government on risk reduction initiatives specifically for Māori cultural heritage or taonga. A publication produced in 2003 by Heritage New Zealand Pouhere Taonga and New Zealand Fire Service (now New Zealand Fire Safety) is one example.

A recent project by the University of Auckland led by two Te Arawa descendants examined the readiness of 16 Te Arawa *marae* to deal with the impact of a natural disaster finding them *moderately resilient*.[5]

Increasingly, *marae* become the place of safety for communities' post-disaster. Hudson and Hughes (2007) undertook a case study of a *marae* and Māori communities in the Manawatū during the floods of 2004. The intended outcome was to provide research-based evidence to inform emergency management policy and planning development.

[2] For more information see: ngati-hine-iwi-environmental-management-plan-2008.pdf (nrc.govt.nz).

[3] For more information see: Te Ara ki Kōpū | Te Arawa Climate Change Strategy | Te Arawa Lakes Trust.

[4] For more information see: https://ngaitahu.iwi.nz/environment/policy/climate-change-strategy/.

[5] For more information see: Iwi's resilience to climate change | Ministry for the Environment.

2. An Aotearoa New Zealand context and disaster risk management challenges

Whiria te tangata, ka puta te oranga.

Weaving the people together ensures well-being.

Māori perspectives on risk are holistic in that there is no separation of the physical and spiritual world. Disaster risk management approaches need to consider the *pūrākau* that weave together our understanding of the natural world, our place in it and in turn how we understand and care for one another and our cultural heritage. Furthermore, storytelling has always been one of the key ways knowledge was sustained and protected within Indigenous communities (Lee 2009). Dr Daniel Hikuroa, Senior Lecturer in Māori Studies at the University of Auckland provides an example of how risk is codified in *pūrākau*:

> Like other cultures, Māori have serpent or dragon-like creatures called *taniwha*. *Taniwha* can be both guardians and warnings. A *pūrākau* from the Eastern Bay of Plenty describes the Waitepuru Stream as a *taniwha* who flicks its tail from side to side. For Hikuroa (2017) the presence of a *taniwha* is precautionary and suggests that there is danger associated with the stream.

After large flood events, the low-lying sections of Waitepuru stream often change course moving back and forth from side to side - the metaphor of the *taniwha's* flicking tail starts to make sense.

In 2005, flash floods sent debris down the Waitepuru stream, and it once again shifted course. Many buildings in the Bay of Plenty town of Matatā were made uninhabitable, but none of the three *marae* were affected because of their chosen location (Figure 1). The *marae* is the principle communal space that belongs to a particular *iwi* (tribe) and *hapū* (sub tribe). It is a place of ancestral history and knowledge and a place that can provide social and cultural support for communities impacted by disasters. For Hikuroa this was not by chance. Hikuroa explains how there are literal and metaphorical strands to the story: the *pūrākau* intertwines and codifies knowledge about both geomorphology (landforms) and disaster risk reduction.

The indigenous Māori people of Aotearoa New Zealand have applied traditional knowledge, values, and practices to address disaster-related risks and community recovery during disasters throughout their history. Recent examples of Māori cultural factors facilitating disaster risk management include the response to the Christchurch earthquakes in 2010 and 2011 and the flooding of the Rangitāiki River which inundated 70% of homes in the Bay of Plenty town of Edgecumbe in 2017.

Furthermore, *marae* have played a key role in the community response to natural disasters and civil defence emergencies. Following the 2016 earthquakes in Kaikoura, Takahanga *marae* demonstrated the concept of *whakapapa*, by opening and feeding the community, providing shelter and support to all. Within that it is the recognition that the collective well-being of the community is critical to its recovery.

Qualitative research on Māori response to the earthquakes provided evidence that local Māori responded effectively to facilitate community recovery and resilience. It argued that the knowledge, principles and practices embedded within Māori responses to the Christchurch

Figure 1. *Debris and damaged houses following the 2005 Matatā debris flow* (Source: Chappell 2013)

earthquakes may be contextually relevant for national and regional policy development in the area of disaster risk management, response and recovery: "[...] risk management initiatives were collaborative, effective and shaped by *kaupapa* (cultural values), specifically the value, the core principle *aroha nui ki te tangata* (extend love to all people)" (Kinney and Phibbs 2015; Phibbs 2015). Christchurch and Edgecumbe provide evidence that the communities, local authorities, and civil society groups have the resources and capacities to deal with disasters, i.e., indigenous knowledge, policies, disaster reduction programs, technical institutions, machinery and equipment, and social networks. These examples show also that nobody can understand local opportunities and constraints better than the local communities themselves. The article *Ngā Mōwaho: an analysis of Māori responses to the Christchurch earthquakes,* published in 2015, illustrates quite clearly the fallibility of the formal disaster management infrastructure stemming from a lack of understanding of the nuanced, complex, systemic, and local context of a situation. This resulted in difficulties integrating Māori volunteers into the mainstream response which created a sense of isolation and exclusion of the communities during those events (Phibbs 2015). In both cases the relationships [between formal disaster management infrastructure and community] and communication issues resulted in marginalisation of Māori cultural factors. There were enduring barriers to Māori engagement within Civil Defence, illustrated by the lack of Māori representation and tikanga Māori within disaster planning.

3. Paradigm shift in disaster management in Aotearoa New Zealand

The discourse of disaster management has undergone significant change in recent years, shifting from relief and response to disaster risk reduction (DRR) and community-based management (Lattig 2012). Organisations and vulnerable countries which practice DRR

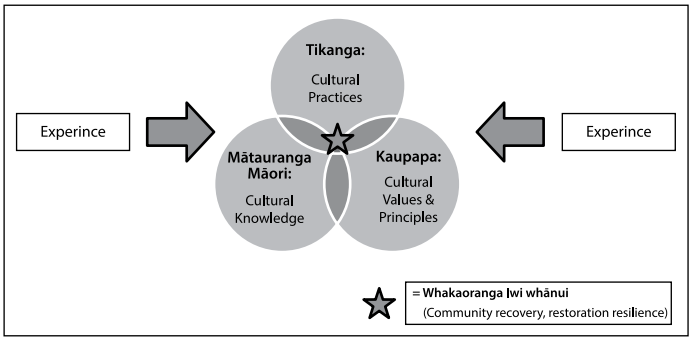
have moved from a reactive, top-down model to proactive, community-focused disaster management. This shift relates to how risks are framed, the main policy tools dealing with these risks, the required knowledge, the main actors, and the multilateral goals related to addressing these risks. In addition, case studies from the Asia and Pacific region suggest that traditional, indigenous knowledge are invaluable for effective community-led responses to natural hazards (Critical guidelines. Community-based Disaster Risk Management 2006; Shaw 2016). Finally, it is recognised that Māori and other approaches to cultural heritage disaster risk management differ in their motivation and extent.

Resilience to Nature's challenges Kia manawaroa - Ngā Ākina o Te Ao Tūroa (2015), a 10-year programme launched in Aotearoa New Zealand, aims to enhance New Zealand's resilience to natural disasters. This includes developing Māori-specific tools and using community-centred approaches to build resilience and enhance *kaitiakitanga* [guardianship] or stewardship of the places that are special to communities.

Furthermore, the concept and application of the term *whakaoranga* for disaster resilience was developed in the *National Science Challenge Resilience to Nature's Challenges' research project: Whakaoranga marae* and included in *National Disaster Resilience Strategy Rautaki ā-Motu Manawaroa Aituā* (2019). The Strategy is informed by policy and practice across key sectors of society and promotes resilient practices in each of these sectors. It considers the value of Māori *kaupapa*-based technologies for shaping contextually relevant disaster risk management strategies (Graph 1).

The *whakaoranga* process is underpinned by *kaupapa* Māori (cultural values), informed by *mātauranga* Māori (cultural knowledge and science) and carried out as *tikanga* Māori (cultural practices). *Tikanga* are related to cultural identity and expression, they are ethical and values-based and imply accountability and transparency. These cultural attributes interact to create community and environmental resilience in the context of disasters. It is important to note that it encompasses all communities and parts of New Zealand impacted by disasters (Graph 2).

Graph 1. *The policy context of the National Disaster Resilience Strategy* (Source: National Disaster Resilience Strategy Rautaki ā-Motu Manawaroa Aituā 2019)



Graph 2. *Conceptualisation of a Māori Cultural Technologies Approach to Disaster Risk Reduction* (Source: Kenney and Phibbs 2015)

Mātauranga means using scientific, historic, local, and traditional knowledge while striving towards a common understanding. It is also stimulation of communication keeping in mind that diverse groups receive information differently. Based on a long and close association with the land and its resources, Māori have developed an extensive knowledge of local natural hazards (King 2007). This includes oral histories and traditions that record past catastrophic events. Complex information is passed on through stories and reinforced through powerful imagery, including place names that designate high-risk areas, and environmental changes that indicate if activities are safe.

To that end, the qualitative Māori research methodology, *Te Whakamāramatanga*, has shaped community-based project design and implementation (Kinney and Phibbs 2015). The foundational concepts of this methodology include *whakapapa* (genealogy, continuity); *whakawhanaungatanga* (building relationships); *whakarurutanga* (safety), *whakaaetanga* (acceptance, agreement, consent); *whakaritenga* (negotiation); *whakangungu* (protection, advocacy); *whakawhirinaki* (building trust); *whakamana* (empowerment); *ōritetanga* (equity), and *manamotuhake* (autonomy, self-determination). Although the methodology was developed in the health field, current research projects have extended its applicability to the fields of natural hazards, and disaster research.

Climate risk management in Aotearoa New Zealand uses a *whare* [house] model. It is based on the understanding that not all community knowledge is captured in historical data. The *whare* represents not only current knowledge, but wisdom of the past and our evolving understanding of the world, which should inform how we approach (climate) risk and data analysis (Sweeney 2021). The *whare* model provides different starting points to engage with *mātauranga* Māori. These include guidance on collecting information on governance and leadership enhancing data led decision-making and arranging this information. It is considered a model for an integrated *mātauranga* Māori and western approach.

On February 8, 2022 a protest against New Zealand's COVID-19 protection measures took place on the grounds of New Zealand's Parliament. The National Library of New Zealand and Archives New Zealand buildings are situated less than 500 metres from Parliament. The occupation lasted 23 days and the Library and Archive buildings were closed to the public to protect the buildings, staff, and collections (Figure 2).

Managing and responding to the risks posed to buildings, people and collections was overseen by the Department of Internal Affairs Incident Management Team (IMT). Department of Internal Affairs has six branches including Te Tāhuhu Iringa Kōrero – Information and Knowledge Services branch. Within this branch is National Library of New Zealand Te Puna Mātauranga o Aotearoa and Archives New Zealand Te Rua Mahara o e Kāwanatanga.

Figure 2. *The police clash with protesters as they remove tents and camping equipment from the occupation site on Wednesday. National Library of New Zealand building can be seen in the background.* (Source: Parliament protest: The siege might be over, but the propaganda war is just beginning | Stuff. co.nz, photo by Branden Fastier)

The IMT objectives were outlined on Department of Internal Affairs intranet site, 1840:

1. Ensure the safety and wellbeing of our people. This includes kaimahi (staff), customers, visitors and any members of the public who are on and around our sites.
2. Ensure the security and protection for taonga, buildings and infrastructure.
3. Maintain the delivery of services and support for New Zealanders.
4. Maintain our involvement in an all of Government approach/response.

Following the 23-day protest, National Librarian, Rachel Esson, invited staff to participate in a *karakia* (Māori ritual for seeking spiritual guidance and protection).
"We would like to conduct a special *karakia* to synchronize our thoughts and feelings. In doing so, we seek to acknowledge the disruptions affecting each of us in our personal and professional lives. We welcome you all to attend and share your *mauri* (life force) to enhance the *kaupapa* (purpose) and intentions of our *karakia*." (Rachel Esson, 2022, email to National Library of New Zealand staff, 4 March, 2022).
The mauri of people and taonga was articulated and a culturally responsive action taken by the National Librarian.

4. Discussion

Current international disaster risk management models and theoretical frameworks understand that comprehensive disaster risk management plans need to be formulated based on the specific characteristics of cultural heritage and the nature of hazards within a regional context. They need to take into account historic, aesthetic and other values of cultural heritage. At the same time, they need to address regional developmental and social challenges and think about stakeholder and community engagement from the outset. The understanding that it is necessary to enable strategic partnerships and initiatives that bring the knowledge and capacities of communities in the fields of cultural heritage and disaster risk

together, and applying people-centred approach to managing disaster risks on is reflected through different publications and training activities of the International Council on Monuments and Sites (ICOMOS), United Nations Office for Disaster Reduction (UNISDR), (United Nations Educational, Scientific and Cultural Organization) UNESCO, International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and others (Jigyasu 2010; Jigyasu 2011; Jigyasu et. Aal. 2013; Tandon 2018; Higgins and Douglas 2020). However, looking at these models and frameworks from the *whakaoranga* perspective and in the context of Aotearoa New Zealand, it is evident that (with exceptions) they place their emphasis on the existing technical perspectives and understanding of disaster risk management. It is unclear what greater recognition, understanding and integration of *iwi*/Māori perspectives and *tikanga* in disaster risk management – before, during, and after an event would imply.

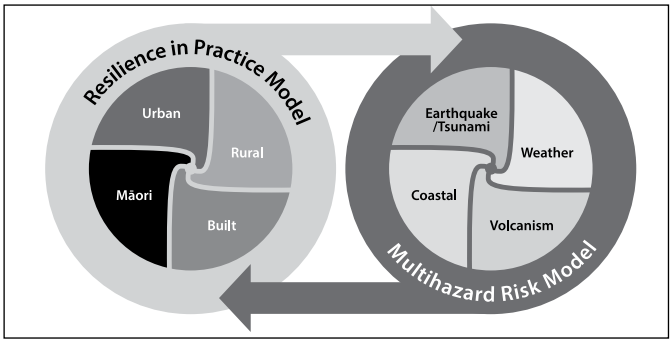
It is also assumed that external agencies: government, non-government organizations, specialists, administrators, and policy makers will initiate and implement community level programs before and after disasters. Their focus is usually on technical areas and data-centric systems, therefore, such initiatives often end once the external support is gone, caused by lack of partnership, participation, empowerment, and ownership by local communities.

In addition, the process of disaster risk planning for cultural heritage requires significant resources to cover all the required elements of a plan, such as a comprehensive risk assessment, assembling and training an emergency team, preparing evacuation routes and emergency signage, the provision of emergency equipment, proposals and protocols for the evacuation of people and salvage of heritage objects, etc.

Nevertheless, the shift to proactive, community-focused disaster management in Aotearoa New Zealand implies the need to understand how Māori disaster response frameworks may innovate and enhance formal disaster management strategies and response mechanisms. *Kaupapa*-based, Māori research reflects a bottom-up approach to disaster risk management requirements. It is designed by and for Māori, addresses Māori concerns, is conducted predominantly by Māori researchers, and is based on Māori cultural values. Starting with *mānaakitanga*, and the core principle of *aroha nui ki te tangata, kotahitanga* [unity] implies engagement, communication, sharing experiences and collaboration. This collective action is a *kaupapa* which, when implemented, reflects the capability of local people to initiate and sustain their own disaster risk management (Graph 3).

Cultural heritage disaster risk management requires a change in perspective from the foundational concepts of the disaster risk management methodology and suggested frameworks. For example, a sample plan for *marae* emergency preparedness suggests that the community has the capacity to become "a team or committee to develop the disaster plan," share their knowledge on the possible impacts of natural disasters and to recognise who the key people that could be called upon in an emergency are. In that sense "outlining emergency response, establishing chain of command and appointing emergency coordinator(s)" is done collaboratively. It is necessary to understand that all communities have vitally important assets to deal with disasters. These include knowledge of disaster warning signs, locally safe and vulnerable areas, experience of past disasters, methods of survival and social relations. Therefore, establishing preventive measures, preparing for disaster, and taking risk management measures are activities attained using risk-based land use planning, and building relationships with the wider community, council and land use and development planners.

The Māori worldview and *tino rangatiratanga*, a values-based leadership implying self-determi-



Graph 3. *The structure of the phase 2 Resilience Challenge* (Source: Resilience to Nature's challenges Kia manawaroa - Ngā Ākina o Te Ao Tūroa 2015)

nation, support the notion that while the role of local government, the private sector and NGOs is important, the primary responsibility of grassroots development lays with local leadership.

5. Conclusion

Policy makers, scientists, and various non-indigenous communities recognize that community involvement in disaster risk management is key to the sustainability of community level initiatives for disaster management. That corresponds to the general elements of the bottom-up approach to community-based disaster risk management which is based on the understanding that local people can initiate and sustain their own community development. Furthermore, the responsibility for change rests with those living in the local community, and repeated community success is a powerful factor in continuing local initiatives. A successful, bottom-up strategy will include broad-based local participation in comprehensive planning and decision-making activities that promote action. The emphasis is on improving the utilization and management of local resources, creating needed educational opportunities, and utilizing outside financial assistance as required. Community members and groups within a community may have different perceptions of the risks and vulnerabilities of their cultural heritage. This is reflected in the recognition that the concept of heritage and what is worth preserving is underpinned by different values and morals. Moreover, it is considered that nobody can understand historic, aesthetic and other values of *taonga*, of cultural heritage than the local communities themselves.
Therefore, there is a necessity to acknowledge that indigenous and community knowledge and practice should become the foundation for developing a site-specific, cultural heritage risk management framework.
For example, Aotearoa New Zealand's national institutions, the National Library of New Zealand, Archives New Zealand; Te Papa Museum of New Zealand are all located in Wellington, very close to Wellington Harbour, Te Whanganui-a-Tara. Story from this area is that the Harbour was formerly a lake cut off from the sea and occupied by two *taniwha* Ngake and Whātaitai. Ngake felt he had outgrown his lake home and thrashed his way out, breaking up the cliffs to form the harbour. Whātaitai was not so keen but followed only to become stuck on the low tide, forever stranded to form the land around what is now Wellington airport.
Are these stories of past disasters? Could these institutions integrate a more people-centred approach to their disaster risk management strategies by working with communities to understand the stories of the places on which the buildings sit and collections reside?

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Sažetak

Tradicionalni sustavi znanja u menadžmentu rizika od katastrofa na Novom Zelandu

Cilj. Planovi za menadžment katastrofama mogu se shvatiti kao niz pisanih smjernica i procedura koje sprječavaju ili umanjuju štetu koja je rezultat katastrofa, prilagođenih specifičnim okolnostima muzeja, knjižnice, arhiva ili lokalne zajednice. Posjedovanje plana menadžmenta katastrofama nije samo po sebi krajnji rezultat. Proces kreiranja, implementacije i ažuriranja plana može biti daleko važniji i korisniji za instituciju ili zajednicu.

Pristup. Zajednice izložene riziku aktivno su angažirane na identifikaciji, analizi, tretmanu, praćenju i procjeni rizika od katastrofa kako bi umanjile svoju ranjivosti i unaprijedile svoje sposobnosti. To znači da su ljudi u središtu donošenja odluka i provođenja aktivnosti menadžmenta rizikom od katastrofa. To je u skladu s promjenom paradigme u području menadžmenta katastrofama i izvanrednim situacijama, od načela da je menadžment organizacije primarni akter, ka široj i dubljoj uključenosti zainteresiranih strana, posebno u privatnom sektoru s akterima na lokalnoj razini.

Vrijednost. Ovaj rad pruža uvid u to kako lokalne i autohtone zajednice sagledavaju rizike i kulturno nasljeđe, kao i uvid u njihovo znanje, vrijednosti i praksu, na kojima se zasniva njihovo poimanje menadžmenta rizika od katastrofa. Cilj je doprinijeti implementaciji menadžmenta rizikom od katastrofa zasnovanog u zajednici (MRKZZ), što vodi lokalno odgovarajućoj i lokalno „posjedovanoj" strategiji za menadžment rizika od katastrofa. Rad će predstaviti iskustva i reagiranje lokalnih zajednica u katastrofama na Novom Zelandu i preokret koji je uslijedio u području menadžmenta rizika, a koji se treba primjenjivati i u području očuvanja kulturnog nasljeđa.

KLJUČNE RIJEČI: menadžment rizikom od katastrofa zasnovan u zajednici (MRKZZ), planiranje u slučaju katastrofe za kulturno nasljeđe, znanje autohtonih zajednica

Familiarizing conservation–restoration students with risk assessment and risk management using outdoor sculptures as case studies

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Abstract

Aim. The paper describes a problem-based learning assignment through which conservation-restoration students become acquainted with the assessment and management of risks to cultural heritage. The assignment includes identification of threats, writing incident scenarios, proposing mitigation measures and identifying persons/institutions that can implement them. All risks are considered in the assignment, not just those related to disasters.

Approach/methodology. In the Introduction section, the concept of risk assessment and the context of the assignment are explained. A short description of objects selected as case studies is provided (three sculptures from the Sisak Steelworks Sculpture Park), as well as basic information about the students who worked on the assignment. Next, all the steps of the assignment are described. The final results are only broadly indicated.

Findings. Seventy-eight different incident scenarios were identified for outdoor sculptures. To help the reader understand the idea behind the assignment, mitigation measures for three incident scenarios are presented, and potential stakeholders listed.

Practical implications. Although the assignment used outdoor sculptures as case studies, it can be applied to any object or collection. The assignment does not have to be included in a preventive conservation course, nor does it have to be directed only to (conservation-restoration) students: it can be used by museum and heritage professionals as a first step in risk assessment for collections.

Originality/value. The topic presented in this paper is not well represented in Croatian

professional literature. The assignment may be considered innovative in the context of the methodology of teaching conservation-restoration at higher education institutions in Croatia.

KEYWORDS: outdoor sculpture, preventive conservation, problem-based learning, risk assessment, Sisak Steelworks Sculpture Park

> *Yes, preventive conservation began with a focus, almost an obsession, on climate and light, and many are still stuck there. I was hired to be just such a specialist, but I was lucky because (...) my CCI [Canadian Conservation Institute] job forced me to make sense of all the issues affecting preservation, not just climate and light.*
>
> Stefan Michalski (Michalski 2016, 4)

1. Introduction

As the opening quote explains, the traditional approach to preventive conservation has been to create an 'ideal' environment by controlling relative humidity, temperature and light. Preventive conservation also includes implementing procedures for proper handling, transport, storage, display and use of an object or a collection. Decisions on preventive conservation actions have traditionally relied on recommendations for specific materials or object types, and on 'best practices'.

A paradigm shift started to emerge in the late 1980s and the early 1990s, when the assessment and management of risk was applied to preventive conservation. For the sake of clarity, the two terms – 'risk assessment' and 'risk management' – need to be explained. The first term designates the process of risk identification, risk analysis, and risk evaluation, while the second term denotes the process whose goal is to minimize risk (Michalski and Pedersoli Jr 2016, 162).[1] The aim of this approach is to consider all issues affecting the preservation of objects, the frequency of their occurrence (or the rate of their action), and their effect, and to use that information as a basis for deciding which mitigation strategies will be implemented. This approach enables one to make objective (not intuitive!) decisions and allows the available resources to be distributed in a reasonable way (Baer 1991; Waller 1995; Michalski 2016).

This paper describes a problem-based learning assignment that I designed to familiarize conservation-restoration students with some elements of risk assessment and risk management. Although that topic has long been present in the study programs of some foreign higher education institutions (Baer 2001; Roemich and Weintraub 2010), and even taught to heritage professionals (Waller, 1994; Antomarchi et al 2005), it has not been included in

[1] Ashley-Smith defines risk assessment as „an informed judgement about particular risks ", and risk management as „control of exposure to hazards in order to minimize risk" (Ashley-Smith 2011, 19). There are also other definitions. See, for example, Waller 1995, 21.

preventive conservation courses taught at Croatian universities.

The undergraduate program of study offered by the University of Dubrovnik has two preventive conservation courses. One focuses on factors affecting the ageing and deterioration processes, while the other one tackles practical aspects of preventive conservation, such as packing and transport, and emergency response (University of Dubrovnik 2021, 145–147, 207–209). Two preventive conservation courses are also included in the integrated undergraduate and graduate program of study at the University of Split – Arts Academy. One provides students with a general understanding of mechanisms of change by exploring the ten agents of deterioration, while the other one focuses on damage prevention actions related to the objects that students work on in the studios or in situ[2] (Arts Academy in Split 2019a, 49–52, 171–173). At the present moment, the integrated undergraduate and graduate program of study offered by the University of Zagreb – Academy of Fine Arts does not include preventive conservation courses. Issues related to preventive conservation are covered within specialist courses, with a focus on the environmental control, causes of deterioration and object- or material- specific practical preventive conservation actions (Ana Božičević, Email message to the author, June 7, 2022).

Until 2019 my knowledge of risk assessment and risk management applied to cultural heritage was somewhat limited, but a visiting lecture by José Luiz Pedersoli Jr from the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) provided both me and my students with the opportunity to delve more deeply into the subject.[3] Pedersoli Jr presented the method described in the publication he co-authored, *The ABC Method: a risk management approach to the preservation of cultural heritage* (Michalski and Pedersoli Jr 2016). Inspired by his talk, I decided to include some aspects of risk assessment and risk management in the program of a theoretical and practical workshop that I conducted a month later – in June 2019 – in Sisak, Croatia (Sunara 2019b; Sunara 2019c) as part of the European project Conservation of Art in Public Spaces (CAPuS).[4] I came up with an assignment in which workshop participants had to identify threats to the collection of outdoor metal sculptures known as the Sisak Steelworks Sculpture Park, to consider if the threats are the same for all the sculptures in the collection, to identify the factors that can cause damage or loss of value to the sculptures, and to propose mitigation measures/actions. The participants gave very positive feedback on this task, which encouraged me to further develop it through one of the courses I teach at the Arts Academy in Split.

The opportunity presented itself to me sooner than I had expected. In the spring semester of the academic year 2019/2020 I took over another preventive conservation course. (I had been teaching basics of preventive conservation since 2010.) Less than three weeks into the semester, the COVID-19 pandemic lockdown was imposed, and the universities were

[2] The latter was introduced in the study program in 2019, substituting a course that provided students with some hands-on experience, but mainly focused on dusting and cleaning of wooden objects in churches. The new course was for the first time delivered in the academic year 2021/2022. Its reading list includes two books on risk assessment and risk management (Ashley-Smith 2011; Michalski and Pedersoli Jr 2016).

[3] General information about the lectures that José Luiz Pedersoli Jr delivered in Split is published on the Arts Academy in Split website (Arts Academy in Split 2019b).

[4] The Conservation of Art in Public Spaces (CAPuS) project started in January 2018 and ended in June 2021. The project received funding from the European Commission, Programme Erasmus+ Knowledge Alliances (Project N° 588082-EPP-A-2017-1-IT-EPPKA2-KA). More information about the project can be found on the CAPuS website (CAPuS, n.d.).

forced to switch to distance teaching. Since the problem-based assignment related to risk assessment could be devised in such a way that students work on specific tasks at home, individually, with mentoring support being provided online, I decided to integrate it into the course.[5] I also decided to use the sculptures from Sisak as case studies as they have been the focus of my research interest for over a decade. More importantly, outdoor works of art are exposed to numerous risks, from harsh environment to interaction with the public, which made them ideal for the assignment.

2. The case studies

The assignment revolved around three sculptures from the Sisak Steelworks Sculpture Park, a collection comprised of 38 outdoor metal sculptures created during the 1970s and the 1980s by artists from the former Yugoslavia who participated in an artists' colony organised by the Sisak Steelworks (Čakširan and Baćani 2012; Sunara 2021).

The three sculptures that I selected differ in material, size, form, and location. The first sculpture – *The Work Process* by Sašo Stevović (Figure 1) – is made of steel. It rests on a low cement plinth and is sited near a road that connects the former Sisak Steelworks and the nearby residential estate. The second sculpture – *Dark Visions I* by Josip Zeman (Figure 2) – is made of galvanized steel and is installed in the middle of the park that separates the factory from the housing estate. It lies directly on the ground. The third object – a painted steel sculpture titled *Wall*, by Dora Kovačević (Figure 3) – is located in the Steelworks housing estate. It is not properly installed, rather leant against a wall of a residential building.

Figure 1. *Sašo (Nedeljko) Stevović, The Work Process, 1975, steel, 79.5 x 140 x 50 cm* (Photo by Boris Cvjetanović, October 24, 2018 © University of Split, Arts Academy)

[5] The entire course was delivered online, using Microsoft Teams as a teaching platform. Students submitted homework via email.

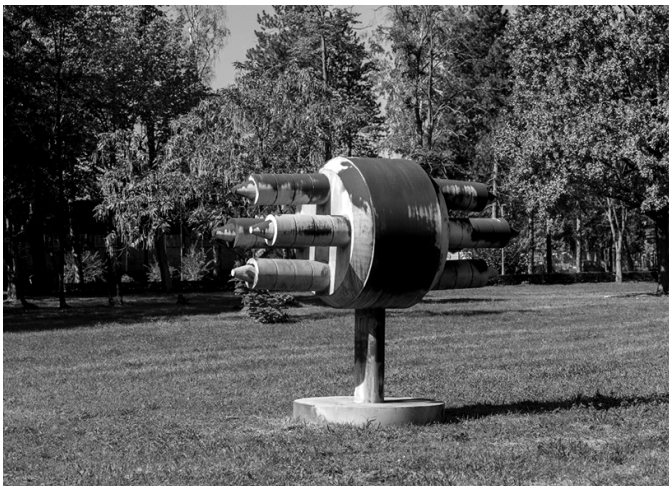

Figure 2. *Josip Zeman, Dark Visions I, 1983, galvanized steel, 266.5 x 266.5 x 327 cm* (Photo by Boris Cvjetanović, October 25, 2018 © University of Split, Arts Academy)

Figure 3. *Dora Kovačević, Wall, 1985, painted steel, 266.5 x 266.5 x 327 cm* (Photo by Boris Cvjetanović, October 25, 2018 © University of Split, Arts Academy)

3. Student demographics

The assignment was included in the second-year preventive conservation course. Ten students were enrolled in the course, all of whom had previously completed the introductory (first-year) course in preventive conservation. They also had attended José Luiz Pedersoli Jr's lecture on risk management.

I do not have information about the number of students in the group who were pursuing the specialization in conservation-restoration of metal, but I should note that the assignment did not require a high level of specialist knowledge in that area, rather the application of knowledge acquired in the other courses and of common-sense.

4. The assignment

The outline of the assignment is shown in Appendix 1. First, I introduced the students to the three outdoor sculptures the assignment would focus on. I provided them with photographs of the artworks and pointed them to a Google map on which the sculptures' locations are marked. Because the sculptures are located in Sisak, which is 400 kilometres road distance from Split, and because the course was delivered at a time when severe travel restrictions were imposed, students did not get to see them in person. The only information they had on the sculptures' state of conservation was what they could discern from their photographs, so I did not ask them to consider the objects' physical condition when working on the assignment.

The first requirement for each student was to produce an essay in which they would answer the following questions: What threats is each sculpture exposed to? How can damage occur? What measures can be taken to prevent the damage? Which people and/or services can help implement the proposed measures? Students also had to explain who should respond when a sculpture gets damaged, and what the chain of responsibility should be.

Next, I asked the students to read all the essays and to mark the sentences that mention causes of damage to the three sculptures. I provided them with a form in which they had to list the causes of damage and note which sculpture each cause referred to i.e., if a certain cause affected one sculpture, two sculptures, or all three sculptures.

In the following step students had to go through the essays again and extract sentences that mention or describe incident scenarios for each of the ten agents of deterioration[6] for one particular sculpture. The extracted text had to be revised in order to provide a clear description of each scenario.[7] Students had to enter this information in a special form. Since the task focused on three objects, I created three forms – one for each sculpture. Each form included one example: incident scenarios for one agent of deterioration (physical forces) for that particular piece. Table 1 shows the example included in the form related to the sculpture installed near a road.

Table 1. *Incident scenarios for the sculpture installed near a road*

Number	Incident scenario
1	If someone is driving too fast or under the influence, a car can fly off the road, hit the sculpture and physically damage it (scratch it, deform it, or break it into pieces). The force of the impact can cause the sculpture to fall off the concrete plinth.
2	Gravel or other rock material can fall off passing trucks, and the cars can propel the gravel or rocks toward the sculpture. This can lead to surface damage (chipping off the metal).

[6] Physical forces; thieves, vandals and displacers; fire; water; pests; pollutants; light, ultraviolet and infrared; incorrect temperature; incorrect relative humidity; dissociation / custodial neglect.

[7] The scenario descriptions in the essays were mostly incoherent. For example, many students wrote "An earthquake can damage the sculpture." instead of "An earthquake can overturn the sculpture. Some parts of the sculpture can be detached or deformed, and the paint can get scratched."

3	During grass cutting, a mower or a trimmer can propel gravel or small rocks toward the sculpture. This can lead to surface damage (chipping off the metal).
4	Due to road traffic, the sculpture is subject to vibration. This can expose the material to strain and lead to (micro)cracking.
5	Solid particles carried by the wind can abrade the surface of the sculpture.
6	A strong wind or a storm can break off a branch from a nearby tree, which can land on the sculpture and cause scratches on its surface (deformation or breakage are a less probable, as the sculpture is made of solid steel elements).
7	A lightning strike can locally melt the surface, deform the sculpture or even completely destroy it.

I should note that the students were not asked to evaluate the probability of incident occurrence nor to quantify the resulting loss of value, as those kinds of assessments would require far more data and much more time.

Finally, I asked the students to propose mitigation measures for each risk scenario identified in the previous step, and to name the individuals and/or institutions that can (help) implement those measures. I again provided them with forms in which this information had to be registered. To help the students understand what they needed to write, I included several examples in the forms. Those examples are described in the next chapter. When proposing options to reduce risks, students did not have to consider the availability of economic and human resources, nor did they have to prioritize the proposed measures.

5. Results and discussion

5.1. Initial risk identification and initial proposal for risk elimination/mitigation

The essays students submitted in the first step of the assignment varied in structure, length and quality. Most students did not take into account all the threats that the sculptures are exposed to, and all the possible incident scenarios related to those threats. When considering individuals and services that could be involved in the implementation of mitigation actions and measures, most of them mentioned only conservator-restorers.

5.2. Identification of causes of deterioration

Some students recognized only 13 or 14 causes of deterioration, while some others managed to list 40 of them. Regardless of the number of causes they managed to discern, this task inspired the students to think about the issues they might have overlooked in the previous step. By reading each other's essays, they got the opportunity to critically evaluate the performance of their classmates, as well as their own.

5.3. Identification of incident scenarios

From the forms that students submitted I was able to extract 78 *different* incident scenarios. Some scenarios apply to all three sculptures, some to just two sculptures, while some are object-specific. Chart 1 shows how the scenarios are distributed across the ten agents of deterioration. The list of scenarios is not exhaustive, as they were 'sourced' only from the essays that students wrote in the first step of the assignment. The scenario descriptions required revision as the text was not always coherent and factually accurate.

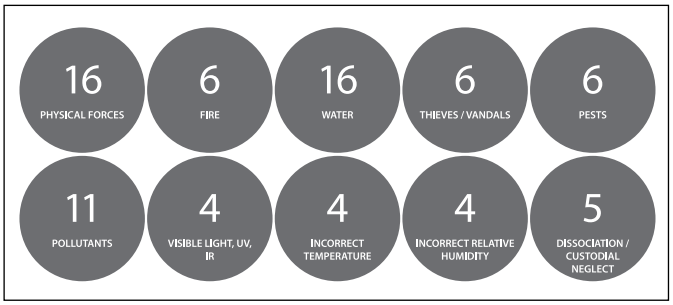

Chart 1. *Total number of different incident scenarios identified for the three sculptures from the Sisak Steelworks Sculpture Park*

5.4. Proposing specific mitigation measures and identifying stakeholders/partners

Working on this task, several students came up with original and creative solutions, and managed to propose more than one mitigation measure per incident scenario. Some students, however, had difficulty finding even one solution for a scenario, or proposed the same mitigation measure for multiple scenarios. Some students were unable to precisely determine who should be involved in the implementation of the measures.

A complete overview of the mitigation measures proposed for the 78 incident scenarios and of the persons/services/institutions that were identified as those that could implement them is beyond the scope of this paper. Until the free-form text that students entered in the forms is corrected, the final results of the assignment remain publicly unavailable. Once the text is revised, the results will be shared with the cultural institutions from Sisak who manage the Sisak Steelworks Sculpture Park, as well as with the responsible Monuments Care Office of the Ministry of Culture and Media.

To help the reader make sense of the assignment and get a clearer image of the scope and importance of the work done, mitigation measures for three incident scenarios are presented here.[8]

An example related to physical forces

The following incident scenario was considered: "If someone is driving too fast or under the influence, a car can fly off the road, hit a sculpture installed near the road and physically damage it (scratch it, deform it, or break it into pieces). The force of the impact can cause a sculpture to fall off the concrete plinth." There are two lines of action that can be taken to mitigate damage: (A) slow down motor vehicle speed; (B) minimise impact damage.

Vehicle speed can be reduced by installing speed limit signs on the section of the road

[8] These are examples that the author included in the forms she gave to the students.

where the sculpture is installed; by installing speed humps and/or speed cameras; even by periodically conducting speed controls. These measures can be implemented with the help of road authorities and the police force.
As for the impact damage, there are several ways in which it can be minimised. A sculpture can be moved farther away from the road. A fence can be installed along the road (but it could have a negative effect on the visual experience of the artwork). Another possibility is to increase the height of the concrete plinth on which the sculpture rests (that, too, would change the artwork's visual impression). The measures listed can be implemented in collaboration with road authorities, municipal planning service and the artist.

An example related to thieves, vandals and displacers

"The whole or a part of a sculpture can be stolen" was the incident scenario considered. The actions that can be undertaken to mitigate this kind of loss/damage can be divided into (A) actions that have direct and immediate effect and (B) those that show effect in the medium and long term.
The first category encompasses a wide range of actions: setting a sculpture on a concrete plinth if it does not have one already; attaching a sculpture to its concrete plinth if it is not already fixed to it; lighting the sculpture; placing an information panel next to the sculpture with basic information about the piece and a note that it is a protected cultural property; installing surveillance cameras in the vicinity of the sculpture; conducting regular (weekly) check-ups; organising occasional police patrols; hiring a security company to patrol at night; if a sculpture or its part gets stolen, sending out photographs of the artwork to scrap metal facilities in the wider city area and requesting the companies to contact the police if the sculpture or a part of it are offered for sale; distributing photographs of the sculptures to local scrap metal companies and informing them that the objects are protected under law; severe penalties for any act of theft and vandalism of the sculptures. These measures can be implemented by: civil engineers and structural engineers (design of concrete plinths and anchoring systems), city utility service (construction of concrete plinths, anchoring the sculptures to the plinths, installation of lighting systems), lighting design company, video surveillance company, police authorities, security company, Ministry of Justice (legislation related to damage and destruction of cultural property), and the city cultural institutions that manage the collection (the making of a collection catalogue, delivery of the catalogue to scrap metal companies).
Measures that will produce effects in the medium and long term include: conducting educational programs in the local community to raise awareness about the sculptures' existence and to prompt citizens to report any suspicious activities around the sculptures; conducting educational activities for children and youth to prevent inappropriate interactions with the sculptures. These measures can be implemented by local kindergartens and schools, city cultural institutions that manage the collection, professional association of museum educators, and higher education institutions.

An example related to incorrect temperature

The following incident scenario was considered: "In the summer months, the sculpture heats up. Increased temperature accelerates all degradation processes." This incident scenario refers to sculptures that are entirely exposed in the sunlight the whole day.
Damage can be mitigated by placing a sun-shade over a sculpture just before annual tem-

perature maximums are reached. This would require the involvement of the meteorological and hydrological service (for delivering timely information on temperature maximums in the specified area), conservator-restorers (for installing sun-shades) and utility services (for assistance in installing sun-shades). A sun-shade would, albeit temporarily, affect the aesthetic experience of the artwork.

A sculpture can be protected by planting trees in its vicinity which will (in future) provide shade. This, however, could affect the aesthetic experience of the sculpture. The individuals and/or institutions whose help would be required are: conservator-restorers (to provide advice on where the trees can be planted), city planning services (to determine planting locations) and city utility services (to plant the trees and carry out maintenance).

A sculpture can be moved to a shadier location. That action presents an ethical question as relocation of the sculptures impairs the original conception of the organizers of the Sisak Steelworks Sculpture Colony, who chose the sculptures' installing locations. The implementation of this measure would require the involvement of the Monuments Care Office (for determining if/where a sculpture can be relocated), the artist (for choosing or approving the new location), conservator-restorers (for providing guidance in the selection of a new location), city planning services (for proposing the new location) and city utility services (for deinstallation and relocation of the sculpture).

6. Conclusion

The assignment required students to integrate and apply knowledge they had acquired across multiple courses. This particularly refers to explaining the cause-and-effect relationship. Proposing mitigation measures helped develop students' creative thinking skills. The assignment as a whole taught them how to tackle a problem systematically.

The most important outcome of the assignment was that students' perception of preventive conservation was broadened. They became aware of the extremely wide range of threats that heritage objects are exposed to – a fact they need to consider when making preventive conservation plans. Students also realized that, when it comes to the implementation of risk-mitigation measures, conservator-restorers cannot do all the work on their own – they need to establish relationships and build partnerships with other experts and agencies. Preventive conservation requires a collective effort.

The sculptures from the Sisak Steelworks Sculpture Park greatly benefited from the assignment. The threats to the three sculptures have been recognized, mitigation recommendations developed, and key actors identified. These data can be used to create a preventive conservation plan not just for those sculptures, but for other similar works in the collection – and elsewhere.

If more sculptures from the Sisak Steelworks Sculpture Park are analysed in the same manner, a catalogue/register of incident scenarios and mitigation recommendations can be produced. More factors that determine an object's vulnerability to damage can be taken into account in the future, such as the material composition of the object in question, its size, form, construction technique, physical condition and environmental context. A database could eventually be created in which one could enter sculpture attributes – for example "painted steel", "urban area", "under a tree" – and a list of all incident scenarios would be

displayed, along with possible mitigation measures. That would be an extremely helpful tool in preventive conservation planning for outdoor works of art.
A shortened version of this assignment (see Appendix 2) has been included in the course on conservation-restoration of contemporary public artworks developed through the CAPuS project. It is a part of the module 'Mitigating deterioration (preservation plan)'. The material is openly and freely available on the CAPuS e-learning platform.
The assignment – either in the form described in this paper or in its shortened version – can be applied to any heritage object or a collection. The exercise does not need to be limited to conservation-restoration students – it can be used by professional conservator-restorers (and other heritage professionals) as a first step in risk assessment.

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Appendix 1

Table 2. *The outline of the assignment described in the paper.*

Step	Student tasks	Materials provided by the course instructor
1	Examine the available information about the cultural heritage objects, and respond to the following questions in essay form: What threats is each object exposed to? How can damage occur? What measures can be taken to prevent the damage? Which people and/or services can help implement the measures you are proposing? Who should respond when the objects get damaged, and what the chain of responsibility should be?	General information and photographs of the objects.
2	Read your colleagues' essays, and write down all the causes of deterioration mentioned in the texts. Take note of which object is / objects are affected by a specific cause. Record the information in the form provided by the course instructor. Critically evaluate your own performance in Step 1.	A form (a Word document table) in which students have to enter the causes of deterioration mentioned in the essays, and record which object is / objects are affected by each cause.
3	Focusing on just one object, read the essays again and extract sentences that describe incident scenarios for that particular object. Group incident scenarios into categories according to the ten agents of deterioration. Record the information in the form provided by the course instructor. If necessary, amend/edit the text you extracted from the essays. The text you will enter in the form needs to provide a thorough explanation of the sequence of events connected to each cause that results in damage to the object.	One form (a Word document table) for each object included in the assignment, in which students have to record incident scenarios described in the essays. Each form should include one example (incident scenarios for one agent of deterioration for the object in question).
4	Propose mitigation measures for the incident scenarios listed in the form that you received from the course instructor. Identify individuals and/or institutions that can (help) implement each measure/action you are proposing. Enter the information in the form(s).	One form (Excel spreadsheets) that contains all incident scenarios identified in Step 3. Students have to enter in the form information about possible mitigation measures and the actors who can implement them. If the assignment requires a lot of time to complete, split the form into several smaller ones (each form should cover several agents of deterioration). Make sure to include one example in every form (mitigation measures for one incident scenario, and the actors who can implement them).

Appendix 2

The following is an excerpt from the Guide for Lecturers written by Sagita Mirjam Sunara for the Conservation of Art in Public Spaces (CAPuS) formative module 'Mitigating deterioration (preservation plan) – maintenance of outdoor sculptures'.[9]

In-class, 2 hours
Step 1. Problem-based exercise: identifying threats to outdoor sculptures

Show students an outdoor sculpture from the CAPuS Digital Repository (https://www.capusrepository.unito.it/), and provide some context (basic information about the artwork, its location and physical condition).

Ask students to list worst-case scenarios related to each of the ten agents of deterioration for that specific sculpture. If necessary, remind them what the ten Agents of deterioration are: (1) physical forces, (2) thieves, vandals, displacers, (3) fire, (4) water, (5) pests, (6) pollutants, (7) light, (8) incorrect temperature (9), incorrect relative humidity, and (1) custodial neglect and dissociation. Tell students that they can list more than one scenario for each agent.

Exercise tip: This exercise can be performed in such a way that students are divided into small groups or pairs, and each group or pair reflects on the scenarios related to two or three agents of deterioration.

Step 2. Problem-based exercise: identifying factors that influence the vulnerability of an object.

Ask students to explain how risks change according to the artwork's material, physical state (i.e., state of preservation) and location.

Ask them if they can think of any other factors that can influence the object's vulnerability. (Possible answers: size, structure/shape, function, value, use of the site/area where the sculpture is installed.)

Step 3. Problem-based exercise: proposing mitigation measures for public sculptures.

Ask students to propose mitigation measures for each scenario from the first stage of the discussion, and to identify all the actors – individuals and services/institutions – that can (help) implement the proposed measures.

Step 4. Group discussion about the exercise.

Ask students to reflect on the whole assignment. What have they learned from this exercise? (Students should gradually come to the conclusion that preventive conservation of outdoor sculptures requires more than routine maintenance, and that conservator-restorers need to partner up with other professionals in order to make sure that outdoor sculptures last as long as possible.)

[9] The module can be accessed through the CAPuS e-learning platform, available at http://www.capusproject.eu/capus-e-learning-platform/.

Sažetak

Upoznavanje studenata konzervacije-restauracije s procjenom rizika i upravljanjem rizicima na primjeru skulptura na otvorenom

Cilj. U radu se opisuje problemski zadatak koji studente konzervacije-restauracije upoznaje s procjenom rizika i upravljanjem rizicima u kontekstu kulturne baštine. Zadatak uključuje identificiranje prijetnji kojima su kulturna dobra izložena, izradu scenarija događaja koji mogu rezultirati oštećivanjem ili gubitkom vrijednosti kulturnih dobara, predlaganje mjera ublažavanja rizika te identificiranje aktera koji predložene mjere mogu provesti. Zadatak u obzir uzima sve rizike, ne samo one povezane s nezgodama i velikim nesrećama.

Pristup/metodologija. U uvodnom se dijelu objašnjava koncept procjene rizika i kontekst problemskog zadatka. Uz kratki prikaz studije slučaja (tri skulpture iz Parka skulptura Željezare Sisak), u radu se donose osnovni podaci o studentima koji su rješavali zadatak. Problemski je zadatak objašnjen po koracima/fazama. Završni su rezultati samo okvirno opisani.

Rezultati. Kroz problemski je zadatak identificirano 78 različitih scenarija za skulpture na otvorenom. Da bi se čitatelju približila osnovna ideja zadatka, u radu su opisane mjere ublažavanja rizika za tri scenarija i navedene osobe/službe koje ih mogu provesti.

Praktična primjena. Zadatak se bavio skulpturama na otvorenom, no može se primijeniti na bilo koji predmet ili zbirku. Zadatak se ne mora nužno uklopiti u sveučilišne kolegije vezane za preventivnu konzervaciju. Štoviše, ne mora biti usmjeren samo na studente konzervacije-restauracije (ili studente općenito): muzejski i baštinski stručnjaci mogu ga primijeniti kao prvi korak u izradi procjene rizika za muzejske i sakralne zbirke.

Originalnost/vrijednost. Tema koja je u radu predstavljena u hrvatskoj je stručnoj literaturi slabo zastupljena. U kontekstu metodike nastave konzervacije-restauracije na visokim učilištima u Hrvatskoj, opisani problemski zadatak može se smatrati inovativnim.

KLJUČNE RIJEČI: Park skulptura Željezare Sisak, preventivna konzervacija, problemsko učenje, procjena rizika, skulptura na otvorenom

A method for the integration of public art in risk management frameworks: challenges and opportunities

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Abstract

Purpose. The research aimed to develop an integrated and systematic method for assessing risk in contemporary public art collections. The research outlines key elements of a public-art risk-management plan. Emphasis is placed on enhancing heritage protection from natural hazards and extreme events related to climate change and, more significantly, on how such a plan can strengthen resilience in the social and historic built environment.
Methodology. To develop the method, the World Heritage Historic Center of San Gimignano (Italy), comprising both medieval heritage and contemporary public art, is investigated because of its unique cultural landscape. The landscape's contemporary elements exist as the result of several cultural initiatives: *Affinità Elettive* (1994), *Arte all'Arte* (1998-2005), and *UmoCA* (2011). This research highlights how the ensured survival of San Gimignano's public art is severely conditioned by the coexistence of physical, contextual, and managerial factors (hazards and vulnerabilities).
Findings. Based on case studies, the research develops indicators and criteria for vulnerability and risk analysis. Moreover, the integration of public art into, and its contribution to, general DRM frameworks is discussed. Despite the fact that public art's values can contribute to the resilience of historic urban centers, the research reveals important challenges to overcome if public art is to be incorporated into general risk-management policies.
Originality. In light of this, a risk-analysis model has been developed following international policies and frameworks, the results of which could be integrated into the general-management and conservation plan for the contemporary collections in the public space. Moreover, in recognition of the importance of social, cultural, and economic processes in the conservation of public spaces, a values assessment has been incorporated into the risk management framework.

KEYWORDS: historic context, resilience, risk management, risk reduction, public art

1. Introduction

Within the framework of disaster risk management, this article proposes a methodological process for improving the resilience of contemporary public art to both man-made and natural hazards.

The starting point of the research was to identify hazards and to analyze and prioritize those hazards that have the potential to cause damage to contemporary artworks situated in a historic urban center. In this way, a taxonomy of hazards and threats was obtained, both common to other heritage typologies and specific to public art. The vulnerability analysis considered three typologies of vulnerability (physical, contextual, and institutional) that served as the basis for the development of risk analysis and evaluation. Risk is calculated for each vulnerability class with respect to the main hazards and threats. The procedure includes records, tables and a workbook to equip stakeholders with a better understanding of multiple hazards.

Application of the proposed method is presented here with reference to one of the most emblematic case studies in Italy: the collections in the medieval town of San Gimignano, near Siena. The collections proceeded from three artistic events, *Affinità, Arte all'Arte,* and *UmoCA*, which were promoted by several curators between 1994 and 2011 and involved around eighty international artists (Figure 1).

Figure 1. *Luciano Fabro, Italia all'asta, 1994* (Source: Marta Gómez)

The overall goal is to support cultural institutions by providing them with a method for prioritizing the most difficult decisions when faced with complex risk scenarios. Finally, in drawing upon this example, the integration and contribution of contemporary public art in the risk management framework is discussed.

1.1. The role of cultural heritage in sustainability and resilience agendas

Recent risk-management policies have recognized cultural heritage as an integral part of the built environment. The 2030 Agenda for Sustainable Development (UN 2015) has included cultural heritage among its targets. Goal 11 explicitly refers to the need to make cities and human settlements "inclusive, safe, resilient and sustainable" through "planning and management" (Target 11.3), and to the "efforts to protect and safeguard the world's cultural and natural heritage" (Target 11.4) (Nocca 2017). Following the Sustainable Development Goals (SDGs), the United Nation's report for the Post-2015 Development Agenda, "Realizing the Future We Want for All" (UN 2012), highlights the importance of risk reduction and resilience within the context of sustainable development. The integration of cultural heritage into disaster resilience has been emphasized in the recent Sendai Framework for Disaster Risk Reduction (SFDRR) 2015–2030 (UNISDR 2015), particularly in the Priority for Action 1, "Understanding disaster risk", and in Priority for Action 3, "Investing in disaster risk reduction for resilience", (UNISDR 2015).

Consequently, international organizations, such as UNESCO (United Nations Educational, Scientific and Cultural Organization) and ICOMOS (International Council on Monuments and Sites), highlight the key role of culture in achieving sustainable and resilient development (Hosagrahar et al. 2016). Furthermore, the New Urban Agenda (UN 2016) recognizes cultural heritage as an important factor for urban sustainable development that plays an important role in "rehabilitating and revitalizing urban areas, and in strengthening social participation and the exercise of citizenship" (Point 38). Culture is recognized as a priority component of urban plans and strategies in the adoption of planning instruments (Potts 2016).

In conclusion, cultural heritage must be protected and incorporated into risk management frameworks in recognition of the role it plays in the sustainability and resilience of cities and communities.

1.2. Disaster risk frameworks applied to public art collections

According to the policies mentioned above, public art becomes another essential element of the cultural landscape thanks to which institutions and communities can better deal with material changes while "retaining heritage values" (Australia State of the Environment 2011, 780). In fact, since the beginning of the phenomenon, in the 1970s, public art has become a crucial element in the regeneration and revitalization of cities, due as much to the social recognition it enjoys as its inclusion in local development policies.

Nevertheless, the survival of public art is strongly conditioned by the coexistence of a multiplicity of hazards and threats that jeopardize its resilience. In consequence, significant losses of physical integrity can occur, including the risk of disasters. In the context of public art, a "disaster" can be defined as a serious disruption to the use of and accessibility to a public art collection due to hazardous events interacting with onsite vulnerabilities and institutional weaknesses. In the absence of preventive conservation plans based on risk management that make it possible to avoid such disasters, the local institutions that manage the collections have carried out emergency restorations that do not by themselves fix the weaknesses in the artworks. Indeed, in many cases, they threaten the maintenance of the tangible and intangible values of these collections.

Conversely, the concepts of sustainability and resilience, which today inform cultural heritage conservation programs, highlight the importance of long-term conservation strategies that deal holistically with a multitude of interconnected hazards and threats (Lizarralde, Chmutina, Bosher and Dainty 2015, 96). Nevertheless, resilience thinking involves approaches that rely on continuity of significance rather than simply on materials, in recognition of the landscape as "living heritage", an "organism" made of complex characters and relationships (UNESCO 2011).

In conclusion, public art resilience, and particularly continuity of significance, require "risk reduction policies, processes and actions" UNISDR (2015). Risk Management consists of "communicating, consulting, establishing the context, and identifying, analyzing, evaluating, treating, monitoring and reviewing risk" (ISO 2018) with the aim of identifying and prioritizing appropriate conservation actions.

1.3. Risk analysis methods apply to cultural heritage

The discipline of preventive conservation has incorporated the risk-management cycle, which establishes risk in terms of loss of values of artworks (Pedersoli 2016), as its primary and essential standard.

Since the introduction of this method, in the 1990s, to assess risk to collections (Muething, Waller and Graham 2005), and as the result of the pioneering work of Jonathan Ashley-Smith, Stefan Michalski and Robert Waller, the discipline has undergone a genuine transformation that has facilitated the transition to a predictive, holistic and multi-risk approach, based on a scientific process (Fifield, Arenstein and Gleeson 2013, Henderson 2018). Risk analysis has, therefore, made it possible to configure a preventive conservation plan for cultural heritage as an effective, efficient and systematic system within which to develop treatments that reduce damage to works of art (Michalski 1990).

Although recent researches (Brokerhof, Ankersmit, Scholte, Wijers and Vermaat 2011) have contributed to the application of this method in the field of contemporary art, there is still a lack of specific methodology for public art. Tools for guiding the logical process of risk analysis are needed in order to guarantee a global vision of all possible risk scenarios at a territorial scale. They must also take into account any potential loss of a collection's meaning.

In light of this, different methods and tools for assessing the disaster risk to public art have been implemented. An assessment framework, proceeding from an analysis of a study area in San Gimignano, has been proposed to capture the multiple risk factors faced by a public art collection. The model proposed incorporates the systematic identification of key risks, and an assessment of their impact as a function of a collection's vulnerability. Following the resilience paradigm, the framework also seeks to identify and remove systemic weakness from cultural heritage institutions that manage collections. Moreover, in recognition of the importance of social, cultural, and economic processes in the conservation of urban areas (UNESCO 2011), a values assessment has been incorporated into the risk management framework.

1.4. Public art collections in a historic urban context: the case study of San Gimignano (Italy)

The methodology has been tested in the case study of San Gimignano (Italy). San Gimignano was chosen to trial the procedure due to its unique cultural landscape comprising a medieval fabric and contemporary artworks.

San Gimignano is a medieval town sited in a rural landscape on the top of one of the septentrional hills. The area preserves an authentic and important character of medieval civilization. The historical center was declared "World Heritage" in 1990 because of its exceptional value: it has maintained its architectural homogeneity and its original urban layout.[1] The area is rich in Etruscan settlements, attested by numerous discoveries. Between the ninth and twelfth centuries, these settlements formed an essential axis of communication, with roads such as the Romea and the Francigena connecting Rome and the north. San Gimignano was embellished with several notable palaces and has retained its feudal atmosphere and appearance. Since 1965, the historical center has been protected by a landscape constraint (Legislative Decree 42/2004) (D.M. 25 March 1965). Furthermore, 122 historic buildings are protected by historical and cultural constraints (art. 10, Legislative Decree No. 42/2004). The area functions as a buffer zone that affords an added layer of protection. Nine site-specific environmental artworks by renowned international artists are scattered throughout the surroundings and inside the medieval urban center (churches and buildings, fountains, gardens, and walls). These artworks are the product of three artistic events: *Affinità Elettive* (Briganti and Laureati 2007), *Arte all'Arte* and *UmoCA* (Bonito and Putnam 2004).

Affinità Elettive was a project curated by Giuliano Briganti and Luisa Laureati between 1991 and 1994. Artworks made by five artists from the Arte Povera are located at the church of San Jacopo (Jannis Kounellis, *San Gimignano,* 1994) and St. Augustin, Giulio Paolini, *Meridiana,* 1994) (Figure 2), on the vault of the Bongi street (Nunzio, *Untitled,* 1994), in the Palace of Podestà (Luciano Fabro, *Italia all'asta,* 1994) (Figure 3), and on a spur of the medieval wall (Eliseo Mattiacci, *Equilibrio compresso,* 1994). A series of artistic events named *Arte all'arte* were developed between 1998 and 2005 with artworks placed in various municipalities across Siena (Italy), in San Gimignano, Colle di Val d'Elsa, etc. The project was coordinated by the cultural association Continua and aimed to create a new equilibrium in the relationship between the city and the countryside. The starting point was to encourage artists to work in public spaces. Each year, a group of artists were selected by curators and invited to participate. Each artist conceived and executed a project to transform or reinterpret a particular site through a site-specific installation. The project was realized in collaboration with the local municipality and accompanied by workshops and meetings between the local population and the artists. A total of 84 artists were invited by the 20 curators. Today, only a few of these artworks remain as permanent fixtures. At San Gimignano, the permanent artworks are located in the public garden – Joseph Kosuth, *La sedia davanti alla porta*, 1999 – at the medieval fountains – Luisa Rabbia, *Il riposo del tempo*, 2004 – and inside a spur of the medieval wall – Anish Kapoor, *Underground*, 2005. *UmoCA* (Under Museum of Contemporary Art) is the project carried out by the artist Kiki Smith at the invitation of Cai Guo-Qiang. Smith

[1] For more details, see: https://whc.unesco.org/en/list/550/.

Figure 2. *Giulio Paolini, Meridiana, 1994.* (Source: Marta Gómez)

Figure 3. *Nunzio, Untitled, 1994.* (Source: Marta Gómez)

created a series of sculptures sited in various municipalities of the Elsa Valley (San Gimignano, Colle di Val d'Elsa, Poggibonsi).

Collections were created to bring contemporary art to provincial towns and explore its relationship with the historic environment. Moreover, artworks aimed to revitalize the cultural and aesthetic values of this renowned historical environment, to improve the degraded perimeter area of walls and medieval fountains in San Gimignano (Figure 4), and to recover the relationship between the contemporary city and the countryside. Each of the artists involved chose a site for their work whose characteristics contributed to the message of their artwork. Thanks to the high regard in which the collections are held by the community, some of the installations have been acquired by the public administration.

Conserving the material integrity of the artworks is crucial for maintaining the value of the collection and the urban landscape. Lack of maintenance and environmental factors have

Figure 4. *Luisa Rabbia, Il riposo del tempo, 2004.* (Source: Marta Gómez)

eroded the surfaces of artworks and compromised, in particular, architectural supports and assembly systems. The existing conditions present mostly atmospheric soiling and biological colonization, which leads to the disaggregation of materials and the formation of cracks or the detachment of fragments from the support.

2. Methodology

In line with the international standards (ISO 31000 'Risk management – Principles and guidelines 2018) and the Historic Urban Landscape approach (UNESCO 2011), the risk-management framework proposes qualitative and semi-quantitative methods for data collection and the analysis process.

The procedure develops a stage-by-stage process that informs the logic behind the framework to guarantee Public Art Resilience (PAR): values assessment, hazard/threat identification; vulnerability assessment; analysis and evaluation of risks (Table 1). As stated by Bülow, a useful starting point is an assessment of the collection in terms of its value as well as its vulnerability (Bülow et al. 2016, 101). This first vulnerability analysis, of a qualitative nature, has the advantage of offering a panoramic view of the main risks that are analyzed in depth at a second level. For the risk analysis, a semi-quantitative method adapted from the risk-assessment method proposed by ICCROM (Pedersoli 2016) has been used. These approaches have been reviewed with the case study as a starting point.

Table 1. *Public art resilience framework: stages description*

PUBLIC ART RESILIENCE (PAR) FRAMEWORK	
STAGE	DESCRIPTION
1. Values assessment	The process of assessing the significance and identifying key elements that define the heritage character
2. Hazard/threat identification	The process involves finding and describing the hazards and threats to which the collection is exposed due to its location
3. Vulnerability assessment	The process of assessing the susceptibility of the artworks to a hazard/threat that can lead to a loss in values
4. Risk analysis and evaluation	The process of identifying and analyzing the magnitude of a risk, expressed in terms of likelihood and impact

2.1. Values analysis

Since heritage resilience relies on the continuity of values, specific requirements regarding significance, authenticity and integrity also need to be addressed in the risk-assessment procedure. The following methodology emphasizes the assessment of values as a central component to identify key elements that define the heritage character of a public art collection (Australia ICOMOS 2000).

Table 2. *List of values and attributes*

WHY			
VALUES			
Cultural Historical Artistic	Scientific Use	Social Educational	Economic
WHAT			
ASSET			
	TANGIBLE ATTRIBUTES	INTANGIBLE ATTRIBUTES	
Sculpture Paint or panel Installation Architecture Urban element Natural element	Style, form, design Materials Surface features Ensemble, display Completeness Condition	Character Representativeness of a concept or artistic trend, artist, style, school Provenance, information about asset Location (original location) Accessibility	
AREA			
Urban context Gardens Countryside	Relation to environment, architecture elements	Use, function Knowledge, traditions, practices Relation(s) to meaning (association) Community / people(s)	
LANDSCAPE			
	The result of layering	Relation to urban and natural landscape	

The method has been developed to associate values with a set of attributes that define the

values (Table 2). Values are divided into the following clusters: cultural-historical (related to historic and information values), artistic, scientific, use (related to usability by an organization and its public), social (including personal-experience values), educational, and economic. Attributes, which are divided into tangible and intangible, consider elements from the artwork, the area, and the landscape that contribute to the message of the artwork. Among the attributes, there are conditions, such as conservation state and maintenance of environmental characteristics, that can be considered variables that contribute to an increase or decrease in values. To guarantee a standard and comprehensive description of significance, a set of questions has been made available to guide the arguments. For example, regarding condition, the following questions are asked: Is the item physically integrated? Is the item chemically or mechanically stable?

2.2. Classification of hazards and threats

Collections of contemporary art situated in spaces for public use are subject to a multiplicity of dangers that act simultaneously. This simultaneity amplifies the effects of the dangers and strongly conditions the life of the works. Given these facts, the identification of hazards and threats requires a holistic approach. Therefore, the territory, the community, and public institution's profile have been analyzed to understand which hazards derive from the physical environment and which from the cultural context.

The classification incorporates hazards and threats to describe actively-interacting risk factors. According to the HUL approach (UNESCO 2011), these hazards and threats have

Figure 5. *Jannis Kounellis, San Gimignano, 1994.* (Source: Marta Gómez)

been categorized into natural, socio-cultural, and institutional hazards. Moreover, the approach divides the current classification of environmental hazards into rapid-onset and slow-onset (UNDRR 2020).

In the case study analyzed, the survival of the public artworks is severely conditioned by the numerous hazards and threats found in the environment. The topographical, morphological, and climatic characteristics of the territory generate hazards that relate as much to continual natural events as to sudden ones. Among the sudden-onset hazards, wind and rainstorms are the most important. And these hazards are likely to be exacerbated by the increase in intensity and frequency predicted by climate-change models – for example, the windstorm that ravaged the Tuscany region in 2015, which caused severe damage to an outdoor sculpture (Figure 5). It is also necessary to consider the elevated humidity levels that characterize the environment during certain months of the year.[2] In terms of social threats, the historic urban center suffers pressure from tourism. Finally, much of the architectural heritage has been converted into lodgings, and there is occasional vandalism of the most accessible works and of those located outside the center.

Although these dangers are common to all cultural heritage in an external environment, the study has made it possible to identify other dangers that could be considered specific to public art and that are largely related to institutional dangers. First and foremost of these is the lack, in many cases, of appropriate artistic-historical legal status under current Italian law. A series of secondary dangers derive from this lack: works of public art are not included in an official catalog; it is not compulsory for a restorer to intervene in the event of damage; only local institutions are in charge of the works' guardianship; and the generally scarce resources available to those institutions prevent the implementation of periodic maintenance programs.

In addition, since the message of public works of art is in many cases related to their physical and cultural environment, the degradation or loss of urban elements or the interruption of cultural processes can be considered dangers that affect their conservation. For example, the meaning of the work of Jannis Kounellis is related to the presence of a medieval bell tower and that of Joseph Kosuth to theatrical activities.

Based on the information acquired, a total of nine hazards have been selected for the hazards assessment (Table 3).

Table 3. *Hazard and threats in public art collections*

RISK FACTORS	SLOW HAZARDS	SUDDEN-ONSET HAZARDS
Environmental	High humidity, heatwave, rain Biological, air pollution	Earthquakes (Landslide, Fire) Windstorm
Contextual	Deterioration of annex buildings or urban elements	Collapsing of annex buildings or urban elements
Socio-cultural	Poor societal value / Vandalism / Interruption of cultural activities	
Economic	Changes in traditional life / Mass tourism	
Institutional	Lack of a legal status as artwork / Lack of cataloguing / Lack of maintenance and professionals in preventive conservation	

[2] For more information on climate factors (temperature, humidity) and air quality see ARPAT, Regional Agency for the Ambient Protection, Tuscany, Italy. http://www.arpat.toscana.it.

2.3. Vulnerability analysis

An indicator-based vulnerability assessment is applied to the risk assessment procedure to adequately analyze the vulnerability components. Performing a vulnerability assessment on a territorial level for a large number of assets and multiple hazards requires an approach that takes into account the purpose and scale of assessment. The proposed vulnerability assessment focuses on understanding comparatively the susceptibility and level of exposure of each artwork to the impact of the hazards. Moreover, a significant factor which may influence vulnerability, and consequently the risk, is the coping capacity, that is "the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters" (UNISDR 2009) and the characteristics and circumstances of a community (Birkmann 2006). Based on these definitions, and following work developed at the archaeological site of Petra (Jordan) (Paolini et al. 2012), the concept of vulnerability in this research comprises three components: susceptibility or sensibility of each item, exposure to hazards, and coping capacity.
In light of this, vulnerability assessment is divided into physical (sensibility), contextual (exposure), and institutional vulnerability (coping capacity). Vulnerability assessment has been enriched with a standard set of specific indicators developed to ensure homogeneity in the analysis. For each indicator, a set of ranking criteria was defined to score vulnerability and equate it to the ranking categories of Low, Medium, and High (Table 4).

Table 4. *Indicators and criteria for vulnerability analysis in the public art resilience framework*

PAR FRAMEWORK			
PHYSICAL VULNERABILITY (SUSCEPTIBILITY)			
CLASS	HIGH	MEDIUM	LOW
INDICATOR	CRITERIA		
Material: type of material	Paint, wood, light	Ceramic, mortar	Stone, metal
Structure: type and quality of structure (ensemble and display)	Heavily damaged structures or inappropriate ensemble materials	Medium quality of the structure materials; insufficient elements	Good quality of the structure elements or appropriately reinforced
Condition and loss of elements, improper restoration materials	Structural crack, detachment	Loss of material (erosion)	Biological colonization, efflorescence
Foundation/ground: type of foundation	No foundation (item directly on ground)	Inappropriate foundation	Properly constructed foundation
Architecture (wall) condition	Poor state of conservation	Sufficient state of conservation	Good state of conservation
CONTEXTUAL VULNERABILITY (EXPOSURE)			
CLASS	HIGH	MEDIUM	LOW
INDICATOR	CRITERIA		

Exposure: type of exposure to climate factors	Total	Partial	No exposure
Accessibility	Direct contact	Partial or distant contact	Not accessible
Urban location: type of location	Traffic area Garden	Ouside historic urban center	Historic center
INSTITUTIONAL VULNERABILITY (COPING CAPACITY)			
CLASS	HIGH	MEDIUM	LOW
INDICATOR	CRITERIA		
Lack of CH protection	No CH protection	No CH protection	CH protection
Information, inventory and documentation system	No inventory	Inventory	Registered in an official inventory
Prevention plan and maintenance program	No prevention program	Asset is periodically controlled	Exiting maintenance activities
Professionals available	No professionals available	Occasional team	Expert team

Indicators are variables which act as an operational representation of an attribute, such as quality, characteristic, and property of a system (Gallopín 1997). The data required to measure the indicators of vulnerability has been gathered via: the expert questionnaire (institutional vulnerability), in situ observation and condition assessment (physical vulnerability), and territory analysis (contextual vulnerability).
The indicators for physical vulnerability (Table 5), defined based on the potential impacts of hazards and threats on the collections, are as follows:

- Type of material and type and quality of structure are fundamental factors contributing to the performance of artworks during an event or a process. Multi-material artworks or artworks composed of several elements are generally more vulnerable to hazards if they are not properly erected or reinforced.
- Condition and loss of elements are considered as an augmenting factor. Cracks and detachments are parameters which affect structural integrity and reduce performance of the entire structure, while material losses or improper interventions cause gradual deterioration and weakness.
- Type of foundation or ground and the condition of connected architecture are other key factors contributing to the extent of damage since several agents, such as water infiltration and biological colonization, can be transferred to the artworks.

Table 5. *Indicators of physical vulnerability class related to natural, socio-cultural, and institutional hazards applied to public art collections*

VULNERABILITY CLASS	PHYSICAL VULNERABILITY		
Hazards	Natural	Socio cultural	Institutional
Class I High V	Paint, light, wood artworks Artworks attached to a weak support/foundation or in poor state of conservation	Paint artworks in a poor condition	Paint, light and wood artworks in a poor condition
Class II Medium V	Ceramic and mortar artworks Artworks directly on the ground in sufficient condition	Artworks in sufficient condition	Artworks in sufficient condition
Class III Low V	Stone, metal artworks ensembled in an appropriate support/foundation Artworks in good condition	Artworks in good condition	Artworks in good condition

The indicators for contextual vulnerability (Table 6), based on the characteristics of the territory, are as follows:

- Type of exposure to climate factors that depend on display location: outside (totally exposed), under architectural constructions (partially exposed) or inside buildings (not exposed).
- Accessibility to the artworks and their surroundings that influences the possibility of damage derived from shocks or vandalism.
- In general, urban location is a key factor considering the variety of sites that influence the impacts of hazards on the collections: traffic areas, gardens, tourism areas, abandoned areas, etc.

Table 6. *Indicators of contextual vulnerability class related to natural, socio-cultural, and institutional hazards applied to public art collections*

VULNERABILITY CLASS	CONTEXTUAL VULNERABILITY		
Hazards	Natural	Socio cultural	Institutional
Class I High V	Artworks totally exposed or in a traffic area	Artworks accessible	Artworks outside the center
Class II Medium V	Artworks partially exposed or in gardens	Artworks partially accessible	Artworks outside the center
Class III Low V	Artworks inside buildings (covered)	Artworks not accessible	Artworks in the historic center (D.Lgs. 42/2004)

In the case of public art collections, coping capacity relies mostly on local administration and, in a broader context, on regional planning. Based on the case study, the most significant indicators for institutional vulnerability (Table 7) are as follows:

- Lack of national CH protection that represents the status of the legal framework for conservation and management, including cooperation between heritage organizations and disaster management bodies.
- Partial information about the collection from an artistic-historical point of view, coupled with a lack of digital systems to record periodically collected data on risk.
- Lack of existing prevention programs that include risk assessment and control, emergency response and recovery plans.
- Inappropriate restoration or emergency interventions carried out by unqualified personnel.
- Lack of availability of professionals with specific training in risk prevention.

Table 7. *Indicators of institutional vulnerability class related to natural, socio-cultural, and institutional hazards applied to public art collections*

VULNERABILITY CLASS	INSTITUTIONAL VULNERABILITY		
Hazards	Natural	Socio cultural	Institutional
Class I High V	Artworks not subject to any kind of protection against hazards (control, prevention activities)	Artworks that are not registered as a CH property	Artworks that are legally protected
Class II Medium V	Artworks not subject to conservation activities without control	Artworks that are not registered as a CH property	Artworks that are vulnerable due to the legal and institutional framework that provides partial legal protection
Class III Low V	Artworks that are protected and managed through a control and prevention program	Artworks that are registered as a CH property	Artworks that are legally protected

2.4. Risk analysis

A risk index has been applied to measure the level of risk to the collection's assets. The proposed method defines the risk for each vulnerability class (physical, contextual, and institutional) to the main hazards. Risk has been calculated using a semi-quantitative method, described by CCI and ICCROM (Pedersoli, Michalski 2016), to allow for the aggregation of the scores assigned to the components of risk: frequency (F) and impact (I).

The base parameter for the frequency score is the mean time between dangerous events. The impact depends on the calculated level of vulnerability (high, medium, or low) and is expressed as a percentage. The overall vulnerability scores assigned to each heritage element will be integrated into the risk assessment. To this end, and in accordance with the vulnerability indicators, each class of vulnerability has been related to an impact percentage based on the ability of a hazard to cause damage. For example, in the case of vandalism, the lowest vulnerability is represented by works in an inaccessible position, so the impact

there is zero. Conversely, in the case of humidity, all works, including those located in confined environments, suffer serious damage. For the risk analysis, a score has been assigned to each impact percentage (Table 8).

Table 8. *Impact % and score*

IMPACT	SCORE
%	
80-100%	5
60-80%	4
40-60%	3
20-40%	2
0-20%	1

The Magnitude of Risk for a specific hazard is obtained from the sum of the three scores deriving from physical, contextual, and institutional risk. Each risk typology derives, in turn, from the sum of the frequency of a certain hazard, with its impact calculated on the basis of the vulnerability type. The highest total-risk score of the total vulnerability is 30 and is derived from the sum of the three types of risk as a function of the frequency. The formula used is:

MR = PR (F + IPV) + CR (F + ICV) + IR (F + IIV)
where MR = Magnitude of Risk
PR = Physical Risk
F = Frequency
IPV = Impact Physical vulnerability;
CR = Contextual risk;
ICV = Contextual vulnerability;
IR = Institutional Risk;
IIV = Institutional vulnerability.

3. Results

The case study of San Gimignano has made it possible to verify the adopted methodological process and to obtain an evaluation of risk to the collection.
The process, following a procedure divided into stages, derives specific indicators and criteria to analyze the components of risk (hazard, sensibility, exposure, and coping capacity). To enhance the quality of the procedure and its findings, a triangulation of methods was applied to the data collection and analysis. Data from official reports, in situ observations, interviews and an expert questionnaire were used to evaluate risk awareness and hazards. Specific data analysis methods, such as indicator-based vulnerability assessment and risk index, have been applied.

3.1. Values assessment

The method integrates a values-assessment analysis to highlight any potential loss of the collection's significance. Tangible and intangible attributes that determine values have been identified from the study of public art as a cultural phenomenon.

Firstly, the analysis of values has made it possible to identify key elements that define the heritage character of the collections as a landmark of the public art phenomenon. Secondly, evaluation of the attributes of each work has made it possible to identify key elements that define the heritage character of the artworks and determine the values that each contains. The heritage value of San Gimignano's collections lies in their capacity to regenerate the historical landscape and to modernize the well-known medieval image of the town. Collections are a representative and significant example of a typically Italian artistic tendency, from the 1970s, to explore the relationship between contemporary installations and historical contexts. Artworks – which are curated by important contemporary researchers – are recognized at the international level because of their high artistic value. Each artist has chosen the context to realize a *site-specific* project, which bears significance related to the history of the territory. Installations stand out for their attempt to understand the cultural landscape and integrate with it, their form and design having been conceived as a function of the location in which they are placed. They have been realized with local materials such as stone, iron, ceramic, and mortar, and recall simple vernacular building traditions and construction materials. Collections have also placed value on local crafts since many of the artists used local craftspeople to execute their projects. Collections are also important for their educational value. They have high social value given that they were created with the principal aim of bringing contemporary art into the community. With this aim in mind, all the projects were accompanied by workshops and meetings between the local population and the artists.

A value-based approach should be integrated into the risk analysis process to determine how vulnerability and risk affect the attributes of each of the works of art. Despite the values assessment guide the decision-making process for treatments (Chmutina 2014), a methodology to assess the loss of value of cultural heritage is still extremely complex (Ravankhah, Chmutina, Schmidt and Bosher 2017). Loss of value is linked to the impacts identified in the following vulnerability analysis. However, in the case of public art, it is interesting to note how impacts are not always linked with a loss of value. For example, in the case of Luisa Rabbia, biological colonization forms part of the work's message. Consequently, cleaning can only be carried out in exceptional circumstances and as a measure to avoid significant damage. For that reason, the relationship between impacts and loss of tangible and intangible attributes should be established case by case, following the proposed indicators. In short, the balance between the significance and use of public art collections is very difficult to maintain and may require a review of current conservation theories.

3.2. Vulnerability assessment

The physical and contextual vulnerability index of the San Gimignano collection was determined via a study and comparison of the conservation state based on the level of exposure to the agents of degradation. Relating deterioration to indicators has established the criteria of high, medium and low vulnerability. Following the proposed indicators, it has been

found that, along with material, the type of structure and the display modality are the two determining factors for physical vulnerability. In this case, the resilience of the works could have been increased if the artist had been advised during the project by structural experts and restorers. The analysis has shown that the highest vulnerability is due to the parameters related to contextual vulnerability, which suggests the need for continuous monitoring. Finally, there is a clear division in institutional vulnerability between protected and unprotected works, although preventive conservation programs are non-existent in all cases. To verify the method, these criteria have been applied to each of the works in the San Gimignano collection. The analysis has determined that the most vulnerable works in the collection are those by Luisa Rabbia, Joseph Kosuth and Eliseo Mattiaci. In general and according to the standard criteria, the most vulnerable artworks are those made with mortar and paint, located outside the urban center and totally exposed to water and sunlight. Regarding institutional vulnerability, the questionnaire established that the lack of risk documentation and a management risk plan has a higher impact overall on the collections. This is a significant factor contributing to the high level of vulnerability. Nevertheless, some artists and curators do guarantee a period of maintenance that could be considered a positive factor.

3.3. Risk assessment

The risk analysis considered the frequency and impact of each hazard. Frequency was evaluated on the basis of past damage suffered by the collection, climate-related data, and natural events that characterize the territory. Impact was determined by relating the severity of the damage to each vulnerability typology.

The risk analysis revealed the greatest risks for the entire collection (Table 9). Among the natural hazards, those related to water – both rainwater and relative humidity – are the most relevant. Humidity gravely affects the entire collection, while rain causes significant damage to works with medium-high vulnerability; that is, to those works that, in addition to being composed of vulnerable materials, are situated in exposed locations. Humidity must also be related to temperature fluctuations, although this affects few works. Wind storms, although of medium-low frequency, also affect many of the structures that support the works, due to structural weakness, and many of the historic buildings in which the works are exhibited. Vandalism is a hazard that requires a detailed study as it does not affect all the accessible works – perhaps due to greater or lesser recognition of the works as artworks by the public. Finally, the results of the assessment emphasize that, in addition, diverse factors associated with coping capacity highly influence conservation, above all in the case of cumulative natural hazards and vandalism.

Table 9. *Risk assessment of San Gimignano's public art collections*

HAZARD	FREQUENCY		PV	PR	CV	CR	IV	IR	TOTAL
	T	FS	IS	TS	IS	TS	IS	TS	TS
Windstorm	10 years	3	5	8	5	8	5	8	24
			4,5	7,5	4	7	4,5	7,5	22
			3	6	4	7	3,5	6,5	19,5
Vandalism	5-10 years	3,5	4,5	8	4,5	8	4,5	8	24
			2	4	4	6	3	5	15
			0	2	2	4	1	3	7
Rain	6 months	4,5	3,5	8	4	8,5	5	9,5	26
			2,5	7	2,5	7	4,5	9	23
			0	0	0	4,5	3,5	8	12,5
Humidity	Daily	5	4,5	9,5	4	9	5	10	28,5
			3	8	3	8	4,5	9,5	25,5
			1	6	1	6	3	8	20

* H = Hazard; F = Frequency; PV = Physical vulnerability; PR = Physical Risk; CV = Contextual vulnerability; CR = Contextual risk; IV = Institutional vulnerability; IR = Institutional Risk; MR = Magnitude of Risk.
** T = Time; FS = Frequency Score; IS = Score; TS = Total Score

The analysis provided an overview of the main risks to the collection that identifies the most appropriate prevention and maintenance treatments for the largest number of works. To increase the resilience of San Gimignano's public art, exposure to humidity and rain must be reduced through the use of risk-reducing measures, such as protection features or new supports, and through risk-response actions, such as cover layers. In particular, anchoring systems need to be modified or restored where they have deteriorated as a consequence of water and salt migration from walled structures. To reduce the risk of sudden-onset events, such as seismic movements and wind storms, reinforcement or the replacement of weak structural elements must be carried out. The quality of conservation measures must be considered since most indicators do not exist or are poorly developed.

The analysis markedly emphasized high institutional vulnerability areas such as lack of control, risk assessment procedures, maintenance programs, and the availability of professional restorers. Risk planning and control is needed at an urban and site level that accounts for risks due to wind and rain storms, urban development, and vandalism. As a primary action, a control system should be established to avoid disasters such as the collapse of an artwork's elements. Another requirement is the preparation of an emergency-response plan to provide a guide for the salvage, triage, and stabilization of the collection after a shock. Finally, a maintenance program is required for the prevention and mitigation of cumulative processes such as humidity.

4. Discussion

Despite collections having become permanent elements in the regeneration of cultural landscapes, significant losses of physical integrity occur, including the disappearance of artworks. In the case of the public art collections of San Gimignano, some works have suffered grave deterioration in only a few years since their realization. Even when artists have been attentive to the quality and durability of their works – using more resistant materials such as stone, bronze, or ceramics – the combined effect of multiple factors impacts safeguarding by creating often unexpected damage. Restoration interventions have often been carried out in emergency situations that cannot resolve the above-mentioned weaknesses. In other cases, to avoid the loss of works or part of their elements, adaptation or transformation interventions have been enacted, including reinstallation or relocation, which threatens values such as maintenance of original context. For this reason, it is essential to establish from the outset a preventative conservation plan.

Using the case study of San Gimignano, which is representative of the Tuscany territory, the aim of the research was to develop an integrated and systematic method for assessing risk, which can systematically analyze and manage disaster (Chmutina 2014, 26), as the first and essential system of a preventive conservation plan applied to contemporary public art collections.

The variety of designs for public spaces requires not only a case by case evaluation, based on a dialogue between all actors, but also that there should exist a theoretical and practical framework able to guide the types of operations necessary to reduce the risk the works are exposed to. In addition, the ever-increasing number of artworks made with different techniques and materials, which are subjected to a multitude of risks due to their location and proximate architecture, require a prioritization that guarantees the plan's sustainability. A multidimensional assessment approach and integrated evaluation tools are required precisely because of the variety of the risk scenarios that characterize public art. The case-study analysis, using a holistic approach, has endeavored to increase resilience by defining indicators that assess values, vulnerability, and risk. Since disasters are triggered by a combination of all hazards and threats, such an approach provides clarity on conservation priorities and facilitates decision making.

Despite the opportunity for proactive long-term conservation strategies, new challenges may emerge. Since disaster resilience is highly influenced by "identification and reinforcement of the local potentials and capacities" (Lizarralde, Chmutina, Bosher and Dainty 2015, 102), several factors must be considered attentively, such as policies, training, cooperation between stakeholders, control and analysis. To achieve all this, legislation is required as a first step to ensure the integration of public art conservation into the territory's cultural heritage system. An institutional framework is also needed that provides a model of cooperation at all levels between the multiple stakeholders and actors who are responsible for the management of public art. Finally, a common methodology is required, along with standard operating procedures to reduce risk that can be incorporated into local emergency plans and that provide rules to manage and protect cultural heritage in the event of a disaster.

5. Conclusion

Since the inception, in the 1970s, of events carried out in the public space, Italy has become one of the territories most supportive of the phenomenon of public art, with installations, such as San Gimignano's collections, created as the result of occupation events in decentralized places. The growing commission of urban artworks arises from a plurality of interests that lead institutions to provide public spaces for artists. Even though many of these works are not under the protection of cultural heritage laws, social recognition of their cultural heritage and integration into the urban fabric urges us to reflect on and address the question of their safeguarding. Despite the rapid degradation of, above all and from the moment of installation, the weak elements of public artworks, to date, public art still suffers from a lack of integrated methodologies in disaster-risk management.

Concurrently, public-art collections can be assumed to be complex and dynamic systems that integrate aspects relevant to the exploration of the symbiotic relationship between heritage and the paradigms of sustainability and resilience that inform urban planning. In fact, public art forms an integral part of the built environment that contributes to strengthening the citizens' sense of belonging. Moreover, it plays a significant role in economic development at a local level, attracts tourist revenue and provides financial resources. Finally, it promotes cultural diversity and traditional knowledge, for example, through collaboration between international artists and local craftspeople when creating installations.

To ensure the survival of cultural heritage, both the 2030 Agenda for Sustainable Development and the New Urban Agenda focus on the need to move from principles to actions through the use of adequate risk analysis and evaluation tools. According to Disaster Risk Management Frameworks, such an approach, upon which disaster resilience greatly relies, constitutes a fundamental contribution to reducing vulnerability. In light of this, a risk-analysis model has been developed following international policies and frameworks, the results of which could be integrated into the general-management and conservation plan for the contemporary collections in the public space.

In conclusion, this research can play an essential role in establishing a risk assessment and mitigation plan applicable to other public-art collections. To optimally implement this goal, further research is needed into the evaluation of the influence of climate change.

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Sažetak

Metoda za integraciju ulične umjetnosti u okvire upravljanja rizikom: izazovi i prilike

Cilj. Cilj istraživanja jest prikaz razvoja integrirane i sustavne metodologije procjene rizika u suvremenim javnim umjetničkim zbirkama. Prikazani su ključni elementi plana upravljanja rizikom u području javne umjetnosti. Naglašava se unaprjeđenje zaštite kulturne baštine od prirodnih nepogoda i ekstremnih događaja povezanih s klimatskim promjenama i, mnogo značajnije, raspravlja o tome na koje načine zaštita može ojačati otpornost društvene i povijesne baštine.

Metodologija. U svrhu razvoja metodologije procjene rizika, istraživanjem je obuhvaćena povijesna jezgra grada San Gimignana (Italija), upisana na UNESCO-ovu listu svjetske baštine, upravo zbog svojeg jedinstvenog kulturnog krajolika. Suvremeni elementi toga krajolika nastali su kao rezultat nekoliko kulturnih inicijativa: *Affinità Elettive* (1994), *Arte all'Arte* (1998–2005) i *UmoCA* (2011). Ovim se istraživanjem naglašava da je očuvanje javne umjetnosti u San Gimignanu uvjetovano suživotom fizičkih, kontekstualnih i upravljačkih čimbenika.

Rezultati. Temeljem studije slučaja, u ovom istraživanju razvijeni su indikatori i kriteriji za analizu ranjivosti i izloženosti rizicima. U radu se analizira integracija javne umjetnosti u opći okvir upravljanja rizicima. Unatoč činjenicama da vrijednosti javne umjetnosti mogu doprinijeti otpornosti povijesnih urbanih jezgri, istraživanjem su otkriveni veliki izazovi koje je važno prevladati da bi se javna umjetnost mogla inkorporirati u smjernice općeg upravljanja rizicima.

Originalnost. Razvijen je model analize rizika, slijedeći međunarodne smjernice i preporuke, a koji se može integrirati u opće upravljanje i plan konzervacije za suvremene zbirke u javnom prostoru. Dodatno, prepoznavajući važnost društvenih, kulturnih i ekonomskih procesa u konzervaciji javnih prostora, procjena vrijednosti inkorporirana je u okvir upravljanja rizicima.

KLJUČNE RIJEČI: javna umjetnost, otpornost, povijesni kontekst, upravljanje rizikom, smanjenje rizika

The Italian experience and its contribution to the Union Civil Protection Mechanism in reinforcing cultural heritage protection through the *Procultther* project

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Abstract

Purpose. The aim of the article is to explain how the Italian response capacities for the safeguarding of cultural heritage at risk of disaster has been enhanced over the past twenty-five years and how it has contributed to raising the awareness of this issue at international level.
Approach/methodology. For this purpose, the main steps made in the last decades by Italy in including the protection of cultural heritage among other emergency issues are described below. In fact, Italy has made many efforts in the past decades to improve the emergency management of cultural heritage, paying particular attention to preparedness, prevention and response actions. Since the end of the past century, dedicated training courses have been organized at all levels as well as local, national and international exercises with specific scenarios dedicated to the protection of cultural heritage at risk of disaster in order to test specific procedures needed to ensure this type of response. In the meantime, the drafting of standard operating procedures specifically addressing the protection of vulnerable cultural heritage emerged as a result of a keen collaboration between the Italian Ministry of Culture (Italian acronym MiC) and the National Civil Protection Department (Italian acronym DPC).
Findings. In this process of constant evolution of operational and technical capacities aimed at reducing the risk of cultural heritage disasters, the combination of past experience and acquired competences of Italy, France, Spain, Turkey, ICCROM and Fondazione Villa Montesca has prompted the launch of the PROCULTHER project, co-funded by the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG-ECHO).
Value. The project aims to support and complement the efforts made by the European Un-

ion to strengthen cooperation between the EU Member States and Participating States in this field. In this sense, by pooling together European civil protection capacities and capabilities and providing for common standards enabling certified and well-equipped teams to work interchangeably when a disaster strikes, the Union Civil Protection Mechanism (UCPM), is an essential and effective system aimed at allowing a stronger and more coherent collective response. Under this framework, the project is promoting, for the first time, the development of a common European methodology, tools and capacities in order to include the protection of cultural heritage in the disaster risk management cycle and to ensure structured collaboration among cultural heritage and civil protection stakeholders at local, national and European level.

KEYWORDS: cultural heritage protection, disaster risk management, standard operating procedures, Union Civil Protection Mechanism

1. Introduction

As widely acknowledged, cultural heritage is more than an important economic resource linked to tourism; it is an invaluable source of our identity and evolution, as well as a driver of social development. It contributes to the continuous revaluation of cultures and identities, being a key vehicle for the transmission of experiences, skills and knowledge between generations and an effective catalyst for social cohesion (European Commission 2020). For this reason, resilience capacities of disaster-prone communities are indissolubly linked to the protection of tangible and intangible cultural heritage (Piacentini 2011). Therefore, protecting cultural heritage is also about protecting the life and dignity of communities at risk of disaster (UNESCO 2010). When a disaster strikes, emergency responders are the first to intervene to save lives and secure the areas affected. In the past years, due to the increasing impact of natural and man-made hazards on cultural heritage assets, the urgency of including the protection of cultural heritage in disaster risk management (DRM) processes has demonstrated to be crucial for improving the resilience of vulnerable communities. Continuous efforts have been exerted to facilitate understanding and dialogue about new interdisciplinary and cross-sectoral approaches in order to develop a comprehensive heritage protection strategy based on integrated conservation and risk management providing the potential for building resilience to disasters.

Over the years, the Italian Civil Protection System has gained a series of experiences that have enabled the progressive development of skills and tools dedicated to safeguarding vulnerable cultural heritage assets. In this sense, the considerable and persistent exposure to extreme natural phenomena has required more efforts in strengthening coordination capacities at various territorial levels. The Italian territory is exposed to almost all the main natural hazards: earthquakes, floods, landslides, forest fires and volcanic eruptions. Additionally, Italy has such a large amount of cultural properties to be considered one of the main cultural heritage holders in the world, counting more than 50 cultural sites included in the UNESCO World Cultural Heritage List. Currently, specific emergency procedures aimed to address the safeguarding of cultural heritage have been developed and the main stakeholders, involved in crisis management, as well as their tasks, have been well-defined. However, this had not been the case until recently, when those procedures were reported in a written form. In fact, until the first decade of the XXI century, the emergency measures, which were applied to cultural goods and buildings, consisted of good practices, handed

down verbally and then improved, time by time, by gathering knowledge from experience.
In the following paragraphs, the main steps taken by Italy in the last decades, both at national and international level, aimed at including the protection of cultural heritage among other emergency issues, are described. At European level, the management of dedicated EU funded projects such as the PROCULTHER project, enabled Italy to work together with other countries active in the field of protecting cultural heritage against disasters on defining common objectives in this sector, at European level.

2. The protection of cultural heritage in emergencies: the Italian experience

The modern Italian history concerning the protection of cultural heritage against natural risks started in the 1966's Florence flood, when many cultural assets belonging to the historical town had been endangered and, unfortunately, damaged, highlighting their fragility and their need of being protected (D'Angelis and Grassi 2020). At that time, a civil protection system did not exist and the country was not well prepared for facing such kind of events. Volunteers, neither structured nor organized in any sense, came from many parts of the world with the aim of helping in rescuing precious cultural goods, paintings, books and many of them were lost forever. Then, during the Umbria - Marche earthquake, in 1997, the rather newly founded National Civil Protection System realized that specific actions for protecting cultural properties were required. For the first time, dedicated commissioners were appointed in order to manage such particular issues. Meanwhile, fire brigade units and trained groups of organized volunteers started to specialize in the protection of cultural goods; new damage assessment templates dedicated to both movable and immovable cultural properties were drafted, and fire fighters started to set up specific short-term countermeasures, specifically dedicated to cultural heritage buildings (Barberi 2007).
The Abruzzo earthquake in 2009 was a very meaningful test bench for testing and enhancing the structures and procedures aimed at reinforcing the protection of cultural heritage at risk of disaster. A few weeks after the seismic event, a dedicated Vice-Commisioner for the Safeguarding of Cultural Heritage was appointed by the National Civil Protection Authority and the all the activities related to the protection of both movable and immovable cultural heritage were strongly coordinated between the Civil Protection Authority and the Cultural Heritage Authority (Marchetti 2010). In the following years, many efforts were made to improve the emergency response management of cultural heritage, paying particular attention to preparedness and response actions. Dedicated training courses have been organized at all levels and local, national, international exercises and specific scenarios dedicated to the protection of cultural heritage at risk of disaster have been performed in order to test those procedures: Eurosot 2005 and Terex 2010 on seismic risk, Mesimex 2006 on volcanic risk, Twist 2013 on tsunami risk, Neiflex 2018 on flood risk and Belice 2018 on seismic risk, among others. According to the experience gained, the existence of legal and institutional framework related to the management of cultural heritage at risk of disaster has proved to be essential. According to the Italian institutional framework, the primary normative reference at national level for the safeguarding of cultural heritage is the „Code of Cultural Heritage and Landscape" (2004), which assigns the tasks of protecting, preserving, and enhancing the cultural heritage of the country to the Ministry of Culture. Protection and conservation activities are carried out in standard times through preventive and supervisory actions on the assets, and,

in the event of emergencies, with security operations designed to minimize the damage resulting from these events. However, operating procedures specifically addressed to the disaster risk management of cultural heritage only appeared in the form of Regulation in 2012, as the result of a keen collaboration between the Italian Ministry of Culture and the National Civil Protection Department. This document was then updated and republished by the MiC as a Directive named "Direttiva MIBACT 23 luglio 2015" (Ministero dei beni e delle attività culturali e del turismo 2015) and it serves as the national reference for dealing with the protection of cultural heritage at risk of disaster. The Directive focuses on the emergency management of cultural heritage and it describes the competences of the administrations involved in the protection of cultural heritage and aims at providing guidelines and regulations to effectively guarantee, in case of emergencies originated by natural hazards, the protection and safeguarding of cultural heritage in synergy with the National Service of Civil Protection. Experience gained during the emergencies requiring the protection of cultural heritage, as well as the regulatory and procedural tools developed in recent years, are the starting point for the identification of the primary needs. During natural events of such intensity and extent as to generate an emergency, the National Civil Protection System (Italian acronym SNPC), which is composed of operational structures ranging from municipal to national level, is activated. When the emergency overwhelms local capacities so as to require national or international intervention, the DPC is in charge of the coordination and unitary management of the emergency relief operations. The Department gathers all the useful information on interventions and measures carried out at the local and regional level. After careful evaluation, if necessary, the Head of the Civil Protection Department convenes the Operational Committee that activates the various components and operating structures to contribute to the management of the emergency. During national emergencies, the DPC is in charge of setting up a national coordination structure for emergency management on site, the Emergency Management Command and Control Center – (Italian acronym DI.COMA.C), which operates in continuity with the actions of the Operating Committee. Within it, the 'Safeguarding Cultural Heritage Cell', co-led by DPC and MiC representatives, can be activated as a reference facility at central level for the implementation of activities related to the protection of cultural heritage affected by emergencies, with the role of monitoring and supporting all activities in place in the impacted areas. This Cell guarantees the involvement of the Regional Civil Protection Authorities as well as all the bodies of reference (Fire Fighters, Police Forces, Army Forces, Scientific Community, Religious Representatives and Civil Protection Voluntary associations specialized in the conservation of cultural heritage property and assets)[1]. With regard to cultural heritage, the MiC component, within the Operational Committee and the DI.COMA.C, will guarantee the necessary connection with its national and regional crisis coordination units, activated in the affected area to coordinate all interventions related to the safeguarding of cultural heritage, within the more general framework of civil protection activities. The connection between the operational structures of the MiC and the other members of the national civil protection system is essential both at central and peripheral level, to carry out all the activities related to census, damage assessment, buildings safety and securing operations, securing cultural assets and managing the rubble of cultural interest. Among all the actors who are usually involved in managing the protection of cultural heritage in emergencies, a specific role is covered by the Department of Fire Brigades - Public Rescue and Civil Defence (Italian acronym CNVVF). It is a civil structure through which the Ministry of the Interior ensures rescue activities and fire prevention

[1] For more details see: https://storico.beniculturali.it/mibac/export/MiBAC/sitoMiBAC/MenuPrincipale/Normativa/Direttive/index.html.

and extinction across the national territory. The CNVVF is also involved in conducting post-recovery short-term countermeasures and rescue activities on cultural heritage assets. Another relevant stakeholder to be mentioned is the Carabinieri Corp, Cultural Heritage Protection Unit (Italian acronym CC-TPC), which directly responds to the MiC for the tasks of safeguarding the national cultural heritage. It has information and analysis functions, also in support of the other police forces, and an operational department (divided into the Antiques Sections, Archaeology, Falsification and Contemporary Art), dedicated to investigation operations across national territory and abroad, in cooperation with international police forces. The CC-TPC supports MiC in all operations related to rescuing movable cultural heritage. After the recent seismic events, the Army has also been involved for the purpose of the recovery of rubble from the collapsed buildings of cultural interest, patrolling sensitive areas (presence of buildings and goods of cultural interest) and the provision of equipment for handling rubble and earth. The DPC also provides, where necessary, the support of specialized volunteering and the scientific community, through the competence centres. Indeed, voluntary organizations have assumed the role of a „national operational structure" and have become an integral part of it.

Volunteers are one of the most vital components of the system: over eight hundred thousand people spread throughout the national territory, are affiliated to organizations that operate in multiple specialized sectors. The role of volunteering is fundamental during emergencies, in particular as regards the safeguarding of cultural assets, with the task of supporting the operations related to securing movable cultural heritage, selecting cultural heritage rubble and setting up temporary warehouses as well as working areas for rescuing cultural goods (Legambiente 2010). The scientific community – competence centres, universities, agencies, research institutes - contributes to the National Civil Protection Service by providing technical and scientific support through monitoring, forecasting and prevention of the various risk hypotheses on the national territory, development projects, and technological innovation of monitoring networks and studies and research. They provide services, information, data, processing and technical-scientific contributions in specific areas. The scientific community, through agreements with the DPC, also provides structural experts who are part of the teams for the damage assessment of affected cultural heritage buildings, such as churches and palaces. The involvement of the Italian Episcopal Conference (Italian acronym CEI), the official assembly of the bishops in Italy, has also to be considered crucial, due to the presence of a huge amount of religious cultural buildings and goods. Its specific task within this reference framework is linking with institutions involved in the emergency management concerning ecclesiastical buildings and religious objects and the supply and provision of the CEI database to the bodies and administrations involved in the protection and safeguarding of cultural heritage.

3. The European experience of the PROCULTHER project

In this process of constantly adapting and strengthening capacities to reduce the risk of cultural heritage disasters, the combination of the experience and expertise of Italy has given the idea of proposing to other countries active in the field of protecting cultural heritage against disasters, to work together on defining common objectives in this sector. In 2019, Italy, France, Spain, Turkey, ICCROM, and Fondazione Villa Montesca launched the PROCULTHER project. Implemented within the framework of a Union Civil Protection Mechanism initiative and

co-funded by the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG-ECHO), the project aims at supporting and complementing the efforts made by the European Union to strengthen cooperation between the EU Member States and Participating States in this field. In this sense, the UCPM, by pooling together European civil protection capacities and capabilities and providing for common standards enabling certified and well-equipped teams to work interchangeably when a disaster strikes, is an essential and effective system to allow for a stronger and more coherent collective response.[2]

Since its creation in 2001, the UCPM has responded to hundreds of requests for assistance inside and outside the European Union, some of which were also related to the protection of cultural heritage. However, at this stage, the UCPM does not include any "Module", requiring registration by EU member States/Participating States, dedicated to protecting cultural heritage at risk of disaster. Procedures should be identified to allow interoperability among the existing UCPM modules in view of joint operations in Europe and at international level.

Under this framework, the PROCULTHER project is promoting the development of technical and operational capacities to reinforce cultural heritage protection in emergency as well as to enable the effective activation and deployment of an interdisciplinary UCPM driven module able to support requesting countries or interested international organisations in the protection of disaster-prone or affected cultural heritage assets. Based on the experience reported in the national reports and during the first international workshop, each partner has been assigned with topics to contribute to the elaboration of the document "Key Elements of a European Methodology to Address the Protection of Cultural Heritage during Emergencies". This choice has been dictated by the wish to make the elaboration process as participatory as possible and, at the same time, by the importance to guarantee the valorisation of national experiences and best practices/lessons learnt in the field of cultural heritage protection. Moreover, the document has been conceived to allow for an adequate transfer of knowledge and replicability of the contents proposed. In this sense, the document aims at promoting a better understanding of the processes and mechanisms needed to improve the safeguarding of cultural heritage at risk of disasters at both national and European level by ensuring high quality and interoperability standards. The process of scaling up and the debate among the Partners' working groups have provided a fruitful capitalization on the best practices and lessons learnt earned in recent years. In fact, the participatory approach, guaranteed throughout the elaboration phase, has highlighted the strengths and weaknesses of the mechanisms currently in place and helped to identify the margins of improvement to better advocate for a holistic and coordinated approach. In this sense, in order to build effective capacities in this field, the project has further explored many structural, technical and operational aspects on how to enhance the protection of cultural heritage at risk of disaster.

In particular, the document "Key Elements of a European Methodology to Address the Protection of Cultural Heritage during Emergencies"[3] proposes and deepens the following issues:

- the strengthening and/or the establishment and/or the enforcement of a legislative and institutional framework both at national and European level;
- the development of civil protection planning for the cultural heritage sector able to increase, in ordinary time, risk awareness, to organize the pooling of resources, to build skills

[2] For more details see: https://www.proculther.eu/.

[3] PROCULTHER Consortium Statement for the protection of cultural heritage at risk of disaster (16 November 2020)

and professional competence, and to ensure the connection between different administrations and institutions in DRM processes;
- the definition of training courses and exercises, to be possibly included under the learning structures of the UCPM, in order to strengthen and test capacities in this field;
- the structure and procedures of a team to be converted in a Module/Other Response capacity within the UCPM framework to ensure the safeguarding of cultural heritage at European and international level in case of emergency;
- a proposal of useful reporting tools for risk and needs assessment.

In this sense, the "Key Elements of a European Methodology to Address the Protection of Cultural Heritage during Emergencies" will cover the methodological and operational aspects related to the protection of cultural heritage, including a set of tools useful to improve DRM capacities in this field. At the same time, with the aim of strengthening a European approach toward the protection of cultural heritage by giving prominence to all the practices that have proven to be effective in DRM processes, the PROCULTHER project, through the organization of an international workshop, has provided an interesting space of discussion to revise the "Key elements [...]" currently proposed, as well as to discuss the inclusion of other practices that can enrich and make a European DRM approach more effective besides reinforcing cultural heritage protection.

4. Conclusion

A holistic and interdisciplinary approach is crucial to ensure the safeguarding of cultural heritage in emergencies, as well as to reinforce the resilience of vulnerable communities facing the impact of natural and anthropic hazards on their social and economic assets. Therefore, a structured collaboration among Cultural Heritage and Civil Protection stakeholders at national and European level lies at the core of the issue. Indeed, to ensure an effective management and protection of the cultural heritage at risk of disaster, stronger synergies among relevant Civil Protection and Cultural Heritage stakeholders should be addressed and reinforced at different territorial levels, promoting management models that link short-term relief measures with longer-term development programmes.

In order to provide a more sustainable and effective response to crises, the PROCULTHER project emphasizes, among other elements, the importance of defining, at European level, an interdisciplinary capacity/module within the framework of UCPM, able to support affected countries or interested international organisations during emergencies and in the prevention, preparedness and response phases, as well as strengthening inter-institutional coordination and communication among Civil Protection and Cultural Heritage authorities by establishing, through the UCPM, permanent consultation mechanisms and Standard Operating Procedures (SOPs) for emergency preparedness and response.

At the same time, in accordance with the priorities foreseen by the Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR 2015), the PROCULTHER project highlights the importance of setting up an effective risk governance specifically dedicated to cultural heritage, based on adequate risk-informed decision-making processes. This should serve to establish a coordinated approach to reduce the risk of disaster in this field as well as to guarantee appropriate financial and technical resources to protect cultural heritage in a sustainable way.

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Sažetak

Doprinos talijanskog iskustva stečenog kroz Proculther projekt Mehanizmu Unije za civilnu zaštitu u ojačavanju zaštite kulturne baštine

Cilj. Cilj ovoga rada jest objasniti kako su talijanski kapaciteti za zaštitu ugrožene kulturne baštine ojačali u proteklih dvadeset pet godina te kako je talijansko iskustvo doprinijelo pitanjima zaštite kulturne baštine suočene s rizicima na međunarodnoj razini.
Pristup/metodologija. U nastavku su opisani osnovni koraci koje je Talijanska Republika poduzela posljednjih desetljeća u uključivanju zaštite kulturne baštine u mehanizme upravljanja hitnim situacijama. Italija je uložila znatne napore posljednjih desetljeća u poboljšanje sustava kriznog upravljanja kulturnom baštinom, posvećujući posebnu pozornost aktivnostima pripravnosti, prevencije i odgovora. Još od kraja 20. stoljeća organizirani su posebni tečajevi obuke sa specifičnim scenarijima posvećenim zaštiti kulturne baštine suočene s rizikom od katastrofa u svrhu testiranja posebnih procedura nužnih za osiguranje takve vrste odgovora. U međuvremenu, priprema operativnih procedura posebno usmjerenih na zaštitu ranjive kulturne baštine nastala je kao rezultat bliske suradnje između talijanskog Ministarstva kulture i Odjela za civilnu zaštitu Talijanske Republike.
Rezultati. Procesi stalnog unapređivanja operativnih i tehničkih kapaciteta usmjerenih na smanjenje rizika od katastrofa u području zaštite kulturne baštine, te kombinacija iskustva i stečenih kompetencija u Italiji, Francuskoj, Španjolskoj, Turskoj, Međunarodnog centra za istraživanje očuvanja i restauracije kulturne baštine i Zaklade Villa Montesca potaknuli su pokretanje PROCULTHER projekta, sufinanciranog sredstvima Europske komisije za humanitarnu pomoć i odjela za civilnu zaštitu.
Vrijednost. PROCULTHER projekt teži podržati i nadopuniti napore Europske unije u ojačavanju suradnje između država članica i suradničkih država u ovome području. U tom smislu Mehanizam Unije za civilnu zaštitu predstavlja neophodan i učinkovit sustav koji omogućava snažniji i koherentniji kolektivni odgovor, a zahvaljujući udruživanju europskih kapaciteta civilne zaštite i osiguravanju zajedničkih standarda omogućeno je kvalificiranim i dobro opremljenim timovima naizmjenično djelovanje u trenutku katastrofe. U ovakvim okvirima, PROCULTHER projekt prvi puta promovira razvoj zajedničke europske metodologije, alata i mogućnosti da uključi zaštitu kulturne baštine u ciklus upravljanja rizikom od katastrofa te da osigura strukturiranu suradnju između sektora kulture, civilne zaštite i dionika na lokalnim, nacionalnim i europskim razinama.

KLJUČNE RIJEČI: Mehanizam Unije za civilnu zaštitu, standardne operativne procedure, upravljanje rizikom od katastrofa, zaštita kulturne baštine

Covid-19 crisis

Future proofing heritage: Futures Thinking approaches to aid recovery and renewal during the Covid-19 crisis

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Abstract

Purpose. This paper aims to illustrate how organisations, especially cultural heritage organisations, can respond to a crisis and plan for recovery when dealing with multiple future uncertainties by applying Futures Thinking techniques. It does this by describing the approach that Historic Environment Scotland (HES) has been taking to plan for recovery and renewal during the COVID-19 pandemic.
Approach/methodology/design. The paper uses the case study methodology to explore how different Futures Thinking techniques have been used to build flexibility in HES's work when facing an uncertain future. The paper will also examine how the methodology used in this process will aid the development of a Futures Thinking toolkit and a Virtual Intelligence Hub in support of all HES's operations.
Findings. This paper demonstrates how Futures Thinking techniques, such as scenario planning, can be effectively used to map critical uncertainties and identify business priorities across different possible scenarios for cultural organisations. It does so by illustrating the journey taken so far by HES to embed Futures Thinking techniques in the organisation, how it engaged with these and used them to begin the process of creating resilience and sustainability in its operations during this crisis.
Originality/value. Because cultural organisations do not traditionally engage in Futures Thinking, this paper makes the case that such tools are a valuable approach to foreseeing and surviving crises.

KEYWORDS: COVID-19, crisis response, Futures Thinking, heritage, policy, recovery, strategy

1. Introduction

1.1. Culture organisations taking a Futures Thinking approach

It is very challenging for organisations to respond to a crisis and plan for recovery when facing many unknown variables. On a very general level, organisations around the world have been dealing with the same global uncertainties, but with different implications at local level. For instance, at the time of writing, we still do not know how quickly the pandemic is going to be contained, despite the introduction of COVID-19 vaccines. We also do not know what the consequences on the economy might be and how quickly the recovery might occur (Deloitte 2020). During these months, every country's health care system has responded differently to the crisis on a national and often regional basis, and patterns have been difficult to foresee. We also do not know what lasting psychological impacts these lockdowns, quarantines and restrictions might have on people.

Ultimately, we cannot know what these variables are going to do. We do not have a crystal ball and cannot foretell what the future might bring. However, depending on what these different variables might do, we will have different possible scenarios.

Futures Thinking and foresight approaches can help any organisation plan for different possible scenarios in order to become more future-proof – more aware of potential changing conditions, more adaptive and more responsive to change. Futures Thinking tools can help gather intelligence, analyse the dynamics of change and explore what the future might look like in five/ten years' time. These tools can be used by organisations at both strategic and operational levels to capture external trends impacting on organisations, to enable them to plan their resources for changing and/or different scenarios.

However, Futures Thinking, foresight approaches and long-term horizons are not usually associated with the often more traditional approaches adopted by culture or heritage organisations. Culture organisations, especially operating in the public sector or state-funded, are often constrained financially by restrictions on public funds expenditure and financial year reporting – known as 'annuality'. These constraints make it more challenging for public agencies in this position to plan for longer-time horizons, making it sometimes impossible to look beyond the current financial year. The literature review around Futures Thinking applied to public bodies, and particularly, heritage organisations, is certainly scarce though not quite non-existent. While culture and heritage bodies have not necessarily embraced futures and foresight approaches, publications such as *Tools for Futures, Thinking and Foresight Across UK Government* (United Kingdom Government Office for Science 2017) have been circulating in the wider government space for some years.

This paper will focus on Futures Thinking approaches to recovery and renewal that could be adopted by heritage organisations or, in fact, by any organisations in times of crisis. It will examine the case study of Historic Environment Scotland (HES), the lead public body and charity responsible for understanding, protecting and celebrating Scotland's historic environment, and how Futures Thinking and foresight techniques have been embedded in the organisation's strategy and operations to tackle the COVID-19 crisis.

The pandemic had a severe impact on HES's operations, as the income that we generate from visitors to the historic properties that we manage was dramatically reduced due to closures of visitor attractions all around Scotland. In light of all the global and local critical uncertainties, Futures tools were used to formulate three–five-year strategic planning to

increase the resilience and sustainability of the organisation.
We will examine the methods employed and how they were tailored to the specific needs of HES. We will start from a scenario-planning model produced by Deloitte (Deloitte 2020) and adapted by Scottish Government and Scottish Enterprise (Scottish Government & Scottish Enterprise 2020), which was used to open futures-focused conversations at senior organisational level. We will show how we used this scenario model to identify opportunities for the organisation in the different scenarios. We will then continue by looking at how we used a PESTEL (Political, Economic, Social, Technology, Environmental and Legal) analysis to examine the implications of critical uncertainties on the heritage sector and our organisation and identify focused priorities in different thematic areas.
The paper will show the steps that have been taken by HES, whilst recognising that this is only the start of a long process into Futures Thinking for the organisation. The aim of the paper is to share this experience and methodology with other organisations which might want to embark on a similar journey. The paper aims to demonstrate practical guidance and lessons learnt, being mindful that for culture organisations, especially heritage organisations such as HES, which are harnessed to the past by their very nature, thinking about and planning for the future can be an arduous thing to do.

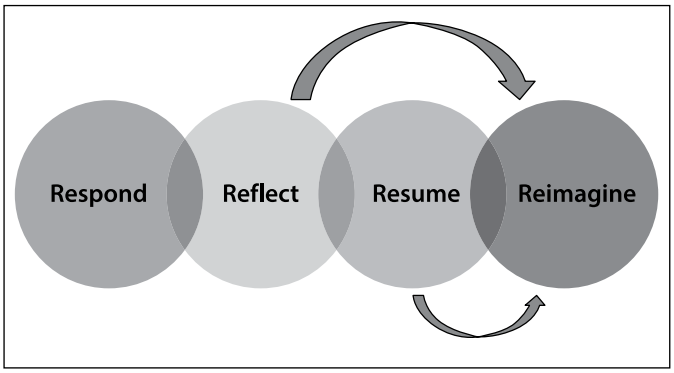
1.2. HES and its challenges

HES is a national public body and a Scottish charity dedicated to understanding, protecting and celebrating Scotland's places now and sustaining the historic environment and its benefits for future generations. HES's vision is that Scotland's historic environment is cherished, understood, shared and enjoyed with pride by everyone (HES 2019).
By historic environment, we refer to both tangible and intangible cultural heritage, from castles to standing stones and collection items, from collective memory and social history, to storytelling and ephemera. In this definition, we need to also consider what heritage means to communities to give a holistic and diverse picture and build a comprehensive sense of place and belonging for people. HES's remit is therefore very varied, and includes six World Heritage Sites, 50,000 listed buildings, 40 battlefields, and people's stories and traditions connected to these places. We also directly manage physical collections and digital archives – five million photographs and drawings, and tens of millions of aerial photos. HES is at the forefront of researching and understanding the historic environment and addressing the impact of climate change on its future. In 2019, we provided grants of more than £14 million a year, stimulating regeneration, delivering benefits for communities, promoting sustainable economic and rural development and reinforcing local identity and a sense of place.
HES also performs statutory functions to protect our places and promote sustainable development through the designation of historic environment assets, consents relating to scheduled monuments, and our role as a statutory consultee. We provide advice, guidance and training and promote participation through programmes of education, engagement and skills sharing.
We care for more than 300 properties of national importance all across the country and are the largest operator of paid visitor attractions in Scotland, with 75 sites operated commercially. We rely on visitors for our income and, therefore, our financial sustainability. However, whilst in 2019–20 we welcomed five million visitors to the properties in our care, due

to the pandemic and various lockdowns, in 2020–21 we only had 250,000 visitors, with a detrimental impact on our finances.

HES was therefore forced to rethink its model to improve our sustainability and flexibility to withstand crises as an organisation.

HES identified Futures Thinking techniques as an effective way to address the same challenges as other culture organisations face, such as budget and resources, as well as other trends that have been exacerbated by the pandemic. HES has been applying Futures Thinking with a three to five years' time horizon in all the organisation's four phases of response to the pandemic – Response, Reflect, Resume and Reimagine (Graph 1).



Graph 1. *Futures Thinking feeds into all four phases of HES's response to the COVID-19 crisis* (Source: Chiara Ronchini, HES, 2020)

Using a time horizon longer than the financial year to analyse trends and plan for the future has helped HES to embed a forward look into its operations and aid strategic planning in face of critical uncertainties.

2. Methodology

2.1. The scenario matrix model

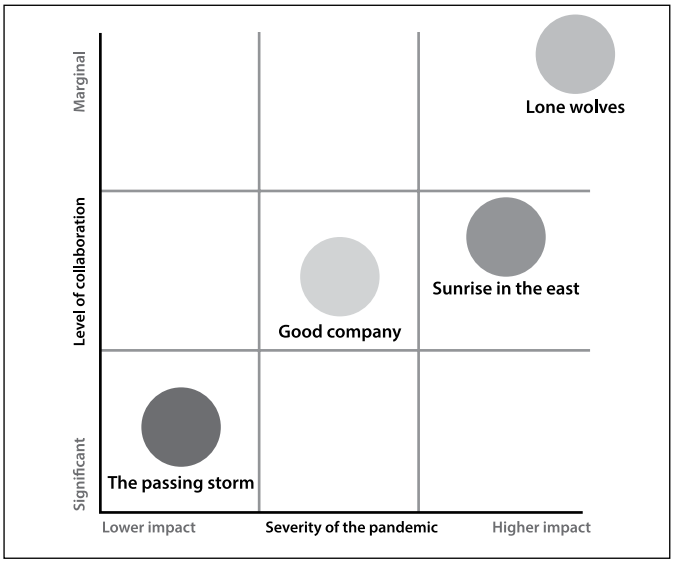
For a year before 2020, HES had already started exploring the use of Futures Thinking techniques to capture and analyse trends, and therefore improve its ability to be responsive to challenges and proactive in terms of opportunities on the horizon (United Nations Development Programme [UNDP] Global Centre for Public Service Excellence 2018). The adoption process of these techniques was dramatically accelerated by the pandemic. Since April 2020, HES started planning how to trial and test different Futures Thinking techniques to respond to the COVID-19 crisis.

In May 2020, a few HES members of staff participated in a series of scenario-planning workshops led by the Scottish Government and Scottish Enterprise (Scottish Government & Scottish Enterprise 2020). These workshops were based on a COVID-19 scenario model developed by Deloitte (Deloitte 2020), which considers two main variables – the severity of the pandemic, and the level of collaboration between countries and within a country. These variables, also called 'axes of uncertainty', have been selected as the main critical uncertainties after considering a series of other variables – such as the health care system

and the economic consequences of the crisis – as best placed to create the most valuable scenario matrix (United Kingdom Government Office for Science 2017).

According to this model, these two variables shaped four possible future scenarios (Graph 2):

1. The Passing Storm
2. Sunrise in the East
3. Good Company
4. Lone Wolves



Graph 2. *The Deloitte model identifies four, equally possible scenarios*
(Source: Chiara Ronchini, HES, 2021)

Sitting at the bottom left of the graph, in The Passing Storm scenario the pandemic is managed effectively soon, but with lasting repercussions on lower- and middle-income individuals, and communities. The other extreme is Lone Wolves, the scenario in which the pandemic cannot be contained due to poor collaboration between countries, giving way to the rise of isolationism policies and xenophobia.

In between these two scenarios, Good Company sees companies stepping up to find a solution, whilst disease progression is in waves. Finally, Sunrise in the East features the rise of East Asian Nations, who can contain the pandemic successfully and recover their economy more quickly than the rest of the world.

A key aspect of this scenario-matrix model is that all scenarios are equally possible. Therefore, when discussing these possible scenarios, it is essential to plan for what all these scenarios can bring both in terms of challenges and opportunities.

Prompted by these workshops based on this scenario model, the first step for HES was to adapt this model to tailor it to our changed operating environment and ensure it was relevant to HES, for instance by listing the potential consequences for the organisation and the historic environment in Scotland in each situation.

We then used this scenario model as a springboard for a series of discussions with our Senior Management Team and Board of Trustees, aimed at considering a variety of potential futures as well as looking at opportunities for HES in each scenario. These scenarios

worked well as an introduction to Futures Thinking for the organisation, gradually presenting concepts such as critical uncertainties, drivers for change and possible futures. This gradual approach enabled more forward-looking conversations to occur, starting to shape a futures-orientated strategy.

The methodology followed indicates that the opportunities and actions that come up in every scenario are the ones to prioritise, as they are the ones that should be implemented regardless of scenario. As an outcome of these early Futures workshops, Senior Managers were already able to identify a few initial priorities, for instance the need for a more sustainable business model and a strategy for working flexibly, to focus on and implement in the medium term, no matter what the future would bring. Seeing already the benefits of foresight approaches, the Senior Managers were able to further endorse the project's next steps, giving permission to explore issues that could challenge existing assumptions and go beyond business as usual (OECD 2019).

2.2. PESTEL Analysis

These scenario workshops were a useful introduction for HES to Futures Thinking. In order to prioritise action further and set out a more solid strategy, workshops were held based on a PESTEL Analysis model.

PESTEL analysis sits at the core of most futures and foresight work, as it helps identify and map 'change drivers' – the key trends and factors shaping the long-term development of a policy area. Change drivers are typically characterised as the political, economic, societal, technological, environmental and legislative factors (United Kingdom Government Office for Science 2017).

We tailored our PESTEL analysis to HES and the cultural heritage sector – for each of the six PESTEL components, we identified a broad range of change drivers, and associated opportunities and threats relevant to the organisation and the historic environment. We followed best practice in this case, as it is recommended to identify as many change drivers as possible rather than to think too narrowly and miss what could be important for the future (United Kingdom Government Office for Science 2017). This approach helped us weigh up implications for us and the sector in each PESTEL area.

In terms of the Environmental component, for example, both key global and key local drivers were identified, alongside their potential opportunities and threats. For instance, global drivers such as the Climate Change emergency will require us to think about new and more effective ways to manage our heritage, offering both new challenges as well as opportunities to the cultural heritage sector and HES. On a more local basis, drivers such as the Scottish Government targets for net-zero carbon to be achieved by 2045 can provide an opportunity to focus on the value of existing resources and infrastructure, on reuse, repair, and maintenance – rather than reducing emissions and waste from new-build construction –, on retrofitting, and on traditional materials and skills.

In another example, as part of the Economic component, we analysed a wide range of drivers, including the deep recession caused by COVID-19 in the UK and internationally. Consensus about the economic outlook has been tending towards the worse end of early predictions, and together with uncertainty and behavioural change this may lead to a smaller '90% economy' in the long term. On the one hand, an economic recession

alongside the Scottish Government's prioritisation of key sectors – such as health and education – may lead to flat or reduced Government funding for the next few years, which would negatively impact on the culture and heritage sectors, and the delivery of our functions. On the other hand, a grim economic and financial outlook may provide incentive and an opportunity to review HES's financial and business model, looking at options to further diversify income, develop fundraising capacity and implement new approaches.

Further workshops were held to discuss the opportunities and threats brought by the key change drivers analysed. These PESTEL workshops, alongside the previous scenario workshops, enabled the HES Senior Managers to identify a set of heightened priorities to re-focus our strategy and action for the next three to five years.

3. Results

3.1. Heightened Priorities

The five HES's heightened priorities are: Green Recovery; Localism; Sustainable Tourism; Skills; and Children and Young People. After the Futures workshops, it was agreed that these five areas of work will be given more prominence in our strategies as they are likely to still be the vital priorities for years to come. These are not new priorities for the organisation as, prior to the COVID-19 pandemic, work in all these areas was already being taken forward by HES, as it contributed to our Corporate Plan outcomes.

As a further exercise, for each priority the project team devised a tailored SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, especially highlighting opportunities and threats for HES. These were discussed during transformative ideas sessions with HES Senior Managers and moderated by experts in the field who would offer a balanced view of the subject in hand and help the group consider different and external viewpoints during their discussion. The aim for this type of session is to identify transformative ideas that can bring positive change to aid recovery and renewal of the organisation.

Wider participation is essential to enable real transformation by introducing actors external to an organisation and get broader representation across the whole system (Kahan 2012). These transformative ideas sessions on heightened priorities were therefore also an opportunity for the organisation to employ co-design and service-design approaches to widen participation and obtain a fresher, more transformative perspective on possible futures. An example is the involvement of the HistoricScot Youth Forum in the discussions with Directors around the Young People and Skills priorities (Young Scot 2021).

The HistoricScot Youth Forum is a partnership project with Young Scot, the national information and citizenship organisation for young people aged 11–26 in Scotland. Throughout the course of the project, the HistoricScot Youth Forum has comprised a very diverse group of up to 35 young people from across Scotland, with the aim to improve youth engagement and participation with HES and the historic environment. The forum's contribution in the heightened priority sessions with HES was instrumental to including their views in the organisation's future plans. In the true spirit of co-design,

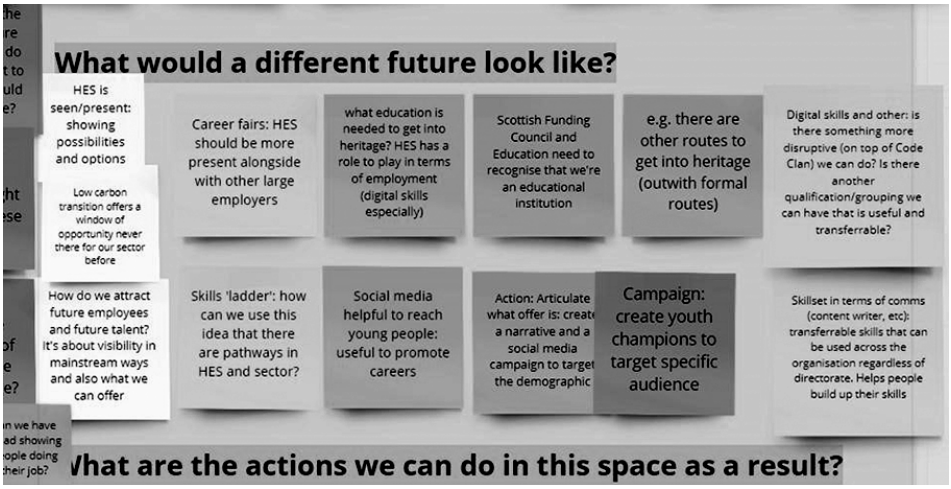


Figure 1. *From our Skills workshop: young people's ideas captured on post-it notes on a Miro board* (Source: Chiara Ronchini, HES, 2020)

youth empowerment and leadership, the young people participated in the strategic conversations as equals, contributing many ideas, leading the discussions and challenging perspectives (Figure 1). This was a very new approach for HES, who had never involved young people in the strategic planning for the organisation before. Thanks to the success of this co-design approach, the partnership with the forum is still ongoing to further improve youth participation in decision-making processes and develop a Youth Action Plan for the organisation. Involving young people more in all HES activities will ensure that the organisation delivers relevant outcomes for them and strengthens the future resilience of the heritage sector.

As part of this transformative ideas exercise on heightened priorities, further actions were identified for each priority area to future-proof the organisation and aid recovery. In the longer term, the aim for these heightened priorities is to help HES achieve a higher degree of resilience and adaptability in a constantly changing context, by taking an evolving approach and continuously taking multiple drivers for change and variables into consideration.

Our vision, as stated in our Corporate Plan, remains a relevant and essential part of who we are. This Futures exercise builds on this vision by taking a more Futures-orientated dimension into account. Going through this process has never been so timely because of the increased demand on resources and budgets exacerbated by COVID-19. Futures Thinking enabled HES to prioritise activity more clearly, be more forward-looking and increase the sustainability of our organisation, focusing our resources on what is important now and in the next three to five years.

3.2. Futures-Thinking tools and resources

During the pandemic, a number of Futures tools were used, such as Horizon Scanning for gathering intelligence, Driver mapping (PESTEL) and Axes of uncertainty to analyse the operating context, and scenarios planning and SWOT analysis to explore how different conditions might support or constrain the delivery of policy and strategy objectives

(United Kingdom Government Office for Science 2017). Using HES as testing ground enabled us to pilot Futures Thinking techniques and start compiling all the learning in a Futures Toolkit.

The toolkit is conceived as a resource for the organisation to get more acquainted with different techniques and select the most appropriate tool in each situation, whether it is about gathering intelligence, investigating the dynamics of change or exploring what the future might look like. Inspired by the much more comprehensive UK Government 'Futures Toolkit' (United Kingdom Government Office for Science 2017), the HES Futures Toolkit contains a selection of trialled and tested techniques, as options available for staff who wish to embed Futures Thinking in their work.

In parallel to the delivery of Futures Thinking workshops, HES established a Virtual Intelligence Hub in September 2020, both in response to COVID-19 and the need for the organisation to have one central repository for intelligence and horizon scanning. The Hub aims to be a platform for everyone in the organisation to gather, share and lift the latest intelligence to produce reports and presentations, and inform policy and strategy on many different themes.

To fulfil its technical specifications and utilise existing organisation resources, the Virtual Intelligence Hub has been hosted in SharePoint. A small team have been using the Hub for over nine months uploading new content, testing its functionalities and improving its searchability, with the more immediate aim to broaden the use of the Hub to the wider HES in 2021. It is hoped that, in the longer term, this platform will also be shared externally to maximise the benefit of knowledge sharing with the whole heritage sector.

The Futures Toolkit alongside with the Virtual Intelligence Hub will be resources available to the whole organisation to support our operations, as well as embed Futures in our thinking.

4. Discussion

The COVID-19 pandemic was the unfortunate, but timely opportunity for HES to embark on a Futures Thinking journey, and test different tools and techniques to support more robust planning. Arguably, the key part of HES's journey has been the journey itself, as this has been a process of growth and challenge for the organisation. Amid this crisis, HES was forced to rethink priorities and resources to increase its sustainability and resilience – and Futures enabled the start of this paradigm shift in the organisation.

HES is only at the beginning of a long journey. The organisation has only experimented with Futures Thinking techniques, tools and resources for over a year since the start of the pandemic. More work is still necessary for HES to complete this paradigm shift (Klakurka and Irwin 2016) and truly embed Futures in the day-to-day running of the organisation. Whilst still at the early stages, we have already acquired many useful lessons, encountered stumbling blocks but still have some questions left unanswered. For instance, when we started this process, we could not find any literature review or comparable experiences in the cultural heritage sector, but only some references to Futures applied in the public sector. Since then, a few more studies have been published around

Futures Thinking and heritage, mainly from an academic rather than a practitioner's perspective (Holtorf and Högberg 2020). Sharing our experience with similar organisations becomes therefore essential to bridge that gap between the use of Futures and the operational, legal and financial planning constraints often faced by public-sector culture organisations.

Amongst many, two learning points are noteworthy: firstly, the importance of tailoring Futures to the specific needs of the organisation and the heritage sector; secondly, the need to empower the organisation to build capacity and buy-in. The coupling of these two key elements made it possible for HES to undertake intelligence gathering, analysis and strategic discussions as a collective and collaborative exercise. Participatory, interactive processes – albeit held entirely virtually due to pandemic restrictions – helped the organisation familiarise with a different way of thinking and the concept of transformative ideas. Senior Managers shared perspectives with other colleagues, external speakers and young people, challenging views, agreeing on necessary change and taking ownership of all decisions in a collaborative setting.

Whilst being bespoke and participatory, the whole approach to Futures also benefited from being agile and incremental in its delivery. On the one hand, agility has been essential to ensure that everyone in the organisation was able to become used to a new way of thinking, gradually introducing people to the concept of Futures and its applications. On the other hand, this more iterative, agile model translated in a less than ideal, shorter time horizon for the organisation to apply Futures Thinking. Whereas the optimal future horizon for this type of exercise would have been ten years to allow for more longer-term strategic thinking, HES decided to focus on the three-to-five-year horizon. In Futures terms, this horizon is called Horizon 2, a space to implement transition activities and innovations, where people try things out in response to the ways in which the landscape is changing (H3Uni Resource Library 2021). Horizon 2 is not as forward-looking as Horizon 3, which instead looks at changing drastically and completely the dominant, business-as-usual system. Despite the limitations of this shorter horizon, three-to-five-years proved to be a more manageable timeframe for the organisation to look at the future – already an important step for a public body like HES, with planning cycles usually tied to a one-year time horizon due to its funding and financial obligations. A horizon limited to the financial year, instead, would not have allowed the same level of innovative thinking and forward look. In Futures terms, a Horizon 1 represents 'business as usual', and can only be shaken once the world changes and aspects of business as usual begin to feel out of place or no longer fit for purpose. With the pandemic bringing systemic change to our operating environment, it was vital to look at least at Horizon 2 to go beyond 'business as usual' and try new ways.

A more gradual, agile approach could also be favoured by other public agencies that would like to embark on a similar journey into Futures Thinking, but that do not yet possess the right experience or that organisational mindset to jump in at the deep end.

5. Conclusion

Public-funded heritage organisations are often more constrained in their operations than private non-heritage organisations, therefore resulting in a more traditional response to crises. Rigid funding and business models pertaining to public bodies make it more difficult to employ an agile, iterative and forward-looking approach. When facing a crisis, these organisations might find it challenging to deal with multiple uncertainties and focus on scenario planning, often resulting in waiting for a crisis to resolve itself, not thinking about future sustainability and recovery, and going back to 'business as usual'. In worse cases, some organisations might not even be able to go back to business as usual, as failing to re-imagine a future and build in some sustainability might make them un-fundable in the longer term and lead to their collapse.

Acutely aware of the limitations of the sector and the challenges of the changing context we are operating in, this paper shared the experience of a large, national heritage body in taking a Futures approach to the COVID-19 crisis. Hopefully this paper has shown that it is indeed possible, and valuable, to apply Futures Thinking techniques in cultural heritage, despite all these constraints. The whole process was helpful for HES to think more proactively and build some sustainability in our strategy and operations. It ultimately helped HES to better focus time, resources and energy on what is important, increasing the organisation's resilience in response to the current crisis, laying the foundations for recovery and hopefully building some adaptability to any challenges the future may bring.

Only time, and continuous practice, will tell if HES is successful in embedding Futures Thinking in its operations. A key measure of success of this project will be ensuring that the learning and tools available to the organisation, such as the Future Toolkit and the Virtual Intelligence Hub, are user-friendly and fit-for-purpose. Staff using the toolkit to shape a Futures session or researching the hub to prepare a report are two examples of what an ideal outcome would look like. Another key measure of success will be to what extent the organisation is able to capitalise on the heightened priorities and key actions, such as increasing diversification of income sources, for effective recovery and renewal. Currently amid this very process, it is too premature to say how successful HES has been to achieve long-term resilience and sustainability.

We believe that there is scope and benefit for the organisation to apply Futures Thinking and foresight approaches to improve how decisions are made in the present (Hines & Bishop 2015), with the aspiration that this way of working becomes second nature to HES. Even at these early stages, sharing lessons learnt with other organisations is vital. Some questions still remain unanswered – for instance, we do not know yet whether we stress-tested our policies and strategies enough to future-proof them to better withstand the test of time and real-life circumstances. As we progress, we are also formulating new questions: 'How are any new critical uncertainties going to shape new possible scenarios?' 'How are we going to ensure that our heightened priorities will still be relevant in years to come?'.

Questioning and challenging the methodology are also part of the process. Organisations embarking on a Futures project need to continue to be critical, posing questions and reviewing change drivers to ensure that policies, plans and strategies are weighing up multiple variables and capturing new potential priorities. By sharing this live journey with a wider, global audience, we want to open a channel of communication for mutual learning,

so we can both challenge and be challenged. Despite the limitations of the sector and the setbacks of the pandemic, our aspiration is to continue to use HES as a live laboratory to experiment with Futures through collaborative and inclusive discussions. Keeping an eye on a longer-term horizon as well as our minds open to ideas and learning from others will require allocating resources to do more intelligence gathering, horizon scanning, scenario planning and stress-testing our work through co-design and participatory workshops. This will also require HES to be agile and adaptable to overcome the rigidity of annuality and business models, or any new critical uncertainties brought by future crises.

Hopefully, this work has already improved HES's ability to plan for and plan through new crises to a certain extent and may be of inspiration to other organisations facing similar challenges.

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Sažetak

Zaštita baštine u budućnosti: tehnike predviđanja budućnosti kao pomoć oporavku i obnovi za vrijeme Covid-19 krize

Cilj. Ovaj rad nastoji prikazati na koji način baštinske organizacije mogu odgovoriti na krizu i plan oporavka u slučajevima kada se radi o mnogostrukim budućim neizvjesnostima i to koristeći tzv. tehnike predviđanja budućnosti (engl. *Futures Thinking*). U radu se prikazuje pristup koji je Historic Environment Scotland (HES) koristio pri planiranju oporavka i obnove za vrijeme Covid-19 pandemije.

Pristup/metodologija/dizajn. U radu se kroz studiju slučaja prikazuje kako su raznovrsne tehnike anticipiranja budućnosti koristile da bi se postigla fleksibilnost rada HES-a. Radom se također ispituje kako će metodologija korištena u tim procesima pomoći u razvoju tehnike anticipiranja budućnosti i inkubatora virtualne inteligencije kao mehanizama podrške HES-ovim aktivnostima.

Rezultati. U radu je prikazano na koji način tehnike predviđanja budućnosti, kao na primjer planiranje scenarija, mogu biti upotrijebljene u mapiranju kritičnih neizvjesnosti i identifikaciji poslovnih prioriteta u različitim mogućim scenarijima neke baštinske organizacije. Prikazan je put koji je HES prošao u implementaciji tehnika predviđanja budućnosti i kako ih je koristio da bi započeo proces stvaranja otpornosti i održivosti u svojim aktivnostima za vrijeme krize.

Originalnost/vrijednost. Budući da baštinske organizacije u tradicionalnom smislu ne koriste tehnike anticipiranja budućnosti, ovaj rad prikazuje slučaj u kojem su takvi alati vrijedni doprinosi i pristupu planiranja i preživljavanja kriza.

KLJUČNE RIJEČI: baština, COVID-19, odgovor na krizu, oporavak, strategija, tehnike predviđanja budućnosti

Between social needs and heritage safeguarding: examples of solidarity and cooperation during the Covid-19 crisis: the Portuguese study

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Abstract

Purpose. This article aims to analyze some examples of solidarity and cooperation between Portuguese cultural institutions, enterprises, artists, workers, volunteers, and local communities during the Covid-19 crisis. The research will focus on the years 2020 and 2021.
Approach/methodology. Our approach to the subject matter encompasses four main components. One is an in-text glossary to clarify a few concepts in view of national legislation. The second is a brief contextualization of the evolution of the pandemic at an (inter)national level. The third one is a description of how cultural institutions, heritage sites, and professionals were affected by the widespread virus. And the fourth one is the analysis of five case studies of actions of solidarity and cooperation within the cultural field.
Findings. Thanks to our research, we distinguish the negative impacts of Covid-19 from pre-existent problems in the sector. We have also found that some initiatives created to support cultural heritage may be questionable. Since the sanitary crisis is not over yet, the research is limited to the current state of knowledge. Future exploration on the matter may be relevant to find new case studies and consequences of the pandemic. We believe this article can have a social impact since it promotes a reflection on the economic sustainability, social engagement, and ethical responsibilities of cultural institutions and stakeholders. Besides, the discussion about the vulnerable conditions in which cultural workers found themselves during this crisis is of utmost urgency to design a better future for the sector and those who keep it running.
Originality. The originality of our study lies in the registration of creative strategies found

to counteract the outcomes of the pandemic, which may be inspiring in future times of emergency.

KEYWORDS: cooperation, Covid-19, cultural heritage, social needs, solidarity

1. Introduction

We developed the present research within the Ph.D. in Heritage Studies from the Faculty of Arts and Humanities of the University of Porto. We presented its content at the International Conference "Solidarity in Culture: Heritage Protection Under Conditions of Crisis" (2021), organized by the National and University Library in Zagreb (Croatia). This article explores the relation between social needs, culture, and heritage safeguarding during contingency periods. We selected this subject matter since the Covid-19 pandemic brought a new light to the use of art, culture, and cultural heritage in solving societal problems[1]. For the purposes of this paper, we will be focusing on Portuguese examples of cultural solidarity and cooperation, mostly during 2020.

In Portugal, the widespread disease exposed and aggravated the fragility of several areas, leading the government to temporarily superimpose social needs over culture and heritage safeguarding (Correia 2020, 5-6; Januário 2020, 39, 45). Such a complex scenario gave birth to multiple initiatives of solidarity and cooperation both in a top-down and a bottom-up direction. These models of mutual help aimed to support cultural institutions, heritage sites, professionals, artists, and local communities (Leão 2020a, 4-5). The identification, analysis, and debate of those actions is the primary goal of the current article. The ultimate purpose of this approach is to document such strategies since they can serve as memories of the occurrence and can be convenient in upcoming periods of emergency.

Considering the previous premises, what are the first consequences of the pandemic for the cultural area and its professionals? Which weaknesses were already present in the field? How can they be mitigated, and what are the possible strategies to do so? How can cultural organizations, workers, volunteers, local populations, and governmental bodies cooperate to surpass those challenges? Should the policies, measures, and actions flow in a top-down, a bottom-up direction, or both? Finally, what future is there for Portuguese cultural heritage, institutions, and laborers?

In the text, we will be addressing problems related to the drastic decrease in tourist activities, the lack of profit and financing for culture, and the inequalities and precariousness within the sector. In addition, we will explore two hypotheses: one is that some actions of

[1] The theme was addressed by Cyrielle Gauvi during the event "TRANS-DIGITAL: Transitions et transformations des secteurs «arts et culture» à l'aune de la pandémie (2020-2021)", organized by the IESA Arts & Culture and held in Paris (France) on the May 27, 2021. George Kalamantis also approached the subject matter during the "Conference from Democratization to Cultural Democracy: Rethinking Institutions and Practices" led by the Portuguese Presidency of the Council of the European Union, in Porto Santo, on the April 28, 2021. The same applies to Gregory Sholette and his communication at the "Art and Human Rights International Conference", which took place in the Calouste Gulbenkian Foundation in Lisbon on the May 20, 2021.

solidarity act as marketing campaigns for cultural enterprises, ant the second is that some plans found by the State to support cultural heritage may raise ethical issues.

Despite Covid-19 being an ongoing phenomenon (2020-), academics have already been studying the dilemma and its aftermath worldwide. Portuguese authorities, cultural institutions, and research centers have been producing information since the declaration of the pandemic by the World Health Organization in March 2020 (WHO 2020).

Concerning the state-of-art, we consulted different sources and references. Their differentiation was then made based on their format and tenor. We consider sources such as normative instruments, official websites of cultural institutions, governmental bodies, and statistical data, and as references we consider books, journal articles, articles of opinion, and speeches retrieved from scientific events.

Regarding the sources, one must consider the national normative instruments that constitute the basis of the Portuguese legal system in terms of cultural heritage. From those, we call attention to Lei nº 107/2001 (2001), which establishes the political foundations and regime for the protection of cultural heritage; and Decreto-Lei nº 149/2015 (2015) devoted to the safeguarding of intangible cultural heritage. Portugal is a State Party of UNESCO and the Council of Europe, for which it has contributed to the creation of several international documents, such as the Council of Europe's Faro Convention on the Value of Cultural Heritage for Society (2005), and the Porto Santo Charter (2021) devoted to Culture and the Promotion of Democracy: Towards a European Cultural Citizenship (2021) created by the Portuguese Presidency of the Council of the European Union.

In terms of official websites, we consulted the webpage of ICOMOS-Portugal, ICOM-Portugal, the Portuguese National Institute of Statistics (INE), and the one from the General Directorate of Cultural Heritage (DGPC).

From the consulted references, we single out the first five volumes of Cadernos da Pandemia (2020), or the pandemic notebooks, elaborated by the Institute of Sociology of the University of Porto. Each eBook contains a series of reflections made by different academics, resulting in a multidimensional approach to the subject matter. The texts reflect upon contemporary concerns derived or intensified by Covid-19. They also address social disparities, precariousness, digital transition, culture commodification, and tourism dependency. Finally, in its pages, we can encounter testimonies of cultural workers whose lives were severely affected by the sanitary crisis (Barbosa 2020; Correia et al. 2020; Leão 2020b; Machado and Melo 2020; Marisa 2020).

To follow the developments and the public opinion about the measures implemented by the government and cultural institutions, we consulted a few online newspapers and magazines, namely: Público, Observador, Comunidade Cultura e Arte, RTP, and Diário de Notícias. However, their reading requires a careful look since some of their content is heavily politicized.

We must highlight the contribution of two international events to the debate. The "Art and Human Rights International Conference" (2021), organized by the Calouste Gulbenkian Foundation (Lisbon)[2], and the "Conference from Democratization to Cultural Democracy: Rethinking Institutions and Practices" (2021), coordinated by the Portuguese Presidency of the Council of the European Union (Porto Santo)[3].

[2] The event took place in Lisbon on May 20 and 21, 2021.

[3] The second Conference happened in Porto Santo on April 27 and 28, 2021.

In the following pages, we will make a brief methodological note and summarize the evolution of the pandemic worldwide and specifically in Portugal. In addition, we will analyze its repercussions and the resulting pressure of superimposing social needs over culture and heritage. Afterwards, we will present and discuss some examples of cultural solidarity and cooperation and, lastly, inquire about the possible futures for Portuguese cultural institutions, artists, professionals, and volunteers.

2. Methodology

The methodology used for the research has three components. A document analysis on the (inter)national normative instruments relating to cultural heritage and labor rights, and consultation of references about Covid-19 and its effects on the sector. The second is a critical reflection on the fragilities of the Portuguese cultural segment and laws, and a brief exposition about some examples of precariousness and labor rights inconsistencies within the cultural institutions. Finally, the third component comprises the analysis of some actions of cultural solidarity and cooperation.

We chose to insert two examples of labor inconsistencies due to the intense debate they triggered on the work conditions of cultural professionals, both in the public and private sectors. These are the cases of the Music House and the Serralves Foundation in Porto. Both institutions were under scrutiny after dismissing workers during lockdowns, leaving them without proper social support due to irregularities in their employment status (Andrade 2020a, 2020b; Correia 2021; Leão 2020a, 5; Paulo 2020; RTP 2020). However, we must highlight that these are not isolated situations, but a sample of an institutionalized problem that runs in all areas.

The selection of the case studies followed different criteria. We choose some actions to integrate the investigation due to their mediatic interest, namely, the *Drive-thru* organized by Livraria Lello in Porto (Livraria Lello 2020); the emergency funds, and the scholarships granted by the Calouste Gulbenkian Foundation in Lisbon (Fundação Calouste Gulbenkian 2020, 2021). Others were selected because of their importance at the local level, which is the case of the *#Lifebuoy* project, created to support *Ó Galeria* (Ó Galeria, n.d.); the *E-xisto* and the *Porta a Porta* program, set up by the Experimental Group of Theater from the University of Aveiro (GrETUA, Aveiro, Portugal; Notícias de Aveiro 2020; Universidade de Aveiro 2020). On the other hand, we considered the example of the Audiovisual Union due to its national impact owing to the creation of several help-centers around the country and the organization of multiple solidarity concerts (União Audiovisual 2020).

Before moving to the body of the article, we think it is necessary to clarify some terms and concepts used in our analysis, namely: cultural heritage, sector, workers, cooperation, solidarity, and precariousness. The geographical and chronological context influences these notions and their application, so we made a brief in-text glossary to specify the referential meaning for each concept:

- Taking into consideration the second article of Lei nº 107/2001 (2001), we recognize cultural heritage as: (in)tangible properties which are valued testimonies of civilization or culture, which possess relevant cultural interest and, therefore, are

objects of protection and promotion. According to the second article of Decreto-Lei nº 149/2015, intangible cultural heritage includes cultural manifestations expressed through practices, representations, knowledge, and skills of traditional nature, recognized by communities, groups, and individuals as worthy of being transmitted to the future generations.

- The increasing link between socio-economic development and creative areas results in an expanded notion of culture. A definition of the cultural sector limited to cultural activities is no longer sufficient since it now integrates the production, distribution, and consumption of services; the creation, differentiation, and development of immaterial elements recognized as creative industries (Augusto Mateus and Associados 2010, 4).
- According to the first clause of Lei nº 4/2008 de 7 de Fevereiro (2008), artistic activities are related to cinema, dance, theater, music, circus, and bullfights. This concept is insufficient, so the document was revoked. Consequently, the first article of Decreto-Lei nº 105/2021 de 29 de Novembro (2021) extends the regime of work contracts to professionals involved in artistic, "technical-artistic" work and the "mediation of shows or public events".
- As stated in the fifth article of the United Nations Declaration (1966), cultural cooperation constitutes both a right and a duty, it implies the share of expertise and abilities. According to articles seven and ten of the same document, cultural cooperation should focus on ideas and values capable of promoting "peace, understanding, and friendship".
- The concept of solidarity is multidimensional. However, here we will treat it as a synonym for compassion, support and as a tool to promote justice, equality, and human rights (Ogrodzka and Stokfiszewski 2019, 7). In cultural terms, it may mean the transition from an individualistic way of creating to a more collaborative one (Ogrodzka and Stokfiszewski 2019, 10). Or even "[...] the capacity to build bridges between mobile individuals of different languages, cultures, and geographies" (Ogrodzka and Stokfiszewski 2019, 12).
- In Portugal, the term "precariousness" is often used to express situations where someone faces unstable work conditions, including informal or illegal relations of labor, the necessity to compromise rights for subsistence, accepting underpaid jobs, or the absence of schedule limitations (Barbosa 2020, 5-7).

3. Between social needs and heritage safeguarding

3.1. The bigger picture

In the past decades, the global interest in heritage matters by the academic community, governments, and the public increased. However, despite this growing awareness and its positive outcomes, the risks for cultural heritage tend to increase due to climate change, natural disasters, armed conflicts, civil unrest, and so on (Costa 2020, 85-86). Nonetheless, those threats let us forget (or underestimate) that an economic crisis can have tremendous repercussions for cultural heritage and the populations whose revenues and livelihoods are (in)directly dependent on it. The circumstances can be even more significant when the

slump reaches international proportions because it is harder for transnational networks to support all those in need. There will be inequalities between continents, countries, and local communities. When the aftermaths are extreme, governments may need to establish priorities, like superimposing social needs to culture and heritage safeguarding. An ethically valid choice but still with massive backlashes in the long run.

By the end of 2019, one of these large-scale crises was about to burst, and no one could predict its temporal and geographical dimensions. What seemed like a controllable outbreak of a new virus detected in Wuhan (China) was later declared a pandemic (WHO 2020). Then, the number of infections skyrocketed, and the list of countries affected by Covid-19 continuously grew, resulting in lockdowns worldwide and restrictions on (inter)national movements.

3.1.1. The Portuguese timeline

Portugal had its first Covid-19 cases at the beginning of March 2020. A few days after the WHO declaration and before any governmental decision, cultural institutions progressively closed their doors (Ponte 2020, 33-34). On March 18, the Portuguese government declared the first emergency state, and institutions devoted to culture were officially closed. That month, 78.4% of the museums were closed to the public (ICOM-Portugal 2020, 66).

If the first 'wave' (March 2020) was relatively mild, the second (November 2020) and third (January 2021) ones were more severe. Praised for its initial response to the pandemic, in January 2021, Portugal became the country with a higher number of infections and deaths per million. Once again, the government 'isolated' the country, and most of the population stayed at home, attempting to reduce the number of infections. From then on, the situation of the cultural sector deteriorated even further.

Beyond the health framework, the impacts of Covid-19 are equally nocuous. According to INE, in 2019, 21.6% of the Portuguese population was at risk of poverty or social exclusion (INE 2019). With the pandemic, the situation degraded. During the first year of the crisis (2020-2021), the country received less than 73.7% arrivals of non-resident tourists (INE 2020, 5). The GDP dropped by c. 7% (INE 2021, 34), and unemployment rose around 6.7% (INE 2021, 23). Consequently, hundreds of thousands of people needed governmental aid and support from local institutions to satisfy their basic needs.

3.1.2. Cultural institutions

With the decrease in touristic activities, lockdowns, and remote work, museums lost visitors, workers, and volunteers. Most institutions transposed their actions to the digital world, helping minimize social isolation but exposing disparities in accessibility (Alves 2020, 40-41; Ponte 2020, 34). With the digital transition came the certainty that there is an obligation to amend questions of mediation, automated, physical, and cognitive access to museums and their contents (Ponte 2020, 34-35). The computerized experience cannot supplant the 'real' one (they must coexist) and some activities should be presential, like those provided by educational services (Mota 2020, 44; Sousa 2020, 50).

During this "suspension" time, many found the opportunity to work on the collections, make inventories, reinforce their social work, and rethink institutions (Stoffel 2020, 16-17). From there came the acknowledgement that current management programs may be too

focused on (or limited by) financial results, like the increase in the number of visitors and revenues, and less in the democratization of culture, the educational mission, and the promotion of civic engagement (Ponte 2020, 34-35).

This tendency reflects old problems, such as the lack of a national structural plan for culture, its "abandonment" by the government, and the progressive cuts in funding (Ponte 2020, 34; Sousa 2020, 49-50; Stoffel 2020, 16-17). The situation forced logistical changes, too. Among others, there was the need to guarantee the physical conservation of collections, reschedule events, adapt their format, invest in the research, and re-orientation of agendas to the interpretation of permanent collections (Curtis 2020, 20-21; ICOM-Portugal 2020, 68).

Due to long-term shortages, some institutions reveal signs of rupture. One of the most concerning examples is the Museu Nacional de Arte Antiga (MNAA). Joaquim Caetano, Director of the Museum, warned that the absence of human resources to guarantee the security and maintenance of the building forced the temporary closure of part of the exhibition. Caetano also said that the outdated systems of electricity and air-conditioning endanger one of the richest collections in the country (Lusa 2021). In such conditions, resorting to volunteers seems a viable option. However, this alternative raises ethical issues when analyzed in the light of the numerous cultural workers looking for a way of subsistence.

3.1.3. Cultural professionals

Another problem 'revealed' by the deadlock was the high number of people working in precarious conditions, with low incomes and contractual irregularities. Two of the most media-exposed cases come from the cultural sector. The first is associated with Casa da Música in Porto, or the Music House (Leão 2020a, 5). The foundation temporarily dismissed workers with an independent status. After the administration's decision, some professionals organized a protest in front of the building. Following the initiative, the institution definitively discharged some of the marchers. The situation's gravity comes from two points. First, even though the workers theoretically had independent status, in practice, some were working full-time and, in other cases, were part of the team for decades. The second problem is that permanently dismissing workers after the protest – when the administration had announced that their liberation was temporary – can be interpreted as a retaliation measure (Correia 2021; Andrade 2020b; RTP 2020).

The second example is the Serralves Foundation in Porto (Leão 2020, 5). The educational team of the institution accused the lack of payment for canceled activities during the pandemic. In addition, the educators expressed discontent that, despite doing guided visits to the museum, they were still considered external workers (Paulo 2020; Andrade 2020a). The administration denied the accusations of reprisals and invited some of them for future works (Andrade 2020a).

According to Susana Januário, a reason for cultural precariousness is the neo-liberalization of the market since companies are free from contracting, and individuals are more exposed to all kinds of risks (Januário 2020, 37, 39-40). In the same logic, Inês Barbosa claims that the liberalization resulted in the "assignment" of rights for subsistence and questionable hiring models (Barbosa 2020, 5-7). Tânia Leão speaks about the lack of commitment against labor and power abuses (Leão 2020a, 4-5). The analysis by Teresa Martinho is equally keen. The author reports that most culture professionals have no limits to working hours, are

(under)paid in compressed or scattered periods, and have a self-employment status (Martinho 2020, 6).

Facing the number of professionals without a net of support, the government created aid mechanisms, such as specific allowances for artists, authors, and other cultural professionals. However, help did not reach all because some were not officially part of the sector (Martinho 2020, 7, 10-11). In 2021, the state released Portaria nº 37-A/2021 (2021), a regulation on extraordinary measures to support the area during Covid-19. Thanks to its first article, the new document encompasses artists, authors, technicians, and other professionals, a big step for recognizing workers previously disregarded.

How can these situations be mitigated?! Januário defends a renewed net of cooperation and collectivism, contrary to the individualism and the neoliberalism institutionalized (Januário 2020, 40). On the other side, Martinho reinforces the need for a contributory career proportional to the activity, access to unemployment allowance, medical discharge, and more investment in the cultural sector (Martinho 2020, 9, 12).

3.2. Examples of solidarity and cooperation

The sanitary crisis brought many misfortunes. Nonetheless, it also motivated actions of mutual help. While the events were unfolding, we accompanied and registered some examples of cultural solidarity and cooperation that may constitute positive models for future impasses. The following case studies took place within Portuguese territory, during 2020.

Ó! Galeria in Porto is an art gallery devoted to contemporary illustration. During the pandemic, the company lost part of its revenues and survived on online selling. Facing a dangerous cut in profit, the managers decided to create the #Lifebuoy. The project involved several illustrators that contributed by donating new or pre-existing prints. Matilde Horta, Uma Joana, Sílvia Rodrigues, and Marcos Matos are some of the creators. The #Lifebuoy initiative proves that cultural enterprises and artists can cooperate to surpass economic challenges (Ó Galeria, n.d.). An interesting case study since the inventors are the ones who keep the gallery 'floating'.

GrETUA is an experimental theater group linked to the University of Aveiro. The community recognizes the space for its performative agenda. The association is mostly led by student-volunteers, even though it has some official members responsible for its management. As a result of the restrictions to live events, the group decided to reorganize itself and apply its human resources to help the local community. GrETUA organized two projects, the E-xisto (literally translated as E-xist) and the Porta a Porta (or Door to Door). The E-xisto consisted of fundraising computers, tablets, webcams, and microphones to donate. The initiative intended to support children, teenagers, and young adults that needed these devices to follow activities related to homeschooling or remote work (Notícias de Aveiro 2020). On the other hand, the Porta a Porta aimed to distribute essential goods to those confined, including seniors, people from endangered groups, and Covid-19 patients (Universidade de Aveiro 2020). Therefore, GrETUA is a positive example of how a cultural association can reorganize itself and its means while basic needs surpass cultural ones.

Livraria Lello in Porto is one of the most famous historical bookshops in the country. Defined as a monument of public interest by Portaria 625/2013 (2013), the store is one of the most touristic places in Porto. In a regular year, Lello receives thousands of visitors. Unfortunately, in 2020, the bookshop saw its schedules drastically shortened and the reduction

of (inter)national tourists who guaranteed its survival. In the same period, Lello's administration created a Drive-Thru and offered more than 10 000 copies to local readers, which, as stated by its representatives, embodied an enormous financial effort. As a justification, the 'ambassadors' of the bookshop said that books were goods of first necessity, especially in times of crisis, and that the institution had a social responsibility towards the community (Livraria Lello 2020). The action was welcomed and was undoubtedly a positive gesture toward the statement on the book's value. Nevertheless, we cannot stop asking if such an action was not also a great marketing campaign planned to attract new visitors.

Another socially active institution is the Calouste Gulbenkian Foundation situated in Lisbon. Being one of the most important art centers in the country, Gulbenkian reinforced its humanistic image by creating several aid mechanisms for artists, students, and general citizens. The first action we want to recall is the creation of an emergency fund of five million euros. In the cultural area, the fund intended to support artists and organizations whose projects were canceled during 2020 (Fundação Calouste Gulbenkian 2020). The attribution of scholarships to master's students is another contribution of the Foundation in supporting those in vulnerable situations. However, the most curious initiative counted on the collaboration of the Ministry of Health. The Foundation cooperated with governmental bodies by acquiring vans destined to drive across the country to help with the vaccination process (Fundação Calouste Gulbenkian 2021). The project is an outstanding example of how cultural institutions, and the State can join efforts to mitigate social problems.

The final case study we bring is the one of the Audiovisual Union. An informal group created the socio-cultural association to help artists and audiovisual workers struggling with unemployment and the lack of social support. With the motto #No one left behind, the association helped numerous families all around the country by collecting and donating food in cooperation with supermarket chains, food brands, and other enterprises (União Audiovisual 2020). Amid its several initiatives, the Union orchestrated some solidarity concerts. Every person was 'invited' to bring a bag of food. Among the musicians were the well-known Dead Combo (now 'extinct') and The Legendary Tigerman (Lusa 2020). We can assert the concerts have a triple solidarity nature since the bands do not charge, the public pays the ticket price, and brings essential goods to donate.

3.3. What future is there?

The future for cultural institutions, heritage sites, and professionals seems challenging. The lack of funding in coordination with the weakening of touristic activities may perpetuate the need for a close net of cooperation. In the long run, the economic sustainability of cultural institutions and heritage sites cannot continue to depend on it. Nor can it have the precariousness of its workers or the transposition of essential functions to volunteers as pillars.

Ultimately, the State will need to revise its attitude towards culture. We recall one example that is quite illustrative of how the government handles cultural matters. To raise money for cultural heritage, it created the heritage lottery "[...] to promote the involvement of all in the national mission of cultural heritage rehabilitation" (OE 2021). This well-intentioned action takes other contours when one knows about the addiction problem related to scratch cards. In recent years there has been a debate about the dependence on luck games, which affects especially vulnerable groups (Duarte 2021). The recognition of the problem by the

public triggered widespread criticism of the State's initiative.
Cultural organizations may need to have a more democratic approach. The topic was discussed at the "Conference from Democratization to Cultural Democracy: Rethinking Institutions and Practice" (2021) organized by the Portuguese Presidency of the Council of the European Union in Porto Santo. During the event many talked about accessibility, representation, diversity, and social inclusion. Notwithstanding, the subject leans more toward the public and less to human resources policies adopted by institutions. Even so, George Kalamantis stated that cultural organizations must focus on the administration, the collaborators, and the public; in the inversion of hierarchies and the promotion of bottom-up initiatives[4].

4. Results and final considerations

In this research, we identified and discussed the first consequences of the pandemic for the cultural area and its professionals, namely, the reduction of income, funding, the dismissal of workers, and the resulting aggravated social crisis. We distinguished the preexistent weaknesses in that field from those provoked by Covid-19. Respectively, legal gaps relating to labor rights and inconsistent discharges of workers. By examining some cases of cultural solidarity and cooperation, we showed different strategies capable of mitigating the existing problems. We also demonstrated how bottom-up and top-down actions coexist and complement each other to support cultural institutions, heritage sites, workers, artists, and even local communities. Indeed, we concluded that the best option is a coordinated effort among all. To end, we raised some provocative questions about the possible futures for Portuguese heritage sites, artistic institutions, and laborers.
We didn't fully confirm the hypothesis that some solidarity and cooperation initiatives act as marketing campaigns for cultural enterprises. Yet, we believe it should not be omitted from the research. On the other hand, not all State measures are free from ethical issues, as proved by the heritage lottery. Considering the ongoing crisis, we must assume that the present study has its limitations. First, because the existing literature is incomplete. Secondly, since the real outcomes of the pandemic will only be understood in the following years. So, there are research directions to deepen, such as the long-term changes in the cultural sector, gaps regarding labor rights, and ethically problematic policies concerning human resources in cultural institutions and heritage sites.

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[4] Kalamantis approached these topics during the "Conference from Democratization to Cultural Democracy: Rethinking Institutions and Practices", organized by the Portuguese Presidency of the Council of the European Union in Porto Santo on April 28, 2021.

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Sažetak

Između društvenih potreba i čuvanja baštine: primjeri solidarnosti i suradnje u vrijeme Covid-19 krize: portugalska studija

Cilj. Ovaj rad donosi analizu primjera solidarnosti i suradnje između portugalskih ustanova u kulturi, poduzeća, umjetnika, radnika, volontera i lokalnih zajednica za vrijeme Covid-19 krize. Istraživanje se provodilo tijekom 2020. i 2021.

Pristup/metodologija. Ovoj temi pristupamo iz četiri gledišta. Prvo, provodimo analizu korištenih pojmova kako bi se razjasnili koncepti iz perspektive portugalskog zakonodavstva. Drugo, kontekstualiziramo razvoj pandemije na nacionalnim i međunarodnim razinama. Treće, opisujemo kakav je utjecaj imao virus na poslovanje ustanova u kulturi, zaštićenih baštinskih lokaliteta te baštinskih stručnjaka. Četvrto, donosimo analizu pet studija slučaja koji prikazuju solidarne aktivnosti i suradnje u polju kulture.

Rezultati. Istraživanje je ustanovilo negativne utjecaje Covid-19 krize na već postojeće probleme u sektoru. Također smo ukazali na to da su neke inicijative, stvorene kako bi podržale kulturnu baštinu, zapravo upitne. Budući da nije proglašen kraj pandemije, istraživanje je bilo ograničeno na trenutačno stanje u sektoru kulture u Portugalu. Buduća istraživanja mogla bi pokazati, s pomoću novih studija slučaja, kakve su posljedice pandemije. Ovim radom donosi se refleksija na ekonomsku održivost, društveni angažman i etičku odgovornost ustanova u kulturi i drugih dionika. Osim toga, rasprava o ranjivim stanjima u kojima su se našli radnici u kulturi za vrijeme krize apsolutno je neophodna kako bi se planirala bolja budućnost i za sam sektor i za one koji ga pokreću.

Originalnost. Originalnost je rada u pronalasku kreativnih strategija koje neutraliziraju ishode pandemije, a koje ujedno mogu poslužiti kao inspiracija za buduća krizna razdoblja.

KLJUČNE RIJEČI: Covid-19, društvene potrebe, kulturna baština, solidarnost, suradnja

Crisis? Let's digitize! How the crisis situation affected the processes of digitalization in the Croatian History Museum

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Abstract

Purpose. The aim of this paper is to analyse the possibilities of using existing digitization projects, as well as designing new ones, in the context of challenges caused by the pandemic and the earthquakes. The paper deals with the Croatian History Museum (CHM) response to a complex crisis situation caused by the SARS – CoV-2 virus pandemic and a strong earthquake that hit Zagreb on March 22, 2020. As a result of these events, the Croatian History Museum is at present closed to the public until further notice and faces a challenge of finding new models of communication with users in order to fulfil its purpose and mission.

Approach/methodology. The methodology of the work will focus on the analysis of previous projects and the use of digitization processes and digital copies as the exclusive and only central approach in processing, ensuring accessibility and in the presentation of museum material in crisis situations, with emphasis on new ways of its use and the improvement of the existing communication of the Museum with its users.

Findings. The paper provides a detailed account of the importance of digitalization processes and digital copying and their implementation in the design of new business process models with the possibility of establishing new services and communication with users in a virtual environment.

Originality. The originality of this paper is reflected in the fact that the experience gained from these projects can serve the Croatian History Museum and other heritage institutions in the Republic of Croatia in the practical application of one of the models of using digitalization in overcoming numerous challenges, especially in crisis situations that heritage institutions are facing today.

KEYWORDS: digitalization, heritage protection, museum documentation, museum library, preservation

1. Introduction

With a tradition of more than a hundred years, Croatian History Museum (CHM) is today one of the most important museum institutions in the Republic of Croatia. In 2020, the Museum faced numerous problems related to work restrictions due to the COVID pandemic and two devastating earthquakes that caused significant material damage to the museum building. In this context, the question of the functioning of the Museum and the fulfilment of its public task was raised. The research in this paper will focus on the question of how the CHM responded to the sudden difficulties caused by the pandemic and the aftermaths of the earthquakes. Special focus will be on the analysis of Museum's use of the initiated digitization processes and the creation of new digitization projects in order to overcome the crisis period. The paper will try to present the problems faced by the Museum staff during the implementation of the digitization processes and, at the same time, highlight the advantages of digitization in communication with users. In addition to the analysis of relevant literature, the paper mainly uses materials from the Documentation of the CHM.

The Museum was founded in 1846, as the National Museum, with the purpose of collecting material important for Croatian national history. Mijat Sabljar was appointed the first "keeper of the collections", and the first exhibition opened in October 1846. Over the years, three museums have emerged from the National Museum: the Archaeological Museum, the Croatian Natural History Museum and the History Museum of Croatia. The History Museum of Croatia has been operating under this name since 1952 and was managed at the time by the Yugoslav Academy of Sciences and Arts. In 1954 the Museum opened its first exhibition *Croatian National Movement 1903-1904* (Balog Vojak 2020, 11). Since its inception, the Museum has been having spatial issues and has moved its collections several times: its first home was *Narodni dom* in Opatička 18, the palace of the Yugoslav Academy of Sciences and Arts where it shared the space with the Archaeological Collections. Then, in 1959, the Mayor of Zagreb, Vjećeslav Holjevac, temporarily housed the CHM in the Vojković-Oršić-Kulmer-Rauch Palace, whose previous occupant was the Presidency of the National Committee of the City of Zagreb (Bregovac Pisk 2004, 65). It is a baroque palace built in 1764 by Croatian nobleman Sigismund Vojkffy - Vojković. Located in Zagreb Upper Town, it is considered the most beautiful Zagreb baroque palace (Bregovac Pisk 2004, 7). In 1991, it was merged with the Museum of the People's Revolution of Croatia (founded in 1945) into the Croatian History Museum (*Zakon o Hrvatskom povijesnom muzeju* 1991) It is worth mentioning that since 1886, a part of the palace (the southern part of the ground floor overlooking Matoše-

va Street) was rented by the then owner Baron Geza Rauch to the post office. The Zagreb City Magistrate bought the palace in 1931 with the intention of housing the city museum (Bregovac Pisk 2004, 18).

The holdings of the Croatian History Museum number more than 300,000 museum objects systemized in sixteen museum collections: Archaeology Collection, Documentary Collection I, Documentary Collection II, Map Collection, Twentieth Century Art Collection, Numismatic Collection, Collection of Religious Artefacts, Collection of Photographs, Films and Negatives, Heraldry and Sphragistic Collection, Collection of Stone Monuments, Collection of Decorations, Plaques, Medals and Badges, Uniform Collection, Arms and Armour Collection, Collection of Objects from Everyday Life, Collection of Paintings, Prints and Sculptures, Collection of Flags and Streamers. Due to insufficient space, the Museum has been operating without a permanent exhibition for the last 175 years, but has had a rich exhibition and publishing activity. However, it seems that there has been a change in that field and the CHM will be getting a new building - Jelačić Palace in the Upper Town, not far from the current palace. It is interesting to point out that this is actually the realization of a project that was advocated in the 1970s by the long-term directress of the Museum, art historian Lelja Dobronić (Derk, 2021). For many years, as a part of its activities, the Museum has been implementing projects that include digitization of museum material and museum documentation in order to protect it, increase its presentability and facilitate accessibility.

In 2020, the CHM faced a number of challenges. The first significant challenge was the impact of the COVID pandemic on its activities. In this context, public access to the Museum itself was limited, which was in line with the instructions of the state health authorities to prevent the spread of the virus. Very soon after that, at the end of March 2020, the Museum, like many other heritage institutions in Zagreb area, suffered significant damage due to the devastating earthquake. The consequences of the earthquake in the Museum itself were further intensified by several strong earthquakes that hit the area of Sisak and Petrinja at the end of December 2020 and were strongly felt in Zagreb causing additional harm to the already damaged Museum building.

Faced with the consequences of pandemics and earthquakes, Croatian History Museum sought to continue its activities despite numerous challenges and as an important national cultural institution. As one of the forms of communication with the public, several previously started processes of digitization of museum material, documentation and library material were selected. In this paper we will be analysing two significant digitization projects that have been underway during the last few years.

In the Croatian language, there is one term that covers the processes of creation of digital copies and digital data about them. However, in English there are two different terms that we will try to define here. Gartner glossary defines digitization as:

> "(...) the process of changing from analog to digital form, also known as digital enablement. Said another way, digitization takes an analog process and changes it to a digital form without any different-in-kind changes to the process itself" (*Gartner Glossary*, s. v. "Digitization," accessed June 15, 2021, https://www.gartner.com/en/information-technology/glossary/digitization).

The same source defines digitalization as:

> "(...) the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business" (*Gartner Glossary,* s. v. "Digitalization," accessed June 15, 2021, https://www.gartner.com/en/information-technology/glossary/digitalization).

So, if digitization is a mere conversion of data, digitalization can be viewed as a transformation. More than just creation of digital data, digitalization encompasses the ability of digital technology to collect data, add new value to them, establish trends and make better business decisions. Despite the increased use of digitalization, especially in heritage institutions, these definitions are still valid today. Since the means and the results of digitization and digitalization are interdependent in a way that they transform the ways in which various cultural contents are produced (Lavender 2010, 128), it undoubtedly leads to a larger production of content that is originally digital. Thus, for example, virtual exhibitions and/or e-catalogues that do not have their own analogue version will appear more often.

Considering the processes of digitization of cultural heritage in the European context, it can be observed that looking 20 years back there was an awareness of the importance of digitization of cultural heritage. Thus, the European Union has published several initiatives and documents defining key recommendations and principles in the implementation of the processes of digitization. In this area, the Charter of Parma from 2003 stands out as a strategic document approved by the National Representatives Group for Digitization. The document highlights digitalisation as a key step in preserving and valorising Europe's rich cultural heritage and identifies several objectives such as intelligent use of new technology, accessibility, quality, interoperability and standards (Minerva EC, 2003). Therefore, the European Parliament and the Council of Europe have adopted the eConceptplus Program with the aim of increasing the usability and accessibility of digital content. It is within this program that the Europeana project was created, envisioned as a European digital library - a central repository of European cultural heritage, the goal of which was to gather 10 million items from European heritage institutions by the end of 2010 (Seiter-Šverko 2012, 4-5). Since then, the goal has been greatly surpassed with more than 58 million items from 4,000 heritage institutions across Europe available via Europeana online. The focus of Europeana in 2020-2025 is supporting the digital transformation of Europe's cultural heritage sector. The initiative is based on the postulate that access to cultural heritage leads to positive social and economic change meaning that both the content and the technology need to be accessible, easy to use and open, it requires and encourages collaboration and teamwork, while digital data should be authentic, trustworthy and robust (European Commission 2020, 7-11).

These processes are a consequence of accelerated informatization and digitalization that are present in all aspects of society. The emergence of the Internet and its widespread acceptance have completely changed the way of communication, which has greatly influenced the communication of heritage institutions with their users. It has also paved the way for new opportunities for education, participation, innovation and creativity. All in all, it opened the possibility for museums (and other heritage institutions) to completely move their activities into the virtual world in situations of crisis. There, museums as public institutions continue to provide the necessary public space, access to collections and rich cultural experiences but in a whole new way, formerly inconceivable (Giannini

2019, 6-7).
When implementing digitization projects, it is crucial to keep in mind the purpose of digitization, whether it is a museum object, documentation or library material. Digitization in heritage institutions is not an end in itself, but primarily serves to increase accessibility, create new products and protect the original, occasionally to supplement collections and meet the needs of users.

1.1. Improving accessibility

The possibility of publishing digital copies on the Internet completely changes the concept of access to and the use of cultural and historical heritage. By facilitating new forms of access and use, digitalization ensures access to material from a distance which significantly affects its use in interdisciplinary and multidisciplinary scientific and educational projects that explore a particular topic, author or historical period. Also, the institution can present its material on websites while expanding its user community, making its services more visible and attracting new types of users (Baričević et al. 2006, 10-11; Kuzman Šlogar et al. 2020, 9; McIlwaine et al. 2002, 11-12).

1.2. Creating new products

The creation of new products is closely linked to the improvement of availability of museum materials. Digitization and digitalization allow us to offer new services to users that would not be possible or would be difficult to implement outside the electronic environment. They enable combining digital content with corresponding metadata, linking various collections within and outside the institution, exchanging digital copies and metadata, and integrating different types of digital material into multimedia content (Baričević et al. 2006, 11; Kuzman Šlogar et al. 2020, 9-10).

1.3. Preservation and protection of the original

By providing access to digital copies, digitization indirectly protects the material through the reduction of use of the originals, which improves their preservation. By using a digital copy, the original can be permanently stored in controlled conditions in a depot, which is especially important for more sensitive items such as old manuscripts written on various substrates, newspapers, photo negatives etc.
IFLA guidelines argue that the digitization in itself is not a superior method of preservation to microfilming, therefore should not be used as a replacement for a preservation programme based on reformatting on microfilm. Nevertheless, it allows that digital technologies can provide preservation of the original in the sense of "separating the informational content from the degradation of the physical medium", which significantly reduces handling the original and is particularly applicable in regard to old, damaged and/or brittle books and varied sorts of documents on media that are prone to damage and decay (McIlwaine et al. 2002, 8-13). In Croatia, both the *National program for digitization of archival, library and museum material* and the *Guidelines for the digitization of cultural heritage* state preservation as one of the main reasons for implementing a digitization project (Baričević et al. 2006, 10; Kuzman Šlogar et al. 2020, 7-8).

1.4. Supplementation of collections and cooperation

Acquiring digital copies of the originals held by other institutions is one of the mechanisms used when building a collection. On rare occasions a digitized copy of the original will be the only copy the institution has in its collections (Baričević et al. 2006, 11; Kuzman Šlogar et al. 2020, 10).

1.5. Digitization on demand

In certain cases, material digitized exclusively for the need of users, on demand, can supplement other reasons for digitization. Digitized material obtained this way can complement collections of material digitized due to the need for preservation and enhanced access (Kuzman Šlogar et al. 2020, 10-11).

2. Digitization projects in the Croatian History Museum

The Croatian History Museum implemented various digitization projects long before the crises caused by the pandemic and the earthquakes. Thus, for example, the project of digitization of the CHM press clipping archives was implemented in 2014. The articles were digitized using the OCR technique and merged with metadata in the information system for processing museum documentation (Balog Vojak and Šinkić 2013, 180). The aim of this paper is to show the importance of digitization of library and museum materials and museum documentation and the possibility of their digital transformation on the example of Croatian History Museum's digitalization projects. It is important to highlight the impact of digitization projects on the Museum's work processes that have now changed due to the challenges posed by the pandemics and the earthquakes. For this occasion, we have singled out two important projects.

2.1. The digitization of Croatian History Museum publications (including History Museum of Croatia and Museum of the Croatian People's Revolution)

The Croatian History Museum is an institution with a 170-year history of museum activity. During its long existence, it has published a significant number of publications related to thematic exhibitions and exhibitions of collections from its rich holdings. Some of these publications are no longer available to the general public (due to damage or small number of copies) and need to be digitized in order to make them available again on the Museum website. In order to achieve this, *the Project of digitization and publication of inaccessible publications of the Croatian History Museum* was designed. It was developed by the Croatian History Museum employees from the Department of Documentation and the Library. The main goal of the project was the complete digitization of 115 different publications (catalogues, leaflets, booklets, brochures, guides) with a total of about 4,500 pages. All digitized publications should be text searchable and available in full text in PDF on the CHM website. The aim of the project was to improve the availability and to facilitate access to Museum

publications. It also emphasized the need for more permanent preservation of the content of the Croatian History Museum publishing activity. The project was funded by the Ministry of Culture and Media of the Republic of Croatia and it took place in 2019 (Hrvatski povijesni muzej 2020). The selection criteria for digitization were as follows:

1. All digitized publications must be published by the Croatian History Museum (that includes the publications of the History Museum of Croatia and the Museum of the People's Revolution of Croatia as both of these institutions are the precursors of the Croatian History Museum).
2. Unavailability of copies – meaning that the publication might not be available for sale, that there are only a few copies of it and/or they are older publications prone to damage and need to be protected and preserved while handling them must be kept to a minimum.
3. Focus on user needs – the final result should entail text searchable, full text availability of the content of the publication on the Museum website, with free access (Kuzman Šlogar et al. 2020, 11-15; McIlwaine et al. 2002, 13-14).

For the purposes of the project, and with the financial support of the Ministry of Culture and Media of the Republic of Croatia, an overhead style contactless scanner ScanSnap SV600 Fujitsu A3 was acquired. The device enabled the digitization of publications along with their maximum preservation - the possibility of obtaining a quality digital copy without pressing the publication and damaging the binding. It was used mainly for the scanning of larger publications, while Epson GT 20000 A3 flatbed scanner was used for smaller publications like leaflets and booklets.

As a result of the above-mentioned project, a total of 137 different types of publications (catalogues, guides and leaflets) with a total of approximately 6,000 pages were digitized during 2019, which is more than originally planned. All publications were scanned and then converted to text searchable documents using ABBY FineReader OCR (optical character

Figure 1. *A selection of Croatian History Museum's digitized publications*
(Source: Documentation of the Croatian History Museum)

recognition) software. With this project, the Croatian History Museum has "revived" publications that are no longer available for sale or can no longer be found outside the Museum. Bearing in mind the frequency and the content of user inquiries about Museum's older publications, these digitized publications will certainly facilitate the efforts of scientists, researchers and other interested parties.

All the digitized publications of the Croatian History Museum (Figure 1) are text searchable and available in full text in PDF on the CHM website. The oldest digitized publication you can find on the website is a leaflet published in 1951. Considering the type of publication, the oldest digitized booklet is from 1961, and an exhibition guide was published in 1958. The oldest digitized catalogue was published in 1957 by the Museum of the People's Revolution of Croatia and it is a booklet-like publication with mere 20 pages and few illustrations. The newest catalogue you can find digitized is from 1986, a significantly larger publication with colour illustrations embedded in text. It is possible to observe how catalogues have evolved over the years, from small leaflet-like editions, with a small number of pages and few illustrations, to substantial, today richly illustrated larger editions with as many as a few hundred pages.

One of the main challenges of this project was collecting the older editions. These older publications were created in two different museum institutions which later merged into one and the fact that they were not stored at the same place made it difficult to locate and collect them. Another challenge was the physical condition of some publications, especially those that were significantly damaged, and at the same time the only copy we had. Nevertheless, the challenges have been successfully overcome and the project is now an on-going operation ready for new updates in the time coming. All publications that can be accessed on the CHM website have been published by the Croatian History Museum and are no longer available for sale.

2.2. Digitization of museum material

The Croatian History Museum has more than 300,000 museum objects that represent cultural heritage that needs to be additionally preserved by digitization. One museum photographer, one documentalist and one IT specialist are continuously working on the digitization of museum material. Although the beginnings of digitization of museum material in the Croatian History Museum date back to 2008, systemized continuous digitization started in 2013 (Figure 2).

As mentioned earlier, the digitization does not only mean the technical production of digital copies of objects, but also the creation of metadata about them. The purpose of digitizing material is to protect the original, improve its accessibility and create new products. An example of such possibilities is the project *Memories of the 20th Century* (Figure 3). This project digitized over 1,000 items; most of them documents, and is available on a separate website (Hrvatski povijesni muzej 2017).

This web-site exhibits records of "individual lives, personal documents and memories: incomplete and subjective, occasionally not very relevant nor even realistic, but still authentic, unique and valuable testimonies to the time of their origin. The documentary material illustrates the fates of people who lived in Croatian cultural and historical areas during the extremely dynamic and turbulent, chaotic and controversial period known as the "short 20th century" (Hrvatski povijesni muzej 2017).

The Croatian History Museum web-site also aims to achieve several equally important

Figure 2. *A selection of Croatian History Museum's digitized museum material* (Source: Documentation of the Croatian History Museum)

Figure 3. *"Memories of the 20th Century" website* (Source: Documentation of the Croatian History Museum)

objectives. First, to underline the potential of individual (subjective) experiences in the course of the long-term development of Croatian socio-political and cultural life. Second, to draw attention to the importance of the documentary material of the Croatian History Museum in the interpretation of recent national history. The selection criteria for digitization of museum material are the activities scheduled by the CHM program, digitization at user request and continuous systematic digitization of collections. The digitization for the activities scheduled by the CHM program entails the digitization of museum material or documentation needed for exhibitions and/or publications. Further, a large part of digitization takes place due to the users' requests since the Museum has about 120 user inquiries annually that vary from a single copy to dozens of copies[1]. At the same time, attempts are being made to systematically digitize collections. As some of the CHM collections are extremely large in number, systematic digitization is relatively slow and is partly supplemented by the previously mentioned criteria.

3. The impact of crisis on digitalization and work processes

The purpose of digitization, as well as the criteria according to which it takes place in the Museum, demonstrated its importance in early 2020 when the world, including Croatia, faced a new challenge: a pandemic of a formerly unknown virus called SARS COVID-19 (coronavirus). As a consequence, a lockdown ensued and all services that were not necessary were closed, including the museums. Working conditions changed additionally on 22nd of March 2020, when Zagreb was hit by a strong earthquake. The Museum, situated in the 18th century baroque palace, suffered significant structural damage that considerably disrupted the static of the building (Figure 4). As a result, even after the implementation of strict epidemiological measures and the reopening of heritage institutions, the Museum remained closed until further notice. It is important to point out that only the Museum building was damaged in the earthquake, while the museum material fortunately remained undamaged. Only four items suffered minor damage and all had been digitized earlier, thus preserving their original condition.

A survey conducted by the Museum Documentation Centre in November 2020 on the impact of the pandemic on museums showed that Croatian museums recorded a drop in the number of visitors by 50-100%, and a drop in revenue of more than 50%. Although all museums had a drop-in attendance and revenue, this was most pronounced in Zagreb due to additional problems caused by the earthquake (Car 2020). When the museums that had not been damaged in the earthquake reopened, they had to work in accordance with the prescribed epidemiological measures. For example, the physical distance between visitors and between visitors and museum staff was prescribed. It was, and still is, necessary to enable hand disinfection for customers entering the premises and to reduce close contact between employees working in separate shifts (Koronavirus.hr 2020). All this had a significant impact on the work of museum institutions.

This new situation has made the functioning of the Croatian History Museum quite strenuous and challenging which prompted reflections on the need to conceive and initiate

[1] Documentation of the Croatian History Museum

Figure 4. *Croatian History Museum - damage caused by the earthquake*
(Source: Documentation of the Croatian History Museum)

new digitization projects. For a year now, all Museum's activities have been taking place in a virtual environment and we can say that the most notable result of this crisis was the expeditious publishing of previously digitized material.

The results of the projects of digitization of CHM museum material and documentation are continuously used for purposes other than those determined by the projects themselves. Thus, thanks to the systematic digitization of museum material, it is possible to create new products as well as expand the existing ones. For example, the needs of users include not only physical visitations of exhibitions, but also the use of copies of museum material or insight into the material for different needs and purposes (research, education, etc.). The presentation of museum material, as one of the basic tasks of every museum, can be done in different ways, but most often it is through exhibitions or various publications. In recent years new solutions have emerged in this precise area. Thanks to digitization and digitalization, the museum can now offer new, digital products suitable for a new generation that Marc Prensky calls "digital natives", whose main characteristic is impatience and the need for numerous stimuli (Prensky 2005, 3).

One such product is a virtual exhibition. When we talk about virtual exhibitions, we should emphasise that their advantage is wide accessibility, facilitating budget rationalization

and no requirement of physical space for exhibition. They arise as a result of the impact of the development of information technologies and their application in museums, but at the same time they are the consequence of the lack of a CHM permanent exhibition. Also, "they represent the consideration of users' needs by giving them the opportunity to get to know the cultural heritage" in a way suitable for "digital natives" (Balog Vojak 2020, 34). The Museum published its first virtual exhibition in 2011 and since then, in addition to physical exhibitions, it has published virtual ones with a similar theme. With the arrival of the pandemic and the earthquake, the Museum has intensified the publication of virtual exhibitions that became the only available form of exhibition activities. At the moment, 19 different virtual exhibitions are available to view on the CHM website. Of these, 5 were published in 2020, which is 25% of the total number of virtual exhibitions. Unlike in 2019, when the Museum was open to the public and published only two virtual exhibitions. In 2020 they were visited by more than 27,000 visitors[2].

After imposing limitations on physical public access due to pandemic restrictions, the Museum intensified its work on the website while trying to publish parts of the Museum's material and thus remain present in the public eye. During the pandemic, at the end of March 2020, the Zagreb area was hit by a strong earthquake that significantly devastated the CHM building itself. The consequences of the earthquake led to the long-term closure of the Museum to the public, which further highlighted a new dimension of challenges in the public activities of the Museum and the work of museum staff. The CHM sought to overcome the new challenges of these crises by intensifying its work in the virtual dimension of communication with the public. Precisely such virtual venture of the CHM was based on the results of numerous projects of digitization of the museum material itself, including the two previously described projects.

The earthquakes that hit Zagreb in March and December 2020 significantly disrupted the statics of the palace in which the Museum is located. Since then the building has been closed to the public and needs to be systematically renovated. The Croatian History Museum was among the most damaged museums in Zagreb, and the imminent evacuation of the material seemed likely (Car 2020). Almost immediately, it became clear that the building was unusable and unsafe, both for the staff and for the entire museum holdings that are kept in it and exhibited in occasional exhibitions. The material from the exhibition *Varvaria / Breberium / Bribir: Historical Layers Revealed*, as well as that in the depots, was not damaged (Hrvatski povijesni muzej 2020b). During the analysis of the condition of the building, the conservators needed old photographs of the interior (e.g., wooden stocks and wadding). It turned out that there were very few or no such photographs because they were not photographed in detail in the 1970s and 1980s. As the museum did not have the appropriate photographs preserved in its documentation, the conservators had to try to look for them elsewhere. It is this example, it shows the importance of collecting museum documentation and its regular transfer to new media through digitization.

[2] Documentation of the Croatian History Museum.

4. Conclusion

In 2020, the Croatian History Museum faced a pandemic and earthquakes, suffered significant material and structural damage and was, as a consequence, closed to the public. In order for the Museum to continue to function and remain visible and accessible to the public, the key role was played by various projects of digitization of material such as those presented in this paper: The digitization of Croatian History Museum publications and the Digitization of museum material. Also, users are now able to get insight into the museum material without physically coming to the Museum (by email). This testifies to the ability of maintaining contact with users despite the closure of the Museum. It is precisely this approach that has enabled the Museum to fulfil its tasks in accordance with legal regulations. Thus, despite the earthquake and the pandemic, the availability of collections for educational, professional and scientific purposes is still ensured. Virtual exhibitions, published projects, presence on social networks, launching an electronic leaflet, all this contributed to the Croatian History Museum remaining visible among users, although physically closed. All these activities would not be possible without a large amount of digitized material and it is now clear that the crisis highlighted the importance of the digitization process. It has proven crucial to have digitized heritage in order to create new products and enable new access to it. From all the above, it is clear that the crisis caused by the pandemic and the earthquake contributed to the acceleration of the publication of digital content created by the long-term process of digitization of heritage in the Museum. In addition, one positive outcome of this crisis is the fact that the Croatian History Museum has finally been granted a building for its permanent exhibition. Now the Museum is facing new challenges of renewal, relocation and reopening to the public, so it can continue to perform its public cultural activities. Ultimately, it is the new space, the palace not far from the current accommodation, which will make it possible to overcome the challenges posed by the crisis caused by the pandemic and the earthquakes.

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Sažetak

Kriza? Digitalizirajmo! Kako je krizna situacija utjecala na procese digitalizacije u Hrvatskom povijesnom muzeju

Cilj. Cilj je ovoga rada analizirati mogućnosti korištenja postojećih projekata digitalizacije, kao i osmišljavanja novih, u kontekstu izazova uzrokovanih pandemijom i potresima, kao primjerima kriznih situacija. Rad se bavi odgovorom Hrvatskog povijesnog muzeja na složenu kriznu situaciju uzrokovanu pandemijom virusa SARS-CoV-2 i snažnim potresom koji je pogodio Zagreb 22. ožujka 2020. Kao rezultat tih događaja Hrvatski povijesni muzej do daljnjeg je zatvoren za javnost i suočava se s izazovom pronalaska novih modela komunikacije s korisnicima kako bi ispunio svoju svrhu i misiju.

Pristup/metodologija. Metodologija rada bit će usredotočena na analizu prethodnih projekata i korištenja procesa digitalizacije i digitalnih preslika kao isključivog i jedinog središnjeg pristupa u (obradi), osiguranju dostupnosti i prezentaciji muzejske građe u kriznim situacijama, s naglaskom na nove načine njezina korištenja i poboljšanje postojeće komunikacije Muzeja s korisnicima.

Rezultati. Rad donosi detaljan prikaz važnosti procesa digitalizacije i izrade digitalnih preslika te njihove implementacije u oblikovanju novih modela poslovnih procesa s mogućnošću uspostavljanja novih usluga i komunikacije s korisnicima u virtualnom okruženju.

Originalnost/vrijednost. Iskustva stečena ovim projektima mogu poslužiti Hrvatskom povijesnom muzeju i drugim baštinskim ustanovama u Republici Hrvatskoj u praktičnoj primjeni jednog od modela korištenja digitalizacije u svladavanju brojnih izazova, posebice u kriznim situacijama, s kojima se baštinske institucije danas suočavaju, a u čemu se ogleda i originalnost ovoga rada.

KLJUČNE RIJEČI: čuvanje, digitalizacija, muzejska dokumentacija, muzejska knjižnica, zaštita baštine

Earthquake and the pandemic on top of old problems – work of the Croatian History Museum after the Zagreb earthquake of March 2020 and during the Covid-19 pandemic

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Abstract

Purpose. The aim of the paper is to present the work the Croatian History Museum (CHM) has done to preserve cultural heritage and the use of its digital strategy to present that work. This was applied in the CHM's plan as the digital editorial board was formed to oversee and curate the Museum's presence on the social media and the internet.
Approach/methodology. The paper showcases the increase of online visitors and users that consume cultural heritage on online platforms through the examples of virtual exhibitions, social media posts and gathered data. The maintenance of a specifically targeted virtual identity of a museum helped in this regard, which is evident in the increase of online visitors. Data was gathered and interpreted by using Google Analytics and Instagram analytical data by the author throughout 2020, and the data suggest that digital museums have a lot of potential, in particular with modern online users.
Findings. The data presented in the paper shows that the online visitors were interested in the work of the Museum and that the promotion thorough social media generated online visitors as much as a real-life exhibition. It shows the interest in digital museums and the promotion of museum work online.
Research limitations. The author recognizes that the data presented in the paper is gathered only from one source as the author could not access data from other similar institutions which would have been used for comparison.

Originality/value. Through empirical examples, the paper showcases how useful a virtual museum can be in raising interest in cultural heritage. This is especially important in times when people cannot attend large social gatherings. Also, the paper describes the events and the work guidelines given at times of crisis such as earthquakes, which the author witnessed himself and participated in.

KEYWORDS: cultural heritage, digitization, history, museum, social media, virtual museum

1. Introduction

The beginning of year 2020 was quite hectic if you consider the onset of the COVID-19 pandemic. However, it became even more stressful when, on top of that, a strong earthquake damaged Zagreb and, later on, another devastating earthquake struck Central Croatia and further devastated Zagreb and its old buildings and museums. These problems piled onto the older well-known museum problems such as working with small exhibition spaces and struggling to attract new visitors to the Upper Town baroque Palace Vojković-Oršić-Kulmer-Rauch. All of these obstacles required a new perspective and a new way of museum operation by switching to digital and virtual space. The digital editorial board, that was already in place before the beginning of the year, had previously made steps towards promoting the Museum's work online. But after the March of 2020 this work intensified even further to promote the immediate protection of museum objects as well as continue to open exhibitions, but this time virtually using the Museum's website and social media platforms.

This paper showcases the results of the new approach of the CHM to its virtual and digital presence on its website and social media platforms. Data was gathered using Google Analytics as well as Instagram. This proposes a limitation as it does not have a relevant source of other historical museum data to compare it with, but strives to amend this shortcoming by providing the CHM data for the past three years. This paper analyzes the importance of having paid posts and using paid promotions on social media by comparing online visitors of a virtual exhibition, to the real-life exhibition of the CHM that was opened before the COVID-19 pandemic during the best visited month for the Museum. It also has to be stated that the virtual museum still cannot reproduce real-life exhibition visits, but it can try to replicate the museum experience. The situation regarding the immediate response after the earthquake and the working in groups was described in this paper from the perspective of the author who witnessed the events first hand or engaged in them personally.

2. Old problems

The CHM is situated in the Upper Town of Zagreb in a baroque palace built in 1764. The Museum was formed in 1846, and after years of changing locations and moving from one cramped space to another, it finally moved into the Palace Vojković-Oršić-Kulmer-Rauch in

Matoševa 9 street in 1959 (Szabo 1998, 30). The biggest reconstruction work on the Palace was done during the 1980s, and in 1991 the Museum was merged with the Museum of the Revolution of the Croatian People and the number of museum objects almost doubled. This meant that the Palace, which was already too small, became even smaller. Until today, over 350,000 museum objects are held in the CHM, which have never had a permanent exhibition since its inception (Škiljan 1996, 19).

Aside from the problem with lack of space, the Museum was also never in the media enough to promote its exhibitions or to promote its work to the audience. This meant that the public was not aware where some of the most important historical items from the 19th century Croatian National Revival were stored and preserved. This also meant that there was hardly any established online presence, let alone a digital image of the museum. Exhibitions never had enough finances for a marketing promotion of an upcoming exhibition, other than promoting it right before the opening (Pandžić 2008, 9).

As it was stated before, the museum collections grew immensely in 1991, and until 2021 the number kept rising. This means that there are around 70% of objects that were never presented to the public. This problem became even more complicated as a large number of objects had to be restored and exhibited adequately with regards to the strict restorer guidelines. Thus, some objects became prominent in every exhibition and were frequently used in all sorts of publishing material, while others were pushed to the sidelines either because they were harder to exhibit or expensive to restore (Pandžić 2008, 9).

Nevertheless, the CHM always tried to mitigate its complex situation, which is common to many museums throughout the entire world. Creating the Museum program in such a way that there are two big exhibitions and three smaller ones every year meant that the Museum objects can rotate more frequently. This way, even though there was no permanent exhibition, it became clear what the core of the Museum objects were, which clarified how to plan out the permanent exhibition in the future. It was also a mitigating factor that the Museum had an Internet website where virtual exhibitions could be published which was also used to exhibit objects and elaborate topics that were not necessarily attractive to the public. The other was using social media to attract followers who are interested in Croatian history and already used Facebook, but not to the extent they could have. All of these situations were in place before the pandemic and were already a big problem for the museum which has 31 employees, of whom 14 are curators (Pandžić 2008, 9).

3. Croatian History Museum and COVID-19

The first confirmed patient infected with the COVID-19 virus in Croatia appeared on February 26, 2020 which immediately transformed the public perspective of the disease that was previously talked about in the media as being far away (Lazić, Lazić and Kolarić 2020, 44). For the CHM this meant that the precautions were to be made even before the official instructions had been given. The structure of the museum professionals was looked at and groups of most endangered workers were identified and notified to stay aware of the situation and prepare for changes. When the official Croatian Institute of Public Health and the Government of the Republic of Croatia issued warnings and new forms of working in

interchangeable groups, it was done more easily as these had been previously identified.[1] The groups were switching their work in the Museum and from home every week. The group that worked in the Museum was spread out so every person was alone in their office as well as without contact with other workers when coming to the office and had to wear masks the whole time they were within two meters of anyone inside or outside. The group at home had tasks to keep working remotely, and specifically the digital editorial board of the Museum website and social media accounts made the plan to push the digital promotion of the Museum even further. Posting content on Facebook as well as the newly opened Instagram page was scheduled and made to promote heritage items from Croatian history. This was done to keep engaging the Museum followers with positive content and to promote the big number of objects from famous Croatian historical events and historical figures (Babić and Babić 2020, 25-32). A plan was made to film a virtual walk-through of, at that time, the current exhibition *Varvaria/Breberium/Bribir: Historical Layers Revealed* as well as guided tours with curators that would explain the process of working at the exhibition and its significance. Furthermore, there were plans to start making more video content and publishing it on social media to make the Museum work even more available for the online followers.

The work on the virtual museum was also accompanied by planning out the digital image of the Museum on all of its online platforms which the author planned out with the digital

Figure 1. *Example of a post on the CHM Instagram page with context and visual representation of objects* (Source: CHM Instagram page)

[1] The working regulation was made by the Government of the Republic of Croatia, but organizing in groups was already in place with the Museum's Plan of Emergency Management which the author also wrote. In this Plan groups of evacuation teams were suggested, which were used by the Museum's management during the first COVID-19 wave as a template for organizing working teams. This kind of preparedness helped structure the COVID-19 teams that worked from home and that worked in the Museum.

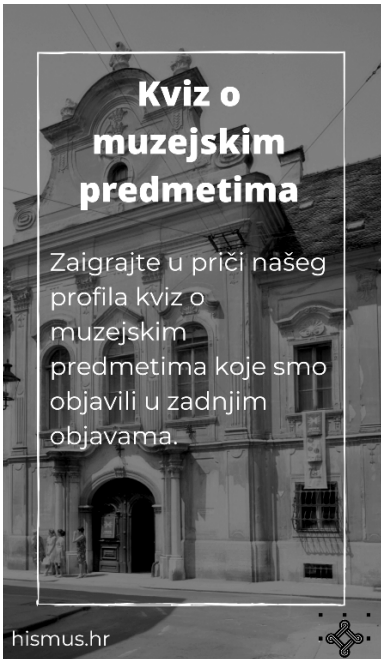

Figure 2. *Example of a quiz featured in the CHM Instagram story which used interactive features* (Source: CHM Instagram page)

editorial board. The way the Museum presents itself to the public shapes the way the public perceives it, and in the case of the history museum, it can also define the way the public grasps its national history and their connection to it (Markić, Bijakšić and Bevanda 2018, 235-237). Presenting an object that is over hundreds of years old or explaining the significance of historical figures from three hundred years ago can be challenging and the average visitor does not always get the importance or the relevance of it (Peroš 2015, 82-91). In the current digital age this can be mitigated with online platforms and visitor specific content that interests them. The CHM did not want to sacrifice the scientific and professional work for the social media but tweaked it to make sure the information was communicated through visuals as well as text materials (Stuedahl and Lowe 2015, 61). This means the visuals were planned out to be used for communicating information, so the textual content could be shorter and more user friendly on the social media platforms (Figure 1).

All of these features were made with the interactive part in mind so as to create the interaction the public has with museum objects in real-life exhibitions. This interactive part was done through quizzes (Figure 2), videos, comments on social media posts, and Q&A sessions from the Museum (Pruulmann-Vengerf and Aljas 2011, 111).

All of these plans were made for teams working from home and in the Museum offices under the assumption that this would be made also in the exhibition spaces as well as storage spaces. But this all changed in March when an unpredictable natural disaster struck Zagreb and Central Croatia.

4. Croatian History Museum and the earthquakes

The first earthquakes struck Zagreb on March 22, 2020 with the magnitude of 5.5 and 5.0 on the Richter Scale. The epicenter was about 7 km from the city center and it destroyed and damaged almost all the buildings in the Zagreb center, as well as the Croatian History Museum's Palace Vojković-Oršić-Kulmer-Rauch. It was the strongest earthquake to hit the capital since 1880, and around 25,000 buildings were affected. Of the total, 4,998 have a yellow tag and 1,342 the red tag, with yellow being a building that has parts with structural issues, and the red being a building that is completely uninhabitable. Unfortunately, one person was killed, and 27 others were injured. All of this happened at the height of the first wave of the COVID-19 pandemic during which everything was locked down and people worked remotely from home wherever it was possible (Šavor Novak, Uroš, Atalić, Herak, Demšić, Baniček, Lazarević, Bijelić, Crnogorac and Todorić 2020, 845).

The plans for creating video content and guided tours in Museum spaces that were already in place were postponed, and the focus was switched to immediate help, first to the Museum professionals and then to the Museum itself. The evacuation teams that were in place had to be adjusted for functioning during the pandemic restrictions, and they immediately managed to get to the Museum building (Terbush Watson 2010, 2). The teams working from home continued work on making the public aware of the situation the Museum found itself in, as well as going on with publishing posts on all digital platforms to continue the work of the Museum virtually.

After the officials gave the permission for the Museum evacuation team to enter the building, it was established that the building was structurally heavily damaged, but after careful inspection there was no heavy damage found to the objects that were in the exhibition space, or in the storage rooms. The strict policies the CHM follows for exhibiting items paid off, as they saved a lot of items that were exhibited or stored. This solidified the Museum's work on promoting heritage protection and its insistence on adhering to every single strict restorer guideline when exhibiting objects (Dorge and Jones 1999, 31). The online and digital work of the Museum professionals also switched to promoting heritage protection work as well as cooperation with other museums and professionals in Croatia as well as internationally (Figure 3). All of these decisions were made while working in groups remotely and with evacuation teams in the Museum Palace.

Figure 3. *Post promoting conservation work done on the Museum that became popular very quickly on the CHM Instagram page* (Source: CHM Instagram page)

The biggest challenge was to coordinate the work of the teams at home and the team in the "field", so to speak. What the team did in terms of protecting and evacuating museum objects was promoted online to show the readiness of the Museum workers to respond in stressful situations and under pressure. This brought forward the public awareness of what museum professionals do and how they protect heritage objects. Some Museum staff had experienced working on protecting heritage objects during crisis, as the CHM had a strict team regulation policy during the Homeland War.[2] And this was also a time when solidarity within the museum community manifested itself as a lot of museums from Zagreb, as well as Slovenia, sent materials that helped greatly in the process of packing and evacuating items.[3]

The December earthquake that struck Central Croatia with the magnitude of 6.4 on the Richter Scale affected the areas around Sisak, Petrinja, Glina as well as the towns and villages in that area and killed seven people while injuring 26 others, and leaving huge areas destroyed, damaging the buildings in Zagreb even further (Ros Kozarić 2020, 7). Thus, the Vojković-Oršić-Kulmer-Rauch Palace, which had some restoration work done on it, was damaged additionally. Some of the museums in Central Croatia reported heavy damage and people from all around Croatia and Europe organized themselves to send immediate help to the many people that had lost their homes and livelihoods. Once more, the solidarity of the Croatian people manifested itself during times of crisis, and this was also done in the museum sector. Some museum workers organized among themselves to send help to Sisak, Petrinja and Glina. Also, the intervention of The Italian Carabinieri Department for the Protection of Cultural Heritage, or the so-called *Italian Blue Helmets*, helped evacuate many heritage objects in the area, which brought forward the discussion in the Croatian museum sector of the need for such an evacuation team on the national level.[4] The issue of protecting cultural heritage is not a new one or just a museological one, as it has become one of the main tasks of even some military units around the globe (Jasperro 2015, 92-95).

5. Going Digital

The switch to digital content and virtual exhibitions meant that the content had to be adjusted for online users but without sacrificing the historical significance and scientific research museum professionals put into it. It was not just about publishing pictures and visuals but making them interesting and easy to consume on social media and the Museum website. It was noted that a lot of text in the posts was not read by the users, so the part of the information that was supposed to be conveyed in text was adapted into

[2] Convention for the Protection of Cultural Property in the Event of Armed Conflict with Regulations for the Execution of the Convention. The Hague, 14 May 1954. https://en.unesco.org/sites/default/files/1954_Convention_EN_2020.pdf

[3] All of these events were accompanied by social media posts that promoted this kind of work. The online public responded quite well to it by liking the posts and engaging in comments.

[4] The Croatian Mountain Rescue Service participated in evacuating museum objects from damaged buildings. This prompted some museum professionals to talk about further education and training for this kind of intervention but within the guidance of the Croatian Ministry of Culture and Media.

visuals. This was found out through the Q&A sessions with the followers on the social media platforms. This meant that the visuals were interactive, the text in the visuals was interesting for quick reading in only a couple of seconds, judging by the attention a regular user gives a random post on social media. This kind of a visual is usually meant to be an eye catcher so, if it is interesting, a user who wanted to know more would read the whole text under the post, or, in some cases, in the story function of the social media platform (Stuedahl and Lowe 2015, 64). Furthermore, it was noted that users liked to interact online, thus the content was adapted in the form of quizzes, give-away prize games, Q&A sessions, puzzles and so on. This sparked interest with the online users to contact the Museum in the comment section and inbox messages which testifies that the online followers understood the new way of online presence of the Croatian History Museum and that the goal of making historical heritage closer to the public was beginning to make sense (Stuedahl and Lowe 2015, 65).

The whole brunt of the museum work was presented online, such as researching particular objects and presenting the new information to the public, analyzing different objects with the focal point of explaining their symbolism and historical significance, promoting the heritage protection done on the objects and on the baroque palace and similar. All the while it was important for the Museum to maintain the identity of a history museum (Pruulmann-Vengerf and Aljas 2011, 110). The CHM maintained that identity by promoting significant historical objects connected to Croatian national history and promoting virtual exhibitions.

6. Reassuring the Position of the Virtual Museum in the Future

During the COVID-19 pandemic all museums in Croatia shifted their work online, and the Croatian History Museum also had the adversity of having its baroque palace and exhibition space heavily damaged during earthquakes. Nevertheless, it became obvious that the real-life visitors also used various online platforms and that virtual visitors could replace them. Since the CHM started using Google Analytics in 2018, the data has shown a rising trend of online visitors (Chart 1). This was also used to promote various virtual exhibitions, such as in the case study of the virtual exhibition *Your documents, Please!*.[5]

In this exhibition (Figure 4), a series of documents from the 19th to the 20th century was presented online, with structural explanations of the objects in a catalogue form, but also giving context of the development of identification documents. The topic might not be very attractive to a large audience, but the objects presented online were unique in the sense that many of them were published online for the first time, some presented to the public for the first time, and some of them were in such a condition that it would be difficult and

[5] The virtual exhibition *Your documents, please!* was published on the CHM's website and is available on the following link: https://www.hismus.hr/en/exhibitions/virtual-exhibitions/your-documents-please/ [Accessed on June 29, 2021]. The promotion was done in accordance with the editorial board using social media platforms of the Museum.

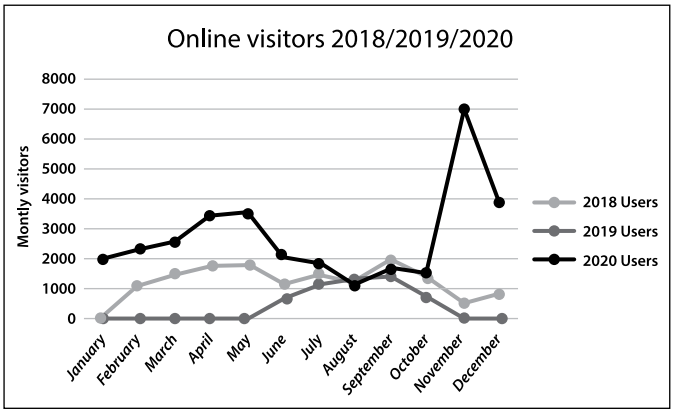

Chart 1. *Google Analytics data of visitors in the last three years*
(Source: CHM Google Analytics)

expensive to exhibit them in a real-life exhibition. Thus, the digital editorial team developed a series of five Facebook and Instagram ads to promote the exhibition. Using social media such as Facebook and Instagram, the virtual exhibition *Your documents, please!* was promoted with paid posts in a campaign made by the author and curator Petra Braun. The paid posts went on from November 6 to 24, 2020. During that period a total amount of USD 108 were spent on advertising these posts which in turn attracted 3,472 online visitors. This data is shown on Facebook as well as Google Analytics of the CHM and diving deeper into those numbers gives an even clearer picture. Of those online visitors, 87% were new ones which means that in three weeks the Museum reached a newer audience in a very easy way. From that new audience, 66% of them are male and 34% are female, and the age group that was the biggest reached was between 35 and 65 years of age. The majority of that audience view the virtual exhibition on their mobile phones.[6] For comparison, the CHM 2018 annual report states that the exhibition *Unreachable Heritage* in January had 4,762 visitors, of which

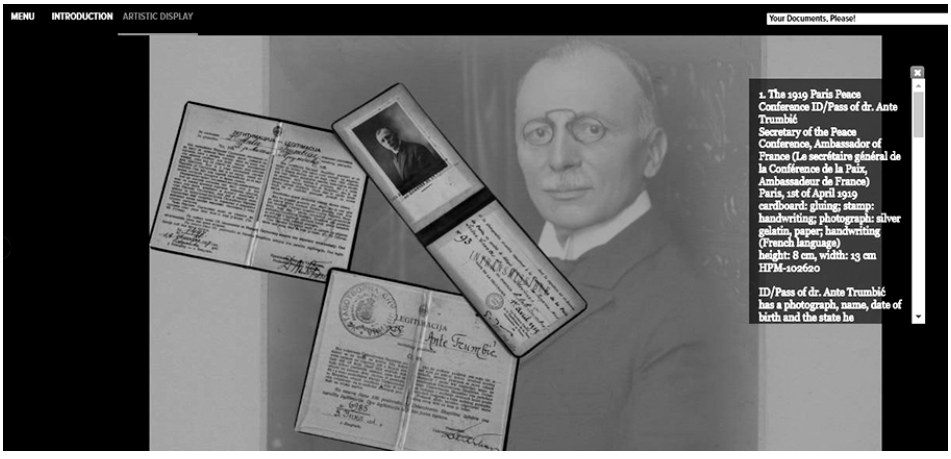

Figure 4. *Virtual exhibition „Your documents, please!" on the CHM's website* (Source: CHM website)

[6] The data was gathered by the author of this paper using Google Analytics.

4,360 had free admission because of the *Night of the Museum* event on January 26, which is very popular in Croatia, and for the CHM it is the busiest month considering visitor count. Comparing these two exhibitions it is evident that the virtual exhibition *Your documents, please!* reached 73% of *Unreachable Heritage's* total audience but had only a small budget for marketing.[7] These numbers testify to the big potential in online visitors and virtual exhibitions that can be used to reach a new audience.

This kind of information is very valuable for any museum as it shows directly how the visitor interacted with the exhibition, and the museum professionals can review this data and adapt to it in future exhibitions. The data-driven and analytical approach is what would be a great start for a virtual online historical museum. This type of focus of bringing the real-life museum experience online, as suggested by Biedermann (2017, 282-292), was the focal point of CHM online work. It was important to maintain the online visual identity of the historical museum and continue to adapt to new circumstances in accordance with the data-driven decision that became a new way of functioning for many museums in the world during the COVID-19 pandemic.

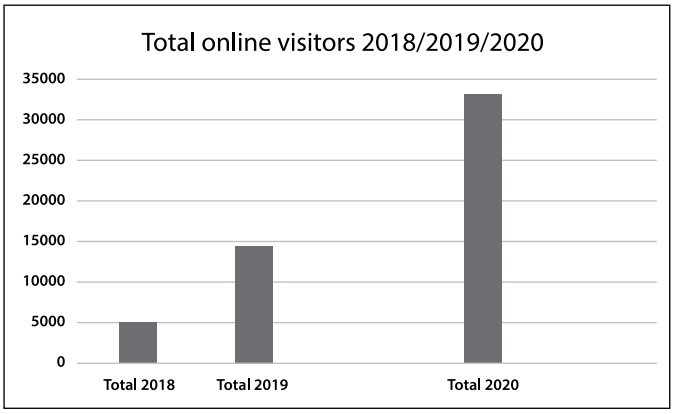

Chart 2. *Google Analytics data of total online visitors in the last three years* (Source: CHM Google Analytics)

The total of visitors online increased in three years, and the jump from 2019 to 2020 is noticeable (Chart 2). There are many reasons for it, and the biggest three are that the Museum formed the editorial board for online platforms in 2019, the COVID-19 pandemic and the lockdowns started in 2020 when many businesses switched to online work and the editorial board had a smaller budget for marketing in 2020. These reasons resulted in the huge increase in online visitors which testifies to how the digital museum can function and that it does have an audience. The constant struggle to attract visitors and make them aware of exhibitions can also be solved by using online platforms and making objects and exhibitions available on mobile phones and computers. This can also result in the influx of redundant virtual exhibitions, but it is up to the Museum staff to decide what they want to do. Many new platforms, such as Google Arts & Culture, can be used by a museum to create virtual exhibitions and make them easily available for mobile users which make up for the biggest

[7] The data is published in the Annual Report of the Museum that the Museum Documentation Center publishes on their website on the following link: https://www.mdc.hr/files/pdf/Izvjesca/2018/Hrvatski-povijesni-muzej-2018_mdc.pdf [Accessed on September 8, 2021].

Figure 5. *The CHM Instagram page with the „highlights" feature at the bottom* (Source: CHM Instagram page)

number of users on the Internet. If a museum has its own platform for virtual exhibitions, it is even better as they can be created more easily, however, those platforms and the required software can be expensive. Nevertheless, it is paramount to plan out those expenses in advance and try to make do with the current social media platforms which the CHM did (Lazzaretti and Sartori 2016, 960). For example, the Instagram account of the Museum used all its features that are available such as the IGTV, post, story and highlights (Figure 5).
For someone new to social media, it takes a lot of work to get to know the platform but it pays off in gathering new followers that would not know of the museum's content otherwise. Recently, the Museum started to develop posts on Instagram as a sort of virtual exhibition by making a string of posts about a particular topic and sorting them using the

Figure 6. *The way content is visualized for the „story" feature on the CHM Instagram page* (Source: CHM Instagram page)

highlights feature. The story function on Instagram is particularly useful as it boosts the amount of people who see your content, and you can make interactive features such as quizzes and Q&A sessions about the objects and museum work more easily (Figure 6).
All of these features are nothing new for someone who is a social media manager, but for museum workers who have many other responsibilities it represents another one on top of others. These features were used to make the content relatable and to engage the online users with the museum objects in a fitting way (Storsul and Stuedhal 2007, 130).

Table 1. *Instagram analytics data of total online users and followers after changing the visual identity* (Source: CHM Instagram page data)

Instagram data after changing the visual identity of CHM (November 24 –December 24, 2020)	
Number of reached users	59,2% increase
Total number of followers	13,5% increase

Table 1 shows the data on the CHM Instagram account visitors and followers after the digital editorial board started a new approach by posting and communicating with their audience on the platform. The virtual identity of the CHM page was adapted to this new style and has been maintained ever since. Comprising the virtual identity was a challenge that the editorial board decided to take because the content was streamlined for Instagram, in particular. The logo, the web address as well as the interactive quizzes and contextual storytelling with text in pictures for quick reading was used to engage large audience. The goal was to bring historical items and stories from national history closer to the followers. The big increase in the number users and followers in just a month showcases the success of this approach.

7. Conclusion

The last two years have been difficult for all museums, and for the Croatian History Museum, it represents a year in which new problems piled upon older problems. Not having a permanent exhibition, not having enough exhibition space, not being able to exhibit particular items and not having a big budget for promoting themselves are probably the main problems for many museums in the entire world. Having been struck by two devastating earthquakes at the height of the COVID-19 pandemic can seriously damage the workers' morale, but it can also be an opportunity to see what can be done with the tools available at the moment. Switching online and creating digital content as a historical museum is a challenge, but also an essential way of functioning in the modern age of the Internet and social media. Using every tool available on the websites, social media platforms and many others, is a must for the museums to be present in the 21st century public sight. It can also be a way to research the digital space for new interesting topics as well as potential digital collections.
As the editorial board started to work on the new virtual identity for the CHM Instagram account, in just a few months' time it paid off as the number of followers grew exponen-

tially. Using photographs of objects as a vehicle for visual storytelling and keeping the text streamlined proved successful with the users as they responded in the Q&A session positively to it. As the virtual exhibitions became the focus, experimenting with paid online ads proved that a small budget in just two weeks can generate almost as many visitors as a real-life exhibition. Gathering and interpreting the data gathered through Google Analytics for the website traffic and Instagram analytics for social media traffic result in the conclusion that the online users are interested in virtual museums and are willing to participate in interactive ways such as quizzes, Q&A sessions, direct messages and commenting on posts. The case of the CHM doing its digital work should be compared to the data of other museums. The author could only provide the CHM data, but it suggests that careful consideration of a virtual identity and making interactive content that targets user-specific interest are the way to go for digital museums.

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Sažetak

Potres i pandemija povrh starih problema – rad Hrvatskog povijesnog muzeja nakon zagrebačkog potresa u ožujku 2020. i za vrijeme COVID-19 pandemije

Cilj. Svrha rada jest predstaviti aktivnosti koje je Hrvatski povijesni muzej (HPM) poduzeo s ciljem čuvanja kulturne baštine i predstavljanje tih aktivnosti digitalnom strategijom. To je primijenjeno u HPM-u osnivanjem digitalnog uredništva koje je nadgledalo i vodilo prisutnost Muzeja na društvenim mrežama i mrežnim stranicama.

Pristup/metodologija. Koristeći kao primjer virtualne izložbe, objave na društvenim mrežama i sakupljene podatke, rad predstavlja povećanje virtualnih posjetitelja i korisnika koji konzumiraju kulturnu baštinu na digitalnim platformama. Održavanje specifičnog virtualnog identiteta Muzeja pomoglo je tome povećanju, a predstavljeno je povećanjem broja posjetitelja na mrežnim stranicama. Podatke je sakupio i interpretirao autor s pomoću Google Analytics i Instagram analitičkih podataka za vrijeme 2020. godine, a pretpostavljaju mogućnost i potencijal digitalnog muzeja kod modernih korisnika.

Rezultati. Podaci pokazuju kako su mrežni korisnici imali velik interes za muzejski rad i da promocija društvenim mrežama generira velik broj posjetitelja jednako kao i stvarna izložba. Ukazuje se na to da postoji interes za digitalnim muzejom i promoviranjem muzejskog rada na mrežnim stranicama.

Ograničenja. Podaci korišteni u radu sakupljeni su od jednog izvora budući da autor nije imao pristup podacima sličnih institucija, a koji bi bili korisni za usporedbu.

Originalnost/vrijednost. Koristeći se empirijskim primjerima, rad predstavlja koliko koristan virtualni muzej može biti za podizanje svijesti o kulturnoj baštini. To je posebno važno u vrijeme kada ljudi ne mogu ići na veća društvena okupljanja. Isto tako, rad opisuje događaje i upute rada u kriznim situacijama kao što je potres, kojima je autor svjedočio i u kojima je sudjelovao.

KLJUČNE RIJEČI: digitalizacija, društvene mreže, kulturna baština, muzej, povijest, virtualni muzej

Libraries in the crisis

Academic and special libraries in Croatia and their crisis preparedness: a survey

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Abstract

Purpose. This research aimed to assess the state of crisis preparedness, management, and the potentials of crisis response in academic and special libraries in Croatia. The majority of academic and special libraries in Croatia are not a standalone institution: they are an integral part of other institutions or organisations, making their freedom in establishing crisis management actions limited. These libraries are specific in their organization, users and collections, and a significant part of them holds valuable heritage collections of old and rare library materials.

Methodology. Data was collected through an online questionnaire that was sent to all Croatian academic and special libraries. The questionnaire included questions about risk assessment, the state of crisis management, current experience, and education of the staff, as well as the levels of crisis preparedness and that of crisis occurrences. Since a significant percentage of Croatian academic and special libraries is located in Zagreb, emphasis was laid on recent disasters (earthquakes and floods in 2020) and the way the libraries responded to them.

Results. The results have shown considerable discrepancies in the equipment, conditions, and the crisis mitigation capacities among the surveyed libraries. They have shed light on the frequency of crisis situations and the ways libraries cope with them.

Originality. The research contributes to the development of preservation of library materials by bringing new insights into crisis management in academic and special libraries in Croatia. The collected data will serve as a good basis for planning and organising collective education and targeted actions in improving heritage preservation at risk.

KEYWORDS: academic libraries, cooperation, crisis preparedness, crisis response, heritage collections, special libraries

1. Introduction

One of the key features of a heritage institution is collection preservation. Safeguarding collections implies caring for the specific needs of collection items, providing adequate surroundings for maintaining its function and slowing down the degradation processes imminent to ageing. Although the current technological advancements give us possibilities in modelling preservation methods and actions that had been unimaginable before, the majority of heritage institutions collect and store items of such diversity and needs, counting in thousands, making it impossible to address them all. For most heritage institutions, it is challenging to organize regular collection preservation while keeping all the components in balance, let alone at times of crises.

In the last few decades, following great heritage losses due to natural or man-made disasters, the awareness of the importance of risk and crisis management in heritage institutions has been increasing, resulting in an abundance of publications, congresses, lectures and seminars. Still, in practice, many heritage institutions are lacking funds, infrastructure or staff to implement best practices in care and damage prevention in their collections. Even when willing to do something, they do not know where to start. Libraries are no exception.

The motivation for the research was the year 2020, which was challenging on a global scale. With the Covid-19 pandemic, the world was facing economic, political and other turbulence. Amidst all of it, Croatia was struck by several natural disasters, earthquakes, floods and extreme weather. The year 2020 reminded us once again that no place in the world is immune to a natural disaster. Having the experience in dealing with heritage protection in crisis during the War for Independence in the 1990s, this research had in mind to find out if previous lessons have been learned.

2. Literature review

Crisis preparedness in libraries as a topic in research has had an evident increase in the last two decades. Looking at crisis management as a whole, the focus shifted from crisis recovery to that of preparedness and prevention. It has become evident that proper preparedness leads to a decrease in damage when crisis situations occur. In this abundance of literature, crisis preparedness planning is rarely positioned in the context of library material preservation. This is partly because disasters in libraries influence not only their collections, but also their users, employees, buildings, equipment and systems (Eden and Matthews 1996).

Standards based on extensive research in the care and protection of heritage in libraries are well-established (Petherbridge 1987; Boston 1998; Balloffet and Hille 2005; Zerek 2014). General guidelines for care and protection of library materials were published by IFLA in 1998 (Adcock 1998), followed by numerous ISO standards regarding specific aspects of library material preservation (ISO 14416:2003, ISO 16245:2009, BS EN 15757:2010, ISO 18934:2011, ISO11799:2015). Since one of the basic preservation concerns in a heritage institution is having a crisis preparedness and recovery plan (Larsen and Silverman 1991, 240-244), the need for practical guidelines in organizing preservation management in crisis situations was met by the IFLA which published its short manual in 2006 (McIlwaine 2006). UNESCO followed with its straightforward "Managing Disaster Risks for World Heritage" manual in 2010 giving practical advice about organizing crisis management in heritage surroundings. However, having quality guidelines is not the same as implementing them.

In the attempt to research the implementation of various standards regarding collection preservation in libraries, a survey was done by the IFLA in 2016, resulting in a catalogue of standards, guidelines and best practices that are most often implemented in the surveyed institutions (Niet et al. 2016). While informative on the implementation of standards and protocols in libraries around the world, as well as the percentage of libraries having a written crisis preparedness plan (a high 59% of the surveyed libraries affirmed having one), the limitation of this survey was that the national libraries in financially prosperous Western countries accounted for the biggest portion of the sample leaving us with no information on how the problems with disaster preparedness are tackled in smaller libraries.

Using a similar methodology as the IFLA, recent research on crisis preparedness in libraries was done around the world using different samples and variating the location coverage. Here one has to differentiate between the research on the preparedness of libraries for the purpose of minimizing collection damage or loss, and the research done on crisis recovery in libraries after a certain type of disaster has already struck the surveyed institutions. The latter always increases after some natural or man-made disaster has occurred.

Crisis preparedness in libraries with an accent on prevention was studied in the academic libraries in Greece (Kostagiolas et al. 2011), the polytechnic libraries in Gana (Ayoung et al. 2016), the university libraries in India (Kaur 2008), the libraries and archives in the Middle East (Hussein Moustafa 2015) and South African libraries (Chizwina and Ngulube 2021). All those studies found that crisis preparedness in the surveyed institutions is

insufficient, crisis management is ill-organized and a written crisis preparedness plan is present in far fewer libraries than found in the survey by the IFLA (Niet et al. 2016). And again, one must consider that having a crisis preparedness plan is different from implementing it properly.

When researching the implementation of crisis preparedness plans in libraries, Muir and Shenton (2002) came to the unpopular conclusion that having a plan did not make much difference in disaster recovery. What made a substantial difference were the preparedness, training and education of the staff in implementing such a plan. For it to be functional, a crisis preparedness plan has to be practised, regularly updated and all employees must be empowered to act upon it. In practice, it is rarely done.

The research in Nigerian university libraries (Ilo et al. 2020) shows a lack of awareness among the library staff regarding crisis management, but it also relates the awareness to having a written emergency plan. In other words, staff awareness brings about the full potential of a written crisis preparedness plan, while having a written plan broadens the awareness about crisis management among the staff. It's a two-way circle.

The preparedness of Croatian libraries for crises, crisis recovery and the overall risk awareness has so far been studied sporadically and only partially (Holcer 2009; Krtalić et al. 2011a; Krtalić and Hasenay 2011; Krtalić et al. 2012; Barbarić 2013). The results of the studies show that the libraries were not equipped with at least the legal minimum of protection for the collections they were holding (Holcer 2009; Barbarić 2013). They also point out the lack of policy documents or specific guidelines which would facilitate the preparation of the required procedures and protocols. International surveys that included Croatian libraries in their samples reported equivalent results (Varlamoff and Plassard 2004; Matthews 2007). Even though the results of those studies are not entirely comparable, since they do not refer to the same research sample or the identical research area, and a lot of time has passed since the last research, the general impression is that things are moving forward, but unevenly and slowly.

3. Methodology

Croatian academic and special libraries are specific for their rich and diverse collections, as well as their formal and legal status (Pikić 2020). Knowing about the damage and loss to the library materials during recent natural disasters, it is evident that we were (once again) caught off guard. This research aimed to assess the current state of crisis awareness and preparedness in those libraries to plan future developments through targeted actions and educations.

Assuming the main factors that cause collection damage and loss due to disasters, the research questions were as follows: a) what are the infrastructural conditions of these libraries, b) what are their past experiences with disasters and c) how are they prepared for future crises?

3.1. Procedure

The research was organized into two parts. In the first part, we tested the questionnaire on a small sample of librarians, which allowed for the detection of unclear questions or options, and the time needed to answer them. These were corrected before distributing the final version.

The main study was conducted from October 5 to 25, 2020 with the Croatian academic and special libraries' representatives. An online questionnaire was designed using Google Forms and distributed via e-mail.

At the beginning of the questionnaire, the respondents were informed about the aim of the research, the approximate duration of the survey and the planned methods of results dissemination.

The online questionnaire consisted of twenty-two questions and had an estimated completion time of five minutes.

3.2. Instruments

The survey comprised questions about library equipment and infrastructure, organization and staff education in terms of crisis management, and the experience in dealing with crises collected so far. The questions were composed according to international standards in the field (Shenton 2000; ISO 11799:2015; ISO 31000:2018; Dawson 2018). The questionnaire was formatted with closed questions (where respondents choose from a list of potential answers) for a faster and easier response because they require no writing, and their quantification and analysis is simpler (Oppenheim 2000). To mitigate the possibility of spontaneity and expressiveness loss, we included an "Other (please specify)" option, which enabled the respondents to add their preference. Apart from the answers Yes/No, Region and Library type, the participants were allowed to select more than one option from the set of answers. At the end of the questionnaire, there was also an option to add any comment regarding the theme.

3.3. Sample details

The questionnaire was validly completed by 150 library representatives which makes 68% of all academic and special libraries in Croatia, which has 221 in total. This is more than two out of three libraries, which makes the sample relevant for generalization purposes.

By type, 6 out of 8 (or 75%) of all Croatian university libraries answered our questionnaire, 62 of 94 higher education libraries (66%), 2 out of 2 scientific libraries, in other words all research libraries and 80 of 117 special libraries (68%).

As seen in Chart 1, if we combine all higher education libraries, including university libraries and research libraries under one denominator called academic libraries, we can say that almost the same number of special and academic libraries took part in this research.

As expected, the majority of them are situated in the City of Zagreb, the capital and the biggest city in Croatia (25 academic and 33 special libraries, 39%), followed by other counties with cities larger than 100,000 inhabitants: Split-Dalmatia County (9 academic

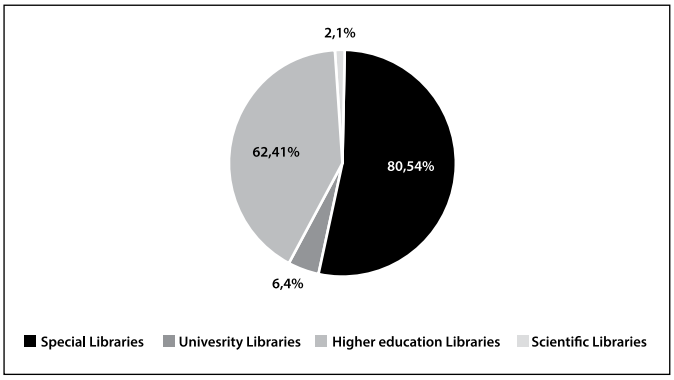

Chart 1. *Types of libraries represented in this research*

and 11 special libraries, 13%), Osijek-Baranja County (10 academic and 5 special libraries, 10%) and Primorje-Gorski Kotar County (10 academic and 4 special libraries, 9%).
When it comes to the legal status of these libraries, as seen in Chart 2, a substantial majority of the libraries are a dependent component of a parent legal institution making their organizational and management capacities limited. Only 7% of the academic libraries are an independent legal entity, and when it comes to special libraries, only 1 of them.

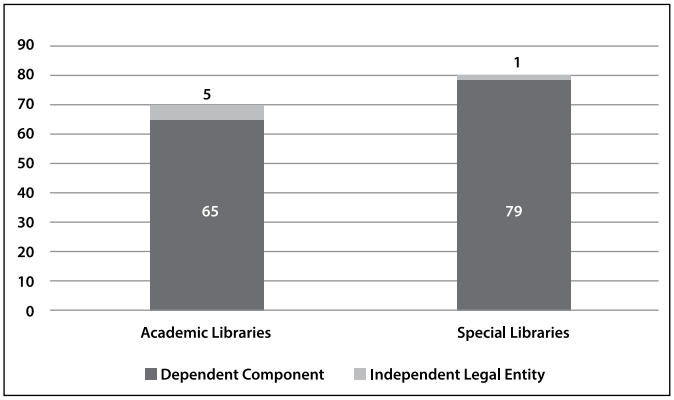

Chart 2. *Organisation structure of libraries*

3.4. Results and discussion

3.4.1. The adequacy of library location and settings

The adequacy of library location and settings in the context of collections safety is not satisfactory as 28% of the libraries are situated in buildings that are 100 to 199 years old. Special libraries are generally located in older buildings than the academic ones. Thirty percent of academic libraries and 58% of special libraries are located in buildings older than 100 years (Chart 3). If we look at these numbers in the context of the first earthquake-resistant construction legislation which came about in Croatia around 1964 (Jurukovski and Gavrilovic 1994), as much as 71% of the libraries are found in buildings that were originally built without anti-seismic reinforcements.

If we overlap this information with the current earthquake map of Croatia (Herak 2011), as much as 83% of Croatia's special and academic libraries are found on the seismically active ground. These facts should be of great concern for the heads and representatives of the academic and special libraries.

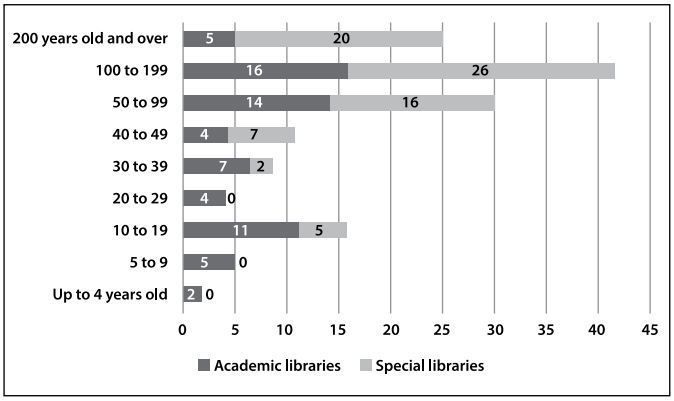

Chart 3. *The age of buildings in which the libraries are situated*

The location of library storage inside of the building poses another potential problem in mitigating crises. Around 30% of libraries situate their storage in a basement or an attic. These locations are generally thought of as unfit for storing collections, in terms of not only the ease of evacuation, but also resistance to extreme weather, floods, and such (Balloffet and Hille 2005). As seen in Chart 4, basements are more frequently used solutions than the attics.

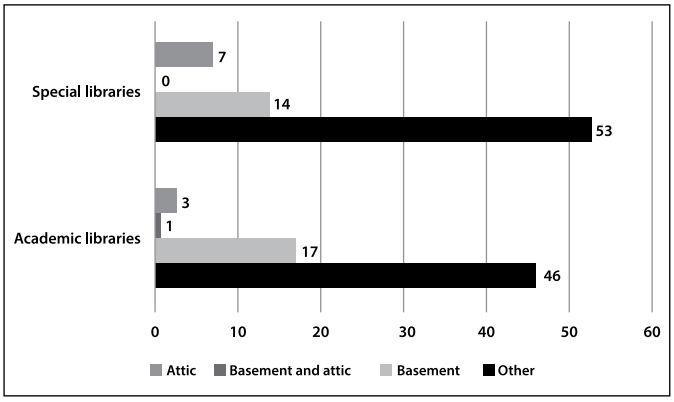

Chart 4. *The location of library storage inside of the building*

3.4.2. Library equipment

When posing questions about library safety equipment regarding crisis prevention, answers vary considerably. Six percent of the libraries had no form of fire protection system whatsoever. On the other hand, 53.3 % of the libraries reported having full fi-refighting systems equipped with a fire alarm (Chart 5). Fire protection is not enhanced through the choice of shelving either. Almost every fourth library (23%) has shelves made of wood or wooden products, 30% of them have metal shelves, and the rest have a com-

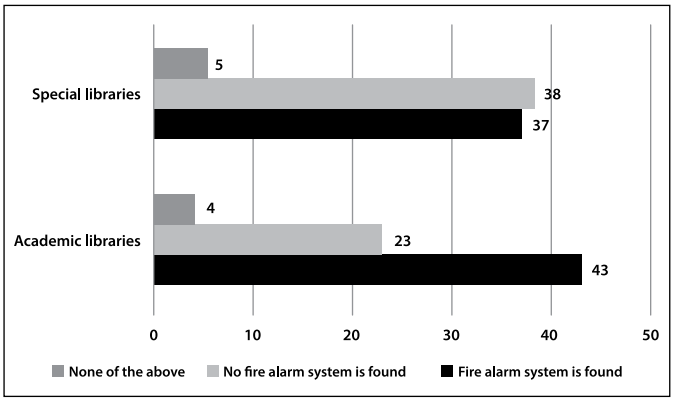

Chart 5. *Type of fire protection systems found in libraries*

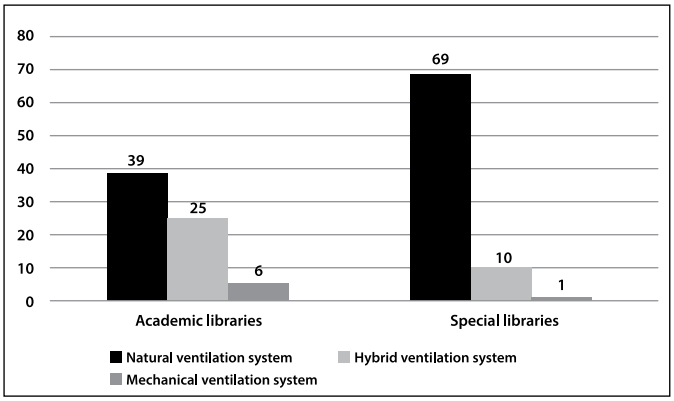

Chart 6. *Type of ventilation system used on libraries*

bination of both.

The shelves in our libraries are not reducing other potential risks either. Almost one-third of the libraries do not have all the shelves raised from the floor at least 15 cm, with a slightly better situation in the special libraries (26%) than in the higher education

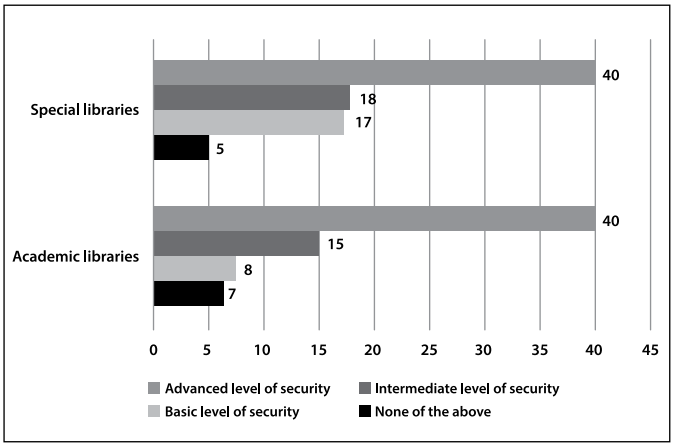

Chart 7. *Level of security found in libraries*

libraries (more than a third of all libraries, 36%). Out of 150 libraries, 66 responded that they do not have all the shelves closed at the top (44%), with the situation slightly worst in the special libraries (49%). This means only a third of the surveyed libraries have their collections shelved according to the standards (ISO 11799:2015).

Ventilation is rarely achieved through ventilating systems; as much as 72% of the libraries use only windows for this purpose. As seen in Chart 6, only 5% of the libraries reported to have a closed ventilation system, and those are found in the academic libraries.

It is not much different if we look at the security system graph. Six percent of the libraries have no form of security system for their institutions whatsoever, whereas 53.3% of them have elaborate systems combining video surveillance, protection services and user registers (Chart 7).

3.4.3. Crisis preparation and mitigation planning

Crisis and disaster situations are something that cannot be predicted. What can be done is to educate and prepare ourselves so that the worst-case scenario could be prevented. Sixty percent of the libraries outlined to have at least a basic level of education regarding emergency recovery, mostly only legally binding training, such as occupational safety and health at work courses. If we look at the numbers from another angle, this means that 40% of the libraries did not have even the basic training on handling fire extinguishers.

Out of four university level LIS programs in Croatia, two have obligatory courses in preservation of library materials, while the other two offer such content only as elective. However, only one programme has an elective course dealing with specific aspects of preservation in crisis situations and risk management. Even though it is possible that some aspects of risk assessment and crisis management are discussed within other courses, it is far from giving future librarians the needed competences (Alajmi and Al-Qallaf 2018).

Infrequent seminars or workshops are often inaccessible for librarians coming from remote libraries and are unable to substitute continuously organized and targeted training. Although the Centre for Continuing Education of Librarians in Croatia has been offering

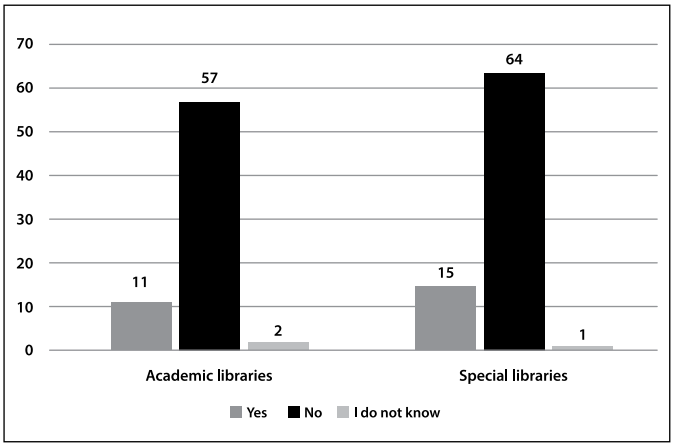

Chart 8. *Risk assessment made for the library*

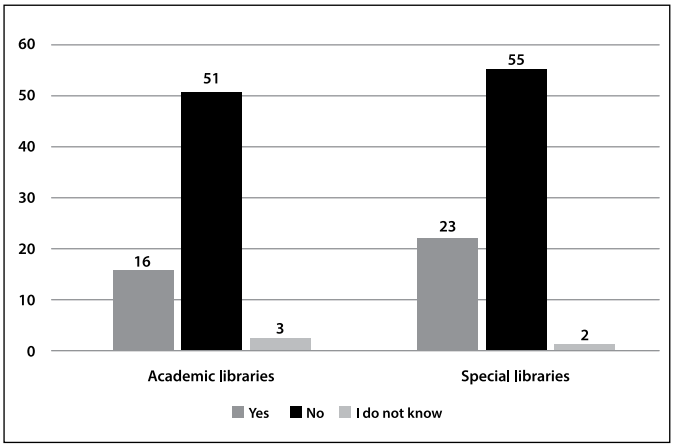

Chart 9. *An emergency plan made for the library*

two to three seminars, workshops or webinars yearly since 2002, dealing with subjects such as the protection of library collections in crisis situations, disaster preparedness or preventive conservation of written heritage (Filipeti 2021), the need for a broader increase in awareness, librarian competences and capacity building is evident.

Only 16.7% of the libraries stated that they have a risk assessment made for their institutions (Chart 8), and 26% of them have written procedures in cases of emergency (Chart 9). These percentages are far below the expected level since all legal entities in Croatia are obliged to have them. What is obligatory is the risk assessment and emergency procedures only regarding people, staff, leaving it up to the institutions to choose if they want to do the same for their collections. And if 35.3% of the libraries reported having old, rare books or manuscripts in their collections, the numbers are not reassuring. Especially when of those, only 26% have reported storing them in adequate conditions.

We have asked legal representatives of special and academic libraries to name the biggest challenge in their crisis managing, and their answers are represented in Chart 10.

Of them, 37% stated that space is the biggest obstacle in their crisis management, 16% found the managements of their parent institutions to be the obstacle and another

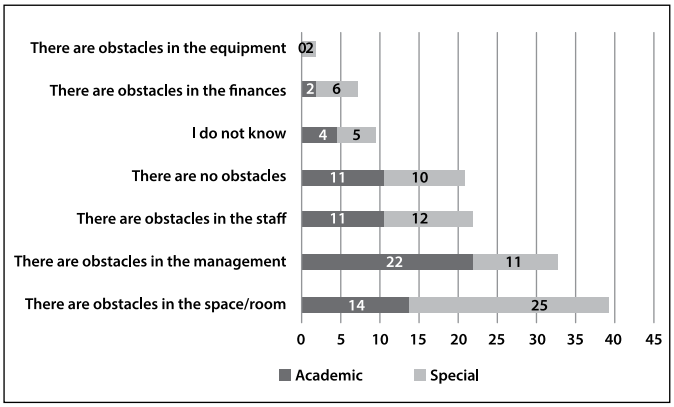

Chart 10. *What is thought to be the biggest challenge in crisis managing*

18% stated the staff represented the biggest challenge. When we look at the numbers regarding the library type, special libraries face more challenges regarding space (37%), while academic libraries find that the managements of their parent institutions are the most challenging for them (35%). Interestingly, 15% of the libraries stated that there are no obstacles to their good crisis management so it is safe to assume they are satisfied with it.

3.4.4. Incidents and cooperation

If we look at their experience so far, almost two-thirds of the libraries reported at least one incident in the past 10 to 15 years. Most reported incidents are water and earthquake related. As many as 27% respondents reported having at least one incident with water in the last decade. For the last incident that was recorded in their institution, 33% of them stated it was an earthquake. This mostly refers to the earthquake that struck Zagreb on March 22, 2020. It is not surprising, since 39% of the libraries represented in this research are located in Zagreb. What is sad is the fact that in October 2020, 13 out of 58 libraries in Zagreb still had not repaired the damage caused by the earthquake (22.4%).

Only 1% of the libraries has had help from other institutions in recovering from a crisis (Chart 11). The avoidance of asking for help from similar institutions certainly weights the sense of solidarity and cooperation in the crisis. Even when libraries did get help in recovering from an incident, it was mostly from official services like the firefighters.

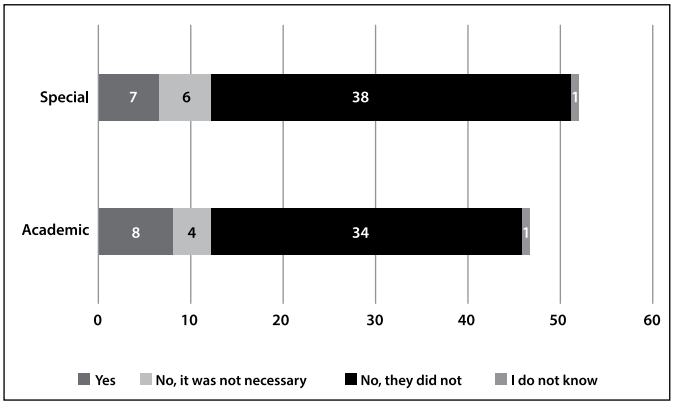

Chart 11. *Help from other institutions in recovering from a crisis*

When asked directly if they had any professional aid from the National and University Library in Zagreb, numbers do not go in its favour: only 9% of the libraries cited asking and receiving help from Croatian Central Coordination Library's Office. This help refers mostly to the advisory function of the Croatian Institute for Librarianship which operates inside the National and University Library in Zagreb. The results of this research show that the cooperation should be encouraged, especially in situations where financial difficulties pose the biggest obstacle in risk management.

3.5. Research conclusions

This research aimed to assess the state of crisis preparedness, management, and the potentials of crisis response in academic and special libraries in Croatia. In answering the main research questions, results have shown that academic and special libraries in Croatia frequently have inadequate infrastructural conditions. They are often situated in old buildings which are not envisaged for library purposes, leaving them vulnerable to most natural disasters. Special libraries especially report having to cram their collections in small and inadequate spaces. The quality of infrastructure varies also considerably. While few have elaborated safety and prevention systems, the majority has insufficient or none.

The most numerous and frequent past experience of these libraries in terms of disasters are incidences related to water and earthquakes, with an extended recovery period. Disaster responses are routinely incoherent and depending only on the sense of personal responsibility of staff members. Interestingly, the academic and special librarians do not report cooperation with similar institutions when struck by disasters. This could be due to the issue of the official power to make legal decisions and their legal status as an organizational unit of the parent institution.

Most academic and special libraries still do not have proper risk management documentation. The number of written emergency plans is below expected, even though preparing plans, risk assessments and recovery procedures are essential for dealing with future disasters.

4. Final remarks

Although an increase in emergency plans and risk assessments in Croatian academic and special libraries since 2013 has been observed, the numbers are still far from the average reported in the IFLA survey. There is still much to be done in preparing Croatian libraries for dealing with the current crises, as well as empowering them to avoid worst-case scenarios in future ones. The lack of guidelines cannot be an excuse anymore: the most prominent international institutions such as UNESCO, IFLA and ALA, all have published practical manuals on how to organize crisis management in heritage institutions. With little adaptation to unique local needs, these could be implemented in every library. Financial excuses can also go only so far: changing the way we think of our heritage, its risk and crisis management and broadening our awareness costs nothing. Only when we change our attitudes regarding heritage that is entrusted to us to safeguard for future generations, can we expect to build the needed competencies and capacities to handle crises. Building resilience is a long-lasting endeavour.

Another devastating earthquake that shook continental Croatia just two months after the completion of this research only emphasised its findings and reminded us once more that disasters can strike at any moment, and that our ill-preparedness brings about irrecoverable loss of our heritage. All the academic and special libraries in Croatia have witnessed at least one crisis situation in the last two decades, some coping with recurring ones, while others have faced multiple and cascading disasters.

Everything goes to show that systematic planning of continuous improvement of library space, infrastructure, and funds is needed, as well as the importance of further lifelong teaching and training of library staff. With planning, preparation and education, it is possible to lessen the damage inflicted by accidents and crisis and better protect the written heritage.

Acknowledgments

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Sažetak

Visokoškolske, znanstvene i specijalne knjižnice u Hrvatskoj i njihova spremnost na krizne situacije: anketno istraživanje

Cilj. Ovo je istraživanje imalo za cilj procijeniti stanje pripravnosti na krizne situacije, način upravljanja rizicima i potencijalne odgovore na krize u visokoškolskim, sveučilišnim te znanstvenim i specijalnim knjižnicama u Hrvatskoj. Većina visokoškolskih i specijalnih knjižnica u Hrvatskoj nije samostalna ustanova: sastavni su dio drugih institucija ili organizacija pa je njihova sloboda u uspostavljanju mjera upravljanja kriznim situacijama ograničena. Te su knjižnice specifične po svojoj organizaciji, korisnicima i zbirkama, a značajan dio njih čuva vrijedne zbirke stare i rijetke knjižnične građe.

Metodologija. Podaci su prikupljeni mrežnom anketom koja je poslana u sve hrvatske visokoškolske, znanstvene i specijalne knjižnice. Anketni upitnik uključivao je pitanja o procjenama rizika, stanju upravljanja krizama, trenutačnom iskustvu i obrazovanju osoblja, kao i o razini pripremljenosti za krizu i o kriznim pojavama. Budući da se značajan postotak hrvatskih visokoškolskih i specijalnih knjižnica nalazi u Zagrebu i njegovoj okolici, naglasak je stavljen na nedavne katastrofe koje su pogodile taj kraj (potresi i poplave u 2020. godini) i način na koji su knjižnice na njih reagirale.

Rezultati. Rezultati su pokazali značajne razlike u opremi, uvjetima i kapacitetima za spremnost na krizne situacije među ispitanim knjižnicama. Pokazali su učestalost kriznih situacija, kao i načine na koje se knjižnice nose s njima.

Originalnost. Istraživanjem se doprinosi razvoju područja zaštite knjižnične građe donoseći nove spoznaje o upravljanju kriznim situacijama u visokoškolskim i specijalnim knjižnicama u Hrvatskoj. Prikupljeni podaci poslužit će kao dobra osnova za planiranje i organiziranje stalnog stručnog usavršavanja i ciljanih akcija u svrhu poboljšanja očuvanja kulturne baštine u opasnosti.

KLJUČNE RIJEČI: baštinske zbirke, odgovor na kriznu situaciju, pripravnost na krizu, specijalne knjižnice, suradnja, visokoškolske knjižnice

Rebuilding libraries in time of overlapping crisis

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Abstract

Purpose. The purpose of this paper is to give an overview of the process of rebuilding the valuable library collection at the Institute of Art History in Zagreb due to the overlapping crises it was impacted by during 2020 (earthquake, epidemic and flood).
Approach/methodology. The overall Library collection needed to be resystematized according to the UDC system from scratch since it completely collapsed due to the massive earthquake in March. This process overlapped with the primary care and conservation procedure for the personal archival paper collection of Grgo Gamulin, art historian and art critic, and the unexpected urgent need of establishing a personal archive and ex libris of our honoured colleague Academician Tonko Maroević.
Findings. As a result, there is now a fully functional Library, an established ex libris of Tonko Maroević and a clean and organized paper collection of Grgo Gamulin.
Originality/value. The subject of this paper gives an opportunity to gain an insight into how to deal with special types of cultural heritage under extraordinary circumstances. These simultaneous processes have sincerely and truly expanded all of our capacities, led us to create new models of collaboration between colleagues, especially with our

valuable students and volunteers, and has had a significant long-term impact on re-thinking our working practices and workforce development.

KEYWORDS: archival collections, crises, earthquake, Institute of Art History, Library, Zagreb

1. Introduction

This paper presents the context of overlapping hazards that marked 2020, within a small institution based in humanities – the Institute of Art History in Zagreb (IAH), which had an urgent and extensive task to rebuild a couple of its most valuable collections. The year of unexpected events sincerely and truly expanded all of our working capacities, forcing us to rethink everyday working practices and has consequently given us a new perspective towards understanding crises as catalysts for collaboration and change.

The Institute of Art History was established in 1961 and is situated at former Workers University "Moša Pijade" (nowadays Public Open University Zagreb), a modernist building which is a protected cultural heritage site of its own. IAH employees are a team of 22 scientists, primarily art historians, and 9 expert professionals (5 architects, a librarian, a photographer, a documentalist and ICT specialist). As a small team of professionals, the Institute's working community is natively relying on the models of interdisciplinarity and teamwork throughout all types of projects that we conduct.

Upcoming young researchers are getting involved as Institute's project members, often starting as volunteers. This practice has in recent years been complemented with a very successful program of student internship developed in collaboration with the Department of Information and Archival Studies at the Faculty of Humanities and Social Sciences at the University of Zagreb.

The co-authors of this paper, Magdalena Blažić and Filip Kartelo became team members through the mentioned student internship program in mid-2020, after which they continued working as volunteers on several programs for many months, and are nowadays working honorary at the Institute, as the aftermath of the extraordinary year we have witnessed.

Up until today the Institute has not adopted any scenarios or plans for evacuation and work in crisis situations (the so-called disaster preparedness plan), but all work activities are based on the recommendations, good practices and experiences of public bodies and institutions, especially from the National and University Library in Zagreb (2011, 2020).

An appropriate and sustainable disaster plan assumes assessing risks and existing response procedures. Various factors should be considered when managing the disaster risk: the vicinity of the buildings, the building structures, security, storage systems, insurance, water and fire protection and suppression. Disaster preparedness plan, relating to risk assessment, includes not only collections prevention and protection, but declaring team members' roles and staff previously undergoing a training (MacIlwaine 2012). As the context in which our Institution did the rebuilding process was marked by overlapping crises – earthquakes, a flood and a global pandemic – developing thorough guidelines for prevention and protection could not have been a priority. More importantly, the professional staff of

the institution consists of one librarian and one documentalist, who do not have the professional help of a conservator/restorer. Even in regular working conditions, this is a great limitation because one of the roles of conservators/restorers, as Dragica Krstić (2015) mentions, involves the implementation of protective measures and activities in extraordinary circumstances/disasters.

2. Timeline

At the beginning of the year, the Institute received a supplement to the paper collection of the personal legacy of the first director Grgo Gamulin, honourable professor, art historian and art critic. It arrived in a compromised condition – full of spores and mould and had to be mechanically cleaned, each piece of paper by hand, before all other phases of technical, archival and intellectual processing. The cleaning of the legacy of Grgo Gamulin, therefore, became part of the traineeship for the academic year of 2020/2021. The majority of the activities were concluded just before the public presentation of overall personal archival legacy, which was given on the occasion of the scientific conference as an *hommage* to the intellectual founder of modern art history and a co-founder of the Institute of Art History in Zagreb, Grgo Gamulin, held in Zagreb in September 2021.

The first national pandemic lockdown began in March 2020, when staff was referred to stay at home, i.e. in remote offices. On Sunday, March 22, 2020, only seven days into quarantine, a devastating earthquake struck Zagreb which caused significant material damage to the residential buildings and cultural heritage, especially to the public institutions buildings that care for the valuable cultural resources of the City of Zagreb and the Republic of Croatia (Figure 1).

The damaged collections at the Institute of Art History needed to be rebuilt on-site, and, in parallel, many documentary resources needed to be prepared, processed and digitized to later be redirected to the teams of specialists who were working on documenting damaged

Figure 1. *Damaged walls of the Institute of Art History after the earthquake of March 22, 2020.* (Photo: Danko Zelić)

sites from the first day, many of them valuable heritage sites throughout the historical centre of the city of Zagreb. Although we worked in unenviable circumstances, the task of all professional associates was to participate and give professional support in the activities and initiatives for the development of the Program of complete restoration of the historic core of Zagreb.

In these newly developed crisis circumstances, we were, therefore, again forced to shift our perspective on the models of daily working routine and task force.

The integrity of the building where the Institute is located, for the most part, remains unimpaired and the building has not suffered any major damage. But the library totally collapsed, as the shelves and cabinets for storing materials were never beforehand statically adequately placed and reinforced (Figure 2). In short, the complete library fund had to be moved, cleaned, repaired, resorted and put back in place (Figure 3). Due to the pandemic

Figure 2. *Damaged Library of the Institute of Art History after the earthquake of March 22, 2020.* (Photo: Danko Zelić)

Figure 3. *Reorganizing the Library of the Institute of Art History after the earthquake of March 22, 2020.* (Photo: Irena Šimić)

conditions, not more than two to four people were allowed to be in the library spaces at a time, which, therefore, affected the continuance of the process.

At the beginning of May 2020, the extensive restoration of the main library collection of around 30,000 books and magazines had to be undertaken. The plan was made on short-term basis, day to day, and the decisions were made by the non-formal crisis team. Very important help was provided by the students, who, after finishing the basic part of their internship program, had the will and interest to assist in arranging the library collection by the UDC system (from scratch). By mid-August, the first major phase of Library renovation was completed (480 meters, about 20,000 volumes). The Library and documentation services for the entire period of crisis management were available to all users, not only researchers and associates of the Institute. Information and instructions on working conditions were publicly available on the website, and the notices were updated every 3 months.

Figure 4. *Sorting the collection of catalogues alphabetically and according to thematic areas* (Photo: Lina Šojat)

Figure 5. *Tonko Maroević study room after resystematization, just a few days before the earthquake of December 29, 2020.* (Photo: Paolo Mofardin)

During the process of library restoration, flooding caused by torrential rains occurred in Zagreb in late July, inflicting damage on a part of the collection stored in the basement storage. This unexpected rain force left the IAH working without electricity for seven days. Just on the day we finished most of the above-mentioned post-earthquake reconstruction, we received extremely sad news that our honourable colleague, academician and emeritus Tonko Maroević unexpectedly passed away on August 11, 2020.

Consequently, and with warm support of his family, we started to create his personal archival collection and Ex Libris (Figure 4), again on the site of his main study room that he had used for three decades. This process started in mid-September and was finished just before the second big earthquake on December 29, 2020, this time with the epicentre in Petrinja (Figure 5).

In the first weeks of 2021, the damage was repaired, this time on a much smaller scale. A couple of hundred books had to be put back on the shelves in the library, and in Tonko Maroević's room, the bookshelves needed to be cleared (50 office boxes) so that the shelves could be properly fixed and strengthened so that the material could be put back according to the UDC system.

The work and processing Ex Libris Tonko Maroević reopened a complex topic of unprocessed and unsystematised collection of authors and group catalogues of exhibitions (approximately 33 m). Since the merit in the formation of this collection to large extent belonged to Tonko Maroević, whose study room was recently arranged as archive and library storage *in situ*, it was decided to unite the same types of publications at the same storage site. In recent years an unstructured collection of exhibition catalogues was stored at the library basement storage, within the range of 23 m (51 office boxes). The transport and relocation processes were done in May 2021. The collection of catalogues was initially formed as an integral part of the Institute Library in 1972. It consists of catalogues obtained as a gift, less often by purchase, or indirectly through personal libraries which form an integral part of personal archival collections of prominent art historians, former employees or associates of the Institute – Grgo Gamulin, Ljubo Karaman, Ana Deanović, Cvito Fisković, Olga Maruševski, etc. The collection of catalogues has approximately 20,000 volumes.

Even though it was not encouraged by a crisis or unexpected event, it is also important to state that, since March 2021, IAH has made a series of construction works at the premises, which began with the reconstruction of one of the Library storage facilities with the aim of expansion and adequate equipment of the photographic studio and the photo lab. But, again on this occasion, a large amount of material from the library storage had to be moved to other working and storage rooms. That is a total of 179 boxes of library material (that has yet to be organized, processed and catalogued) that had to be moved from the basement storage and relocated in third- and fourth-floor rooms. This demanding and physically extremely challenging work again lasted for several months and ended around October 1, 2021.

3. Results

In various challenging circumstances during 2020, ten student volunteers or internship students participated in the IAH task force related to work in the library, archives and information-documentation processes. This was somewhat a win for both sides because most of the student internships in public institutions in Zagreb were cancelled or prolonged due to the damage to their buildings caused by the mentioned massive earthquakes.

The library collection that needed to be rebuilt presented in length meters is as follows: main Library fund 480 meters; serials 80 meters; Ex Libris Tonko Maroević 24 m, exhibition catalogues 56 m; 80 boxes of library donations being moved from the basement storage to the storage premises on higher floors.

Additionally, in the first months of 2021, three more students joined us as volunteers, as our priority task was to resystematize and digitize parts of a personal archival collection, which includes valuable photographic, spatial and architectural documentary sources referring to the many examples of sacral and profane architectural heritage affected by the earthquake that struck the city of Petrinja and the surrounding region.

None of the participants in this process, neither the mentors nor the students, were prepared for the events of the previous year and were facing a series of new and unknown situations. This made an extraordinary learning experience for all the contributors. The methods and perspectives that were a cumulative result of collaboration will be inspiring and helpful in any future endeavours. And this goes beyond the workplace: the collaboration was transformative on both personal and professional levels. The students were truly given an extraordinary opportunity to learn how to deal with special types of cultural heritage and did so in extraordinary circumstances. Especially since they felt like no amount of theory could replace actual practice. And preservation in that sense is not enough; it has to encourage growth and evolution. And what better tool can we ask for but a simple act of human kindness, from which new ideas emerge and evolve – a simple act of solidarity. Solidarity which can transform the everyday workplace into something much greater than the sum of its parts. There is a silver lining to every crisis – the fact that we, as people and as communities, grow stronger and more resilient when we act together in times of need. The importance of teamwork and community assistance was also shown in various rescue operations of cultural heritage in Vukovar-Srijem County after the floods that occurred in May 2014, as described by Juzbašić (2014).

4. Conclusion

Aside from our experience, which we consider an example of good practice, we are at the point of analysing what further formal steps are needed to be taken to avoid a whole range of *ad hoc* decisions made during crisis situations. Libraries are obliged to prepare a disaster plan according to the national "Act on Libraries and Library Activity"[1] and related regulations on the protection of library materials and on the management of documentary mate-

[1] *Zakon o knjižnicama i knjižničnoj djelatnosti*, [Act on Libraries and Library Activity], *Narodne novine* 17/2019, 28/2019.

rial outside the Archives.[2]

It should be emphasized that the development and conceptualization of the plan is a very extensive and demanding process and it certainly should not be expected of librarians and related professionals to write guidelines without extensive support from the professional community and specialized risk assessment experts.

Although customer services are today normalized, and the "only" crisis that we work within is the one of the global pandemic and related economic crisis, we in Zagreb and the surrounding region still experience frequent earthquakes, which remind us of the possible consequences that an earthquake can cause. The question of our preparedness for new hazards is still topical. Concerning our worries and responsibilities, a new intense earthquake will show us if we have done any significant change – whether the shelves will be strong enough and whether the books will stay in place.

The consequences of earthquake and pandemic trauma on human health should certainly be mentioned. Such circumstances in particular imply the months-long overload of heavy physical work, one that is neither suitable nor common for professions such as librarians, art historians, or future information professionals (i.e. students in humanities).

The past period has been challenging, stressful and uncertain. However, it is possible to conclude that, in addition to raising awareness of several problems, faults and limitations in times of overlapping crises, the existing values for the community were confirmed and adopted in professional and personal terms: solidarity, crisis management, knowledge transfer, inclusion, democratic decision-making, readiness for collaboration and teamwork. Even though our work is still in the context of continuous crises, we witness that we have undergone a positive transformation as a community, and have rebuilt our team workforce with new competencies, skills and shared knowledge, and that the lessons we learn along the way stay with us even after the crises subside.

[2] *Pravilnik o zaštiti knjižnične građe* [Regulations on library material protection], *Narodne novine* 52/2005; *Pravilnik o upravljanju dokumentarnim gradivom izvan arhiva* [Regulations on records management held outside archives], *Narodne novine* 98/2019.

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Sažetak

Ponovna uspostava knjižnica u vremenima višestrukih kriza

Cilj. U ovome se radu daje pregled procesa obnove vrijedne knjižnične zbirke Instituta za povijest umjetnosti u Zagrebu uslijed preklapajućih kriza koje su obilježile 2020. godinu (potres, pandemija, poplava).
Pristup/metodologija. Cjelokupni fond Knjižnice trebalo je ispočetka sistematizirati prema UDK sustavu jer se u potpunosti urušio zbog snažnog potresa u ožujku. Taj se proces preklapao s postupkom primarne zaštite i konzervacije zbirke rukopisne građe osobnog arhivskog fonda Grge Gamulina, povjesničara umjetnosti i likovnog kritičara, te iznenadnom i hitnom potrebom osnivanja osobnog arhiva i *ex libris* zbirke akademika Tonka Maroevića.
Rezultati. Rezultat su tih simultanih procesa potpuno funkcionalan i resistematiziran knjižnični fond, uspostavljen arhiv i *ex libris* zbirka Tonka Maroevića te očišćena i organizirana zbirka rukopisnog gradiva Grge Gamulina.
Originalnost/vrijednost. Ovaj rad daje pregled aktivnosti i procesa pri postupanju s posebnim vrstama kulturne baštine u neočekivanim i izvanrednim okolnostima. Ti istovremeni procesi proširili su sve naše kapacitete te rezultirali stvaranjem novih modela suradnje među kolegama, posebice sa studentima i volonterima, te su dugoročno značajno utjecali na promišljanje i razvoj radnih procesa i snaga.

KLJUČNE RIJEČI: arhivske zbirke, Institut za povijest umjetnosti, knjižnica, krize, potres, Zagreb

Volunteering in the sector of culture after disasters

The European Solidarity Corps and their activities with emphasis on the protection of the Basilica of Saint Benedict in Norcia after the 2016 earthquakes

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Abstract

Purpose. The aim of this paper is to present one of the ways to protect and preserve cultural heritage in post-crisis situations. The paper presents the initiative of the European Solidarity Corps and its volunteer activities in Norcia with an emphasis on interventions and actions of fixing and preventing further deterioration of the Basilica of St. Benedict in Norcia after the 2016 earthquake.
Approach/methodology. Research on the activities of the European Solidarity Corps initiative and its volunteer activities in Norcia was conducted by analysing archival material and literature. The paper refers to official documents of the Ministry of Culture in Italy, the European Commission and recent Italian papers on the subject.
Findings. The first part of the paper presents the basic information and goals of the European Solidarity Corps initiative. The second part of the paper presents the state of the Basilica of St. Benedict in Norcia before the 2016 earthquake and the state of the Basilica during the earthquake. The main part of the paper presents the volunteer activities carried out by the European Solidarity Corps in ruined Norcia. The paper presents the work of student volunteers within the framework of the activities of the European Solidarity Corps at the Basilica of St. Benedict in Norcia. The fourth part of the paper points to the existence of an initiative in Croatia called *Europske Snage Solidarnosti*, which invites young professionals to participate in volunteer activities.
Originality/value. The paper provides information about the existence of the European Solidarity Corps initiative. The successfully used EU funds for the post-earthquake recon-

struction of the Basilica of St. Benedict in Norcia are pointed out. Information on the existence of the European Solidarity Corps and their potential use in similar situations in Croatia is important. The paper can inform and encourage readers to join the European Solidarity Corps and participate in their volunteer projects, or to volunteer for another organization or institution.

KEYWORDS: earthquakes, European Solidarity Corps, protection, Saint Benedict in Norcia, volunteering

1. An introduction: European Solidarity Corps

On 7 December 2016, the European Union launched the European Solidarity Corps (Figure 1) initiative, which started in June 2017.

Figure 1. *Young people from the European Solidarity Corps* (Source: European Commission. September 21, 2017. https://europeancommission.medium.com/european-solidarity-corps-when-a-vision-becomes-reality-b1f74ee2a354)

The underlying concept of the initiative is the solidarity of young people (members of member states) and their participation in solidarity activities[1] (such as restoration of cultural heritage sites damaged by natural disasters, educational activities in refugee camps and similar) and projects which contribute to solving social and other problems; therefore, it enables the inclusion of young people in the labour market and (democratic) society (European Commission 2021, 7-8). As stated in the document of the European Commission, the European Solidarity Corps "aims to promote social inclusion, tolerance, human rights and the value of differences and diversity of all kinds and to provide all young people equal ac-

[1] Solidarity activities are activities which promote solidarity of young people (such as restoration of cultural heritage sites damaged by natural disasters, care for endangered species, educational activities in refugee camps and so on).

cess to opportunities offered under its actions" (European Commission 2021, 7). It is important to point out that, until 2018, the European Solidarity Corps were known by the name *European Voluntary Service* (European Voluntary Service, n. d.).

Young people (European Commission 2021, 11 - 44) can participate in volunteering activities - individual (2 or 12 months) or group (2 weeks or 2 months, 10 – 40 young people), traineeships (2 or 6 months) and jobs (3 or 12 months), and solidarity projects – 5 young people (2 to 12 months).

Volunteering is a full-time unpaid activity which is "undertaken through participating organisations that offer young people the opportunity to carry out a wide variety of activities, in a structured way" (European Commission 2021, 9). Volunteering activities and actions by the European Solidarity Corps are based on moral principles especially solidarity between the participants in the initiative (European Commission 2021, 9).

Young people can participate in the European Solidarity Corps by registering on the European Solidarity Corps Portal (European Commission 2021, 72). For a successful registration to the European Solidarity Corps Portal, the participants must have reached 18 years of age and must not be older than 30 at the start date of the activity (European Commission 2021, 15).

Organisations have an important role in volunteering activities and other European Solidarity projects. That is possible only if "organisations participating in European Solidarity Corps projects are established in a programme country or a partner country" (European Commission 2021, 15).

1.1. The implementation of the European Solidarity Corps

The European Commission is responsible for the implementation of the European Solidarity Corps. It is responsible for the budget, aims, solidarity projects and evaluation of the initiative (European Commission 2021). According to a document from the European Commission "the European Commission's Education and Culture Executive Agency is responsible for the implementation of the centralised Actions of the European Solidarity Corps" (European Commission 2021, 13). Because of that, in each country there are National Agencies which enable communication between the European Commission and the participating organisations at local, regional and national level (European Commission 2021, 13).

The Resource Centres, SALTO – YOUTH Resource Centres, the European Solidarity Corps Resource Centre and the Eurodesk Network are also involved in the implementation of the European Solidarity Corps activities (European Commission 2021, 14).

The Resource Centres are responsible for supporting the quality and measures, mentioned in the legal basis establishing the European Solidarity Corps, and development, implementation and quality of Actions under the European Solidarity Corps (European Commission 2021, 14). The Erasmus programme supports SALTO – YOUTH Resource Centres which are liable for the improvement of the quality of projects.

The European Solidarity Corps Resource Centre improves the quality of implementation of solidarity activities and actions (European Commission 2021, 14). The Eurodesk network gives information in the fields of education, training and the involvement of young people in European activities, to young people and those who work with them (European Commission 2021, 14).

2. The Church of Saint Benedict in Norcia before the 2016 earthquakes damage

The basilica (Figure 2) is a single-nave building built in the shape of a Latin cross between 1290 and 1338 on a pre-existing crypt (Fugnoli, Monti and Sorcini 2017). The basilica is the result of different phases of construction (Fugnoli *et al.* 2017), which is why its restoration is a challenge for many restorers and conservators (Ministry of Culture in Italy 2022). The façade is supported by two rows of pilasters. The façade was once decorated with multi-coloured marble (Dari 2020) characteristic of sacral architecture in the Umbrian region.

Figure 2. *Basilica of Saint Benedict in Norcia before the earthquake in 2016* (Source: "Norcia (PG) Basilica di San Benedetto." https://uss-sisma2016.beniculturali.it/interventi-sul-territorio/umbria/basilica-san-benedetto-norcia/ Author: Ministry of Culture in Italy)

The different phases of construction include (Ministry of Culture in Italy 2022): a Gothic portal on pillars and a lunette with a sculpture of the Virgin with a child between two angels and plant motifs on a frieze, sculptures of tetramorphs (symbols of the four evangelists) and rosettes from the 14th century, sculptures of St. Benedict and St. Scholasticus from 1578 and niches, in which the statues are housed, and which date from the 19th century (Figure 3).

The side portal and the base of the bell tower date from the 14th century, while the porch (Figure 4) with six semicircular arches (*Portico delle Misure*) dates back to 1570 (Ministry of Culture in Italy 2022).

The bell tower was built through the 14th and 15th centuries in the Gothic style. The bell tower suffered numerous damages of its upper parts in 1557 and during frequent earthquakes in the 18th century (Giacometti 2019). The bell tower was reconstructed on a smaller scale (Giacometti 2019). After the earthquake in 1859, the stability of the porch was endangered, so it was discussed that it should be demolished and reconstructed with the help of the preserved bases and the capitals of the pillars. After the earthquake of 1859, the façade underwent restoration intervention in the upper part. In the middle of the 20th century, the roof of the porch, the cross vaults and the wooden structure, about which not much is

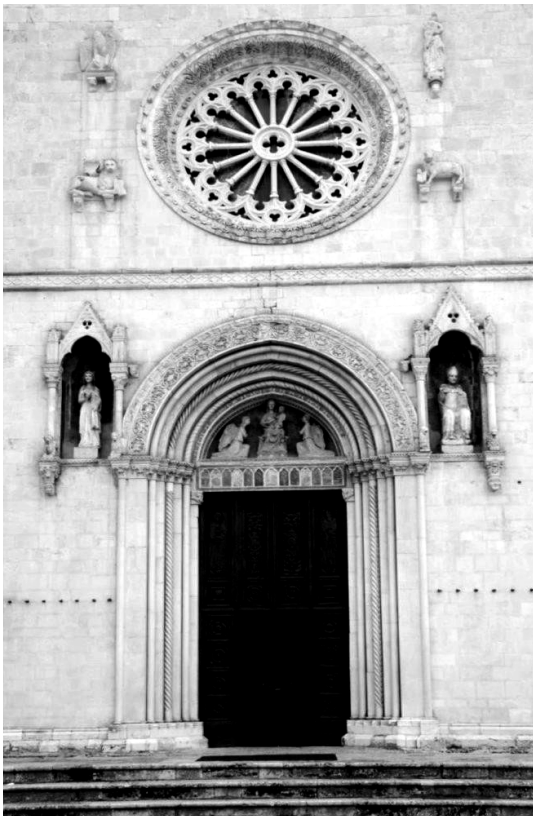

Figure 3. *The façade of the Basilica in Norcia: gothic rosette, Virgin with child in the lunette, sculptures of St. Benedict and St. Scholasticus* (Source: „Norcia (PG) Basilica di San Benedetto." https://uss-sisma2016.beniculturali.it/interventi-sul-territorio/umbria/basilica-san-benedetto-norcia/ Author: Ministry of Culture in Italy)

Figure 4. *Portico delle Misure* (Source: „Norcia (PG) Basilica di San Benedetto." https://uss-sisma2016.beniculturali.it/interventi-sul-territorio/umbria/basilica-san-benedetto-norcia/ Author: Ministry of Culture in Italy)

known even today, were demolished (Ministry of Culture in Italy 2022).
The renovation of the basilica in the 1950s was especially focused on the solution of the roof over the nave of the basilica, so the renovation pointed to the original structural element of the nave – the triumphal arch (Ministry of Culture in Italy 2022). In the restoration from the 20th century, the basilica gets a gabled wooden roof.

2.1. The earthquakes in the City of Norcia

Norcia is placed in the central Italian region of Umbria. It was part of the Ancient Roman Empire. Furthermore, Saint Scholastica and Saint Benedict were born in Norcia. The city of Norcia was affected (Trifan, Gocima and Ochinciuc 2019, 386-388) three times by earthquakes on August 24 and October 30, 2016.
A 6.6 magnitude earthquake, which occurred on October 30th, 2016, significantly destroyed the basilica in Norcia dedicated to the patron saint of Europe and the founder of the Benedictine order – Saint Benedict (Ministry of the Culture in Italy 2022).

2.2. The Church of Saint Benedict in Norcia during the earthquakes

After the earthquake on October 30, 2016, a large part of the church was destroyed (Figure 5). Part of the presbytery (sanctuary) was also destroyed during the collapse of the bell tower. The peripheral walls, the nave and the roof of the basilica were demolished (Giacometti 2019). The earthquake caused the destruction of the wooden roof, the vaults, transept. There was a deformation of the triumphal arch. The North side of the basilica was damaged only in the upper part, due to the presence of monastic structures on that side of the basilica. The longitudinal walls of the church were damaged (Ministry of Culture in Italy 2022).
The most damaged is the wall on the South side of the Basilica (Figure 6) along with the porch (*Portico delle Misure* or *Loggia dei Mercanti*). One vault of the porch has been preserved.

Figure 5. *Basilica of Saint Benedict in Norcia – after the earthquake*
(Source: https://pxhere.com/en/photo/1216016)

Figure 6. *South wall and the facade of the Basilica in Norcia – after the earthquake in 2016. https://uss-sisma2016.beniculturali.it/interventi-sul-territorio/umbria/basilica-san-benedetto-norcia/* (Author: Ministry of Culture in Italy)

The facade and apse of the church have been preserved (Giacometti 2019; Dari 2020). The historic building situated in the square of the same name has undergone various changes caused by earthquakes but never ceased to be a major point for the Benedictine community in Europe and the world and at the same time the main centre of city life, with its *Portico delle Misure* or *Loggia dei Mercanti* which served as a market (Dari 2020). Everyday life of the local people was disabled due to damage to the Basilica. Locals had to live in temporary and little houses (40, 60 or 80 metres) and they got through a difficult period during the reconstruction of the Basilica of San Benedict (Palamara 2021). The Monks of Norcia and local Christians could not preach. The project *European Youth for Norcia* provided assistance and support to the local residents, enabled the return to everyday traditional activities and the protection of historical cultural heritage in Norcia.

3. European Solidarity Corps and their activities in Norcia

3.1. The protection of the basilica in Norcia

The project *European Youth for Norcia* involved 16 young volunteers from Austria, the Czech Republic, France, Hungary, Portugal, Estonia, Greece and Spain (European Solidarity Corps 2017). The protection of the Basilica was overseen by the former director of the Vatican Museums Antonio Paolucci (Pentin 2018; Miliani 2018), Tibor Navracsics (Commissioner for Education, Culture, Youth and Sport) and Italian organisation Kora.[2] Nicola Alemanno (Mayor of Norcia) Giuseppina Perla (Norcia city Counselor for Culture and Tourism), Paolo Iannelli (Special Superintendent for Cultural Heritage) were also responsible for the protection of the Basilica in Norcia (Palamara 2021).

[2] Kora is organisation funded in 2015 in Umbria. Kora organises volunteering projects which promote social inclusion amoung young people and sustainable ways of living.

Some of the volunteers were on the project for one month from July to August 2017, while some spent there two months from July to September 2019. Some of the volunteers who were included in the project and activities are: Alexandra Marie Mihhailova (Estonia), Rodrigo Freitas (Portugal), Canelle Kraft (France), Ioannis Stamatelos (Greece), Ana (Greece), Eduardo (Portugal), Natalia Dulba and others (Europska Unija, n. d.; European Solidarity Corps 2017; Dulba 2019; European Commission 2017). Young volunteers were involved in the activities such as: reconstructing the earthquake hit region, reconstructing cultural heritage (Basilica of Saint Benedict in Norcia), rebuilding social life, and helping children, the elderly and the disabled of Norcia (European Solidarity Corps 2017). Reconstructing the earthquake hit region means that the volunteers were actually mainly supporting the civil protection in rebuilding monuments, organizing acitivities for children and multicultural events with the local population. Regarding the Basilica, they supported the fire fighters and the civil protection collecting the garbage and sorting stones. The volunteers were responsible for interventions and actions of fixing and preventing further deterioration of the Basilica of St. Benedict in Norcia after the 2016 earthquake (removing earthquake ruins, listing and marking original church fragments).

3.2. The restoration of the basilica in Norcia

Despite bureaucratic disagreements between the then Archbishop Boccard who advocated the restoration of the Basilica in a modern architectural style and the local population who wanted to restore the Basilica to its original appearance, the Basilica was restored, by incorporating modern aspects and techniques into the original structure in order to make the Basilica more resilient to earthquakes which are frequent in Italy (Pentin 2018).

The restauration of the Basilica of Saint Benedict in Norcia, after the earthquake of 2016, took place in two different phases. The volunteers participated in the second phase of reconstruction. The first phase of reconstruction began in November 2016 and lasted until May 2017 (Ministry of Culture in Italy 2022). The goal of the first phase of the reconstruction was to protect the stable or undamaged parts of the complex (Ministry of Culture in Italy 2022). Efforts were made to partially open public spaces located near the church, and, to make this possible, it was necessary to remove the ruins (Ministry of Culture in Italy 2022).

During the first phase of the renovation, conservation and restoration works were carried out related to: a) stabilization of the front and back of the facade by making scaffolding to prevent overturning outwards and inwards, b) fixing the upper part of the bell tower with hoops and the lower part of the bell tower with wooden brackets, c) fixing other parts of the portal with the help of hinged pipe system and steel hoop, d) securing the apse and the transept with the help of hinged pipe system and pulling the rope through the openings, e) conservation of the left transept, and f) consolidation of walls using hydraulic mortar or lime mortar (Ministry of Culture in Italy 2022).

The second phase of the reconstruction was accelerated because in the meantime, in 2018, another earthquake took place, which caused additional damage to the rosette on the facade. This phase of restoration was completed in January 2019 (Ministry of Culture in Italy 2022). Conservation and restoration works carried out and realized in the second phase of the reconstruction of the Basilica were: a) removal of the remains of the ruins inside

the church starting from the ruins located near the facade, b) construction of a scaffold to support the protruding rosette, c) realization of two internal metal ribs for temporary protection of the portal, outer rib to support the wooden scaffolding lunette portal, d) securing and protection of stained glass, velinatura, disassembly, cataloging (general categorization, *in situ* inventory) and placement of stained glass parts in special OSB boxes created ad hoc, and, e) protection of parts of frescoes found after the removal of the remains of the ruins of the Basilica (Ministry of Culture in Italy 2022).

3.3. Educational and cultural workshops for children and the elderly of Norcia

Young volunteers from the European Solidarity Corps organised educational and cultural workshops for children and the elderly of Norcia (Dulba 2019). They organised English classes, in two groups, for children and teenagers (Figure 7, Figure 8), twice a week (Dulba 2019). Natalia Dulba (2019), project volunteer, claims:

> "Mostly we spent time with children in kindergarten, played with them and had English classes. We also helped with all the activities in town, mostly helping with the organisation (each evening there was like a concert, or comedy stand or small food festival on the main road). We also spent time with people with disabilities from Norcia, helping them with daily activities and playing with them, too. We were part of the Hempiness Festival, helping with the organization, decorations etc. "

Figure 7. *Education workshop with children and teenagers* (Source: https://associazionekora.it/2019/07/30/european-solidarity-corps-in-norcia/)

Classes took place through play (Dulba 2019). The elderly and the disabled (Figure 9) of the city of Norcia were enjoying card games (Dulba 2019).

Locals could participate in other interesting social and cultural events (Figure 10), as volunteer Natalia Dulba points out, "karaoke night, music/sustainability Hempiness Festival or playing in the Monello summer club" (Dulba 2019). Sixteen volunteers acquired new skills (communication with people, foreign language) and moral values (to make friends, to help someone), gain experience at work with children, adults and disabled people, practical conservation skills and similar.

One of the volunteers, Ana, claims that "part of their job was to help with the reconstruction of the Basilica of St. Benedict and other activities - going to the kindergarten and hav-

Figure 8. *English class through play* (Source: Natalia Dulba; reprint with the permission of the author)

Figure 9. *Card game with the elderly* (Source: https://associazionekora.it/2019/07/30/european-solidarity-corps-in-norcia/)

Figure 10. *Volunteers helping with organisation: concert, food festival or comedy stand* (Source: Natalia Dulba; reprint with the permission of the author)

ing different kinds of activities with the local children" (European Commission 2017). They also constructed a round shaped dome made out of wood decorated with flags and painted together with the children (European Commission 2017).

4. European Solidarity Corps in Croatia

European Solidarity Corps also exist in Croatia and are known as *Europske Snage Solidarnosti*. They open the competitions and invite young experts (up to 30 years) and organisations to participate in various volunteer activities and projects in Croatia[3].

A 6.2-magnitude earthquake occurred in Petrinja (city in Croatia) on December 29, 2020 (Ministarstvo unutarnjih poslova Republike Hrvatske 2020). The earthquake was also felt in other Croatian cities - Sisak, Glina, Zagreb etc. Due to the magnitude of the earthquake, mechanical and severe destruction of the cultural heritage of that area (Banovina) occurred. Thus, the Hegedušić Gallery in Petrinja, the Sisak Cathedral and many other parish churches were destroyed (Dnevnik.hr 2020). European Solidarity Corps in Croatia needs to be involved in projects for the protection and restoration of damaged cultural heritage in earthquakes in Croatia.

[3] Young people need to log in to the site, create own user name and account and fill in the profile with own interests and available skills. Then he or she will get an email from the site about the projects that he, she or they can be part of. Young people do not even have to look for projects.

5. Conclusion

Among young people, many have a desire to participate in volunteer activities and projects. A lot of students and young people are not informed and do not know about the various volunteer initiatives or organizations. One such model of volunteering on EU level is the European Solidarity Corps, which is presented in the paper so that the general public is informed about its existence and operation. Thanks to EU funds and the European Commission, European Solidarity Corps is able to carry out volunteer activities (participation in the reconstruction of St. Benedict's Basilica, educational and social workshops for the local people) in Norcia, an area affected by numerous earthquakes in 2016. That year the European Solidarity Corps was founded, so their first project was in ruined Norcia. Sixteen young volunteers from different EU member states are also responsible for these volunteer activities. Volunteer actions and projects carried out by the European Solidarity Corps enable young volunteers to get to know another culture and language, make new friends, help people in need, appreciate and protect cultural and historical monuments and so on. This possibility and this experience can be applied also in Croatia (Zagreb, Petrinja, Glina), which was recently hit by earthquakes. The European Solidarity Corps in Croatia or *Europske Snage Solidarnosti* has conducted numerous various volunteer projects and activities in Croatia. It is necessary to educate young people on how to use EU funds, how to participate in a volunteer program or how to organize an activity or project, through panel talks or educational lectures. Better cooperation between the European Solidarity Corps and other public cultural institutions in Croatia should be encouraged in order to apply the same mechanism as in Norcia.

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Sažetak

Europske snage solidarnosti i njihove aktivnosti s naglaskom na zaštitu bazilike svetog Benedikta u Nursiji poslije potresa 2016. godine

Cilj. Cilj rada jest predstaviti jedan od načina kako zaštititi i očuvati kulturno dobro u postkriznim situacijama. U radu se predstavlja inicijativa Europske snage solidarnosti i njezine volonterske aktivnosti u Nursiji pri obnovi bazilike svetog Benedikta u Nursiji nakon potresa 2016. godine.

Pristup/Metodologija. Istraživanje o djelovanju inicijative Europske snage solidarnosti i njezinim volonterskim aktivnostima u Nursiji provedeno je analizom arhivskog gradiva i literature. Rad se referira na službene dokumente Ministarstva kulture u Italiji, Europske komisije i recentne talijanske radove o temi.

Rezultati. U prvom dijelu rada donose se temeljne informacije i ciljevi inicijative Europske snage solidarnosti. Drugi dio rada predstavlja stanje bazilike svetog Benedikta u Nursiji prije potresa i tijekom potresa, koji su se dogodili 2016. godine. U glavnom dijelu rada predstavljene su volonterske aktivnosti, provedene od strane Europskih snaga solidarnosti, u razrušenoj Nursiji. Rad donosi prikaz rada volontera studenata u sklopu djelovanja Europskih snaga solidarnosti na bazilici svetog Benedikta u Nursiji. Četvrti dio rada ukazuje na postojanje inicijative u Hrvatskoj pod nazivom *Europske snage solidarnosti*, koja mlade stručnjake poziva na sudjelovanje u volonterskim aktivnostima.

Originalnost/vrijednost. Radom se donosi informacija o postojanju inicijative Europske snage solidarnosti. Ukazuje se na uspješno iskorištena EU sredstva na postpotresnoj obnovi bazilike svetog Benedikta u Nursiji. Važna je informacija o postojanju Europskih snaga solidarnosti i njihova potencijalna primjena u sličnim situacijama i u Hrvatskoj. Rad može informirati i potaknuti čitatelje da se pridruže Europskim snagama solidarnosti i sudjeluju u njihovim volonterskim projektima, odnosno da volontiraju za neku drugu organizaciju ili instituciju.

KLJUČNE RIJEČI: Europske snage solidarnosti, potresi, Sveti Benedikt u Nursiji, volontiranje, zaštita