Protection of Immovable Cultural Heritage Properties in Terms of Climate Change

Legal and Strategic Framework of Adaptation

Tamara Gajinov & Zoltan Vig

This monograph gives a comprehensive overview of international and Serbian activities and measures that promote the importance of safeguarding cultural heritage and their horizontal integration with the areas of environmental protection, spatial planning and risk management issues in emergency situations. An inter-sectoral approach creates conditions for more expedient actions, but also makes the basis for the creation of public policies and adequate legislation in this area. A critical review of the current legal and strategic framework provides policymakers guidance for reducing harmful climate impacts on the state of cultural monuments in the world and in Serbia. Such aspirations are achievable through the promotion of international cooperation, strengthening of institutional capacity, creation of adequate study programmes and supporting scientific and technological innovations.

All in all, future policies of adaptation should give more space to the protection of cultural property. Thus their quality and capacity will be improved, in order to preserve important social values in terms of contemporary challenges and increasingly frequent extreme weather conditions.

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Foreword

The monograph titled *Protection of Immovable Cultural Heritage Properties in Terms of Climate Change – Legal and Strategic Framework of Adaptation* is the result of a research conducted at the Faculty of Law of the University of Szeged within a programme of academic mobility (Civil Society Scholar Awards – CSSA for the years 2016/2017) supported by the Open Society Foundation. The conducted study indicates the complexity and topicality of the questions of protecting immovable cultural heritage in terms of climate change, still insufficiently recognised in legal and strategic documents adopted at national, supranational and international levels. Hence, the authors' aim was to draw the attention of the general public to the importance of this issue, placing it in the context of current policies on adaptation and basic principles of sustainable development. This is the reason that the book contains the Serbian version of the original English work.

The monograph gives a comprehensive overview of international and Serbian activities and measures that promote the importance of safeguarding cultural heritage and their horizontal integration with the areas of environmental protection, spatial planning and risk management issues in emergency situations. An inter-sectoral approach creates conditions for more expedient actions, but also makes the basis for the creation of public policies and adequate legislation in this area. A critical review of the current legal and strategic framework provides policymakers guidance for reducing harmful climate impacts on the state of cultural monuments in the world and in Serbia. Such aspirations are achievable through the promotion of international cooperation, strengthening of institutional capacity, creation of adequate study programmes and supporting scientific and technological innovations.

All in all, future policies of adaptation should give more space to the protection of cultural property. Thus their quality and capacity will be improved, in order to preserve important social values in terms of contemporary challenges and increasingly frequent extreme weather conditions.

Tamara Gajinov & Zoltan Vig

Contributors

Authors:
Dr. Tamara Gajinov: Educons University, Faculty of European Legal and Political Studies
Dr. Zoltan Vig: University of Szeged, Faculty of Law, Metropolitan University, Faculty of Economics, Finance and Administration

Reviewed by:
Dr. Stefan Messmann, Central European University, Faculty of Law
Dr. Zoran Čajka, Metropolitan University, Faculty of Economics, Finance and Administration
Dr. Nagy Csongor István, University of Szeged, Faculty of Law
Dr. Ljubica Đorđević Vidojković, Educons University, Faculty of European Legal and Political Studies

Proofreading by:
Mark Griffith.

Foreword v
Contributors vi
Contents vii

PART I **Protection of Immovable Cultural Heritage Properties in Terms of Climate Change. Legal and Strategic Framework of Adaptation**

CHAPTER 1 **Introductory Remarks**
1 Introductory remarks 5

CHAPTER 2 **Definition, Classification and Categorisation of Cultural Properties**
1 Monument, cultural property, cultural heritage, cultural heritage of mankind 9
2 Categorisation of cultural property 14
3 Classification of cultural property 17
3.1 Immovable cultural property 19
3.1.1 Cultural monuments 19
3.1.2 Spatial cultural-historic units 20
3.1.3 Archaeological sites 20
3.1.4 Landmarks 21

CHAPTER 3 **Climate-Change Impact on the Protection of Immovable Cultural Property**
1 The new climatic conditions and the most important consequences of climate change 25
2 International and regional regulatory framework of adaptation to climate change 26
3 The impact of climate conditions and immovable cultural property 29
3.1 The impact of emissions and acid rain 30
3.2 The impact of floods 32
3.3 Landslides and erosion 35
3.4 Earthquakes and volcanic eruptions 36
3.5 Sea level rise 38
3.6 Extreme storms 39

CHAPTER 4 **Legal and Strategic Framework of Adoption and Courses of Action in Order to Protect Cultural Heritage from the Consequences of Climate Change**
1 Facing the importance of the issue of protecting cultural heritage in terms of climate change at global level 43
2 Risk management of cultural heritage 44

3 Important international programmes and activities in the field of protecting cultural heritage from the consequences of climate change 45
4 The legal framework of actions at EU level 47
5 Important European projects and activities 51
6 The priorities of the European Union 53
7 Legal and strategic framework of protecting cultural heritage from the consequences of climate change in Serbia 54

CHAPTER 5 **The Future of Protecting Cultural Heritage and Urban Areas in Terms of Climate Change**
1 Challenges of protecting cultural heritage in terms of climate change 61
2 Climate change and a new concept of architecture in urban areas 62
3 The future of spatial development, natural disaster management and sustainable use of cultural heritage in Serbia 63

PART II **Zaštita nepokretnih kulturnih dobara u uslovima klimatskih promena. pravni i strateški okviri prilagođavanja**

CHAPTER 1 **Uvodne napomene**

CHAPTER 2 **Pojam, klasifikacija i kategorizacija kulturnih dobara**
1 Spomenik, kulturno dobro, kulturna baština, kulturna baština čovečanstva 77
2 Kategorizacija kulturnih dobara 82
3 Klasifikacija kulturnih dobara 85
3.1 Nepokretna kulturna dobra 86
3.1.1 Spomenik kulture 87
3.1.2 Prostorno-istorijska celina 87
3.1.3 Arheološko nalazište 88
3.1.4 Znamenito mesto 88

CHAPTER 3 **Uticaj klimatskih promena na zaštitu nepokretnih kulturnih dobara**
1 Novonastali klimatski uslovi i najznačajnije posledice klimatskih promena 93
2 Međunarodni i regionalni regulatorni okviri prilagođavanja na klimatske promene 94
3 Klimatski uticaji i nepokretna kulturna dobra 97
3.1 Uticaj emisija štetnih gasova i kiselih kiša 98
3.2 Uticaj poplava 100

3.3 Pojava klizišta i erozije 103
3.4 Zemljotresi i vulkanske erupcije 104
3.5 Porast nivoa mora 105
3.6 Ekstremne oluje 107

CHAPTER 4 **Pravno i strateški okvir prilagođavanja i pravci delovanja sa ciljem zaštite kulturnog nasleđa od posledica klimatskih promena**

1 Suočavanje sa značajem pitanja zaštite kulturnog nasleđa u uslovima klimatskih promena na globalnom nivou 111
2 Menadžment upravljanja rizicima po kulturno nasleđe 112
3 Značajni međunarodni programi i aktivnosti u oblasti zaštite kulturnog nasleđa od posledica klimatskih promena 113
4 Pravni okvir delovanja na nivou Evropske unije 115
5 Značajni evropski projekti i aktivnosti 119
6 Prioriteti Evropske unije 121
7 Pravni i strateški okviri zaštite kulturnog nasleđa od posledica klimatskih promena u Srbiji 122

CHAPTER 5 **Budućnost zaštite kulturnog nasleđa i urbanih sredina u uslovima klimatskih promena**

1 Izazovi zaštite kulturnog nasleđa u uslovima klimatskih promena 129
2 Klimatske promene i novi koncept arhitekture urbanih sredina 130
3 Budućnost prostornog razvoja, upravljanja elementarnim nepogodama i održivog korišćenje kulturnog nasleđa u Srbiji 131

Appendices

The list of World Cultural properties affected by impacts of climate change 139
Lista kulturnih dobara u svetu koja su ugrožena klimatskim promenama 141
Results of survey launched by the World Heritage Centre on the impacts of climate change on world heritage properties worldwide 143
Rezultati sprovedene ankete u okviru Centra za svetsku baštinu o uticaju klimatskih promena na kulturna dobra širom sveta 144
The table of principal climate change risks and impacts on cultural heritage 145
Tabela glavnih rizika i uticaja koji prete kulturnom nasleđu kao posledica klimatskih promena 147

References 151

PART I

Protection of Immovable Cultural Heritage Properties in Terms of Climate Change

Legal and Strategic Framework of Adaptation

PART I
CHAPTER I

Introductory Remarks

1 Introductory remarks

There is steadily growing interest in the cultural heritage of different nations across the world, crucial to their identity and history.[1] Cultural and artistic objects connect spaces, times, and peoples.[2] They illuminate the social, economic and political lives of different nations at different times. Protection of cultural property belongs together with social and sustainable development. All three of governments, scientific institutions, and individuals have a duty to help protect local and global heritage.[3]

Nowadays, cultural assets are exposed to a range of dangers. Among the gravest are wars and other armed conflicts, plus vandalism by individuals and groups. Sudden urbanisation, industrialisation and overpopulation in certain areas also pose a threat to many monuments and architectural buildings of special socio-historical significance. Natural impacts, such as floods, landslides and earthquakes, are another category of threats.[4] According to some studies as many as 76% of the world's cultural heritage is exposed to some form of natural hazard.[5] Natural disasters seem to be increasing in number due to climate change.

Although generally natural disasters cannot be controlled or avoided, there are certain measures that can reduce the vulnerability of cultural sites. Efficient and effective protection implies good knowledge of the basic characteristics of given cultural sites, as well as assessments of its sensitivity or vulnerabilities to various external influences. Understanding how societies adapt is vital for effective adaptation strategies.[6] The development of science and new technologies allows new ways to effectively intervene with materials and structures.[7] In recent decades, preventative protection has increased in importance. In particular, when talking about the protection of cultural monuments in the context of climate change, in the first place it requires a cleaner natural environment and

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1 Jelena Vilus, *Pravna zaštita kulturnih dobara*, Evropski centar za mir i razvoj Univerziteta za mir Ujedinjenih nacija, Beograd, 2007., p. 6.

2 Snežana V. Antonijević, *Mogućnosti unapređenja zaštite i očuvanja srpske nacionalne baštine prostora Metohije na početku 21. veka*, Doctoral thesis defended at the Faculty of Security, University of Belgrade in 2013, p. 4.

3 *Ibid*.

4 Svetlana Dimitrijević Marković, Milica Grozdanić, *Upoznavanje sa strategijom upravljanja rizicima po kulturno nasleđe u slučaju katastrofa, Nasleđe*, no. 12/2011., p. 253.

5 Rohit Jigyasu, *Challenges and Opportunities for Disaster Risk Management of Cultural Heritage against Floods, ICOMOS – Hefte des Deutschen Nationalkomitees*, no. 60/2015., p. 25.

6 Mila Pucar, *Energetski aspekti razvoja naselja i klimatske promene – Stanje, mogućnosti, strategije i zakonska regulativa u Srbiji*, in: *Klimatske promene i izgrađeni prostor: Politika i praksa u Škotskoj i Srbiji*, (ed. Mila Pucar, Branka Dimitrijević, Igor Marić), Institut za arhitekturu i urbanizam Srbije (IAUS), Beograd, 2013., p. 68.

7 Ivo Marojević, *Koncept održivog razvoja u zaštiti kulturne baštine, Socijalna ekologija*, Zagreb, no. 4/2001., p. 235.

reducing harmful anthropogenic factors to a reasonable level, but it also involves a number of other preventative actions to protect cultural and historical sites. Of course, if there is still damage under the influence of natural events, efforts are made to regain the old or original look of cultural-heritage properties, using special techniques of restoration and conservation.

An adequate legal framework is an important instrument for implementing these goals, which must support the process of adaptation to climate change and the basic principles of sustainable development. Legal protection of cultural properties from the effects of climate change is still an under-researched field. In addition, dealing with these issues involves a holistic approach and linking several legal areas, as well as numerous non-legal disciplines.

Definition, Classification and Categorisation of Cultural Properties

1 Monument, cultural property, cultural heritage, cultural heritage of mankind

Today there are no universal and generally accepted conceptual definitions of *cultural property* and *cultural heritage*. That is reflected in the area of law that deals with their protection. Therefore, three approaches can be observed when determining properties subsumed under the concept of cultural heritage. The first involves specifying the general characteristics that a particular property must possess in order to be considered "cultural". The second method involves enumerating certain categories of cultural properties. The third (mixed) one is a combination of the previous two methods. Thus, as a rule, every act of national, supranational or international law contains its own definition of the concepts of *cultural heritage* and *cultural property*, which has been customised to the subject and purpose of the given regulation.[8] At the same time, these definitions are reflections of economic, social and cultural circumstances under which certain legal acts were passed.

In older domestic legal sources, the concepts of *cultural heritage* and *cultural property* can rarely be found, since they reflect recent trends in the protection of *cultural property*. Earlier terms such as *monument (spomenik)* or *cultural monument (spomenik kulture)*[9], were used, as well as *antiquity (starina)*.[10] However, these concepts have still not disappeared completely. In this sense, there is even a special mixed branch of law – *monumental law*, which contains elements of several different branches of law, such as administrative, civil, criminal, international public and international private law.[11]

The concept of *cultural property* was introduced in Serbia by the *Law on the Protection of Cultural Property*of the Socialist Republic of Serbia in 1977.[12] According to this document, the term *cultural property* means real property and other items of special cultural and historical significance.[13] These include cultural monuments, spatial cultural-historical units, archaeological sites, landmarks as immovable cultural goods, as well as works of art and historical objects, archives, film materials, old and rare books as movable cultural properties.[14]

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8 *Ibid*.

9 In the People's Republic of Serbia, there was adopted the *Law on the Protection of Cultural Monuments and Natural Rarities* (*Official Gazette of the People's Republic of Serbia* no. 54/1948) in 1948. For cultural monuments, under this law, were considered movable and immovable objects or collections of objects of historical, archaeological, cultural-historical, artistic, ethnographic or sociological significance.

10 In Serbia, there was passed the *Regulation on the Protection of Antiquities* (*Official Journal* no. 212/1941.) under German occupation during the Second World War.

11 About the origin and the development of monumental law as a separate branch of law see more: Vladimir Brguljan, *Spomeničko pravo*, Republički zavod za zaštitu spomenika kulture, Beograd, 2006. p. 9-17.

12 *Law on the Protection of Cultural Property* (*Official Gazette of the SR of Serbia* no. 28/1977, 34/1981, 47/1987).

13 Article 1, paragraph 1 of the *Law on the Protection of Cultural Property* in the Socialist Republic of Serbia.

14 Article 1, paragraph 2 of the *Law on the Protection of Cultural Property* in the Socialist Republic of Serbia.

The *Law on Cultural Property*[15] in force that was adopted in 1994 defines *cultural property* as objects and products of material and spiritual culture of general interest placed under special protection. Furthermore, this Law lists all kinds of immovable and movable cultural property in the same way as in the *Law on the Protection of Cultural Property* of the Socialist Republic of Serbia. Practically, according to the definition accepted in our *Law on Cultural Property*, a property can be considered as cultural if it can be classified in one type of cultural object by its description, and to possess certain specified properties and characteristics. This means that a mixed approach is adopted based on the *Law on Cultural Property* as the definition of the concept of cultural property. So, with the general characteristics that a property needs to meet, it also has to fit into a specific and legally defined category of cultural property.

At international level, thanks to the *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict* of 1954,[16] adopted under the auspices of the United Nations Educational, Scientific and Cultural Organisation (hereinafter UNESCO), there was introduced the concept of *cultural property*. Since it was made after the Second World War, this Convention aims, above all, to protect material *cultural property* from war. According to the definition given in this document, *cultural property*, irrespective of the origin and owners, include: movable or immovable property, which are of great importance to the cultural heritage of a nation, such as monuments of architecture, art or history, whether religious or secular, archaeological sites, collections of buildings, which are as a whole of historic or artistic interest, works of art, manuscripts, books and other objects of artistic, historical or archaeological significance, as well as scientific collections and important collections of books, archives or reproductions of those goods.[17] Furthermore, according to the provisions of this Convention, *cultural property* (in the case of armed conflicts) also include buildings whose main and effective purpose is to preserve or exhibit the above-mentioned movable cultural property, such as museums, large libraries and depositories of archives, and refuges intended to shelter, in the event of armed conflict, the movable cultural property,[18] as well as centres containing a large amount of cultural property and centres that collect cultural monuments.[19]

Some theorists criticise the use of English term *cultural property*, used in the text of the Convention, considering that its use "over-emphasises the

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[15] *Law on Cultural Property* (*Official Gazette of the Republic of Serbia*, no. 71/94, 52/2011-other law and 99/2011-other law).

[16] *Convention for the Protection of Cultural Property in the Event of Armed Conflict* (in Serbia this Convention was ratified and published in the *Official Journal of the FPRY* no. 4/56).

[17] See article 1, paragraph 1, point a) of the *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict*.

[18] Article 1, paragraph 1, point b) of the*Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict*.

[19] Article 1, paragraph 1, point c) of the *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict*.

commercial value of *cultural property*".[20] This practice gives priority to individual interests of the owner of certain cultural property over the general interest, such as its protection and preservation. In addition, it is considered that the term *cultural property* does not cover all aspects of intangible *cultural heritage*. Therefore, there is the tendency to replace the term *cultural property* with the term *cultural heritage*. In this way, in the opinion of some experts, the fact is highlighted that *cultural heritage* is not a simple property.[21]

In Serbian language the term of *cultural property ("kulturno dobro")* has no such connotation as in English with the term *property*. Throughout the term *cultural property* the wider social interests are being emphasises at the same time, but it does not exclude the right of the owner to use such property. In addition, to the expression of *cultural property* is sufficiently broad and abstract semantically to also include, beside movable and immovable tangible objects, intangible heritage.[22]

The *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict* uses, beside the term of *cultural property*, the term *cultural heritage*. However, it is mentioned only in a few places. Actually, the term *cultural heritage* emerges as a central concept[23] only in the *Convention Concerning the Protection of the World Cultural and Natural Heritage*[24] from 1972. After that, the term appears in other legal acts as well, which are passed under the auspices of UNESCO, such as the *Convention on the Protection of Underwater Cultural Heritage*[25] from 2001, or the *Convention for the Safeguarding of Intangible Cultural Heritage*[26] from 2003.

The concept of *cultural heritage* itself is very broad. It involves the totality of the achievements that our ancestors left behind in the field of literature, art,

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[20] Tripimir M. Šošić, *Pojam kulturne baštine – međunarodnopravni pogled*, *Zbornik radova Pravnog fakulteta u Splitu*, no. 4/2014., p. 836-837. The author is mainly referring to the statements of professors like Lyndel Prott and Patrick O'Keefe (Lyndel V. Prott, Patrick J. O'Keefe, *"Cultural Heritage" or "Cultural Property"?*, *International Journal of Cultural Property*, no. 1 /1992., p. 307-320.).

[21] Lyndel V. Prott, Patrick J. O'Keefe, *op. cit.*, p. 310.

[22] Tripimir M. Šošić, *op. cit.*, p. 838.

[23] According to article 1 of the Convention, cultural heritage involves: *monuments:* architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science; *groups of buildings:* groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; *sites:* works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.

[24] *Convention Concerning the Protection of the World Cultural and Natural Heritage* (in Serbia this Convention was ratified and published in the *Official Journal of the SFRY – International Treaties* no. 56/1974).

[25] *Convention on the Protection of the Underwater Cultural Heritage* (Serbia has not ratified this Convention).

[26] *Convention for the Safeguarding of the Intangible Cultural Heritage* (in Serbia this Convention was ratified and published in the *Official Gazette of the Republic of Serbia – International Treaties* no. 1/2010.).

architecture, music, theatre, film, science, and other areas which together make up the totality of culture.[27] According to some authors, *cultural heritage* is understood even more broadly, as a manifestation of human life and the reflection of a certain perception of life.[28] Generally speaking, the concept of *cultural heritage* represents a dynamic category that is related to particular social circumstances and current awareness of society. Therefore this concept is constantly evolving and changing, where it constantly accretes new meanings and values.[29]

The term *cultural heritage* indicates goods of lasting value that today's society has inherited from previous generations, which includes the obligation to preserve such property for later generations. In addition, the concept of *cultural heritage* refers to the cultural values of tangible and intangible nature that transcend national boundaries and have significance for all humanity. Thus, the concept of *cultural heritage* reflects the fundamental social achievements that constitute an important element of identity of narrower and broader human communities. With the emergence of nation-states, *cultural heritage* has served as an important factor in building national identities.

As already mentioned, the term *cultural heritage* involves not only tangible cultural assets, but also spiritual heritage. By accepting this notion, one supports the need to protect different customs, religious rituals, music, dance, and other forms of spiritual creativity. However, the concept of *intangible cultural heritage*[30] was only defined with the adoption of the *Convention for the Safeguarding of the Intangible Cultural Heritage*[31] in 2003, which created mechanisms of

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[27] Marasović Tomislav, *Kulturna baština*, book I, Split, 2001., p. 9., mentioned based on Tripimir M. Šošić, *op. cit.*, p. 833.

[28] Lyndel V. Prott, Patrick J. O'Keefe, *"Cultural Heritage" or "Cultural Property"*?, *op. cit.*, p. 307.

[29] Tripimir M. Šošić, *op. cit.*, p. 834.

[30] In article 2, paragraph 1, point 1 of this Convention, intangible cultural heritage is described as: practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognise them as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity. For the purposes of this Convention, consideration will be given solely to such intangible cultural heritage as is compatible with existing international human rights instruments, as well as with the requirements of mutual respect among communities, groups and individuals, and of sustainable development. Further, in point 2 of the same paragraph, it is stated that intangible cultural heritage is manifested in the following domains: (a) oral traditions and expressions, including language as a vehicle of intangible cultural heritage; (b) performing arts; (c) social practices, rituals and festive events; (d) knowledge and practices concerning nature and the universe; (e) traditional craftsmanship.

[31] *Convention for the Safeguarding of the Intangible Cultural Heritage*. In Serbia the Convention was ratified as the *Law on Ratification of the Convention for the Safeguarding of the Intangible Cultural Heritage* (*Official Gazette of the Republic of Serbia – International Treaties*, no. 1/2010.).

international protection for different manifestations of human culture and spiritual creativity.

Serbia has ratified the *Convention for the Safeguarding of the Intangible Cultural Heritage*. When translating the term *heritage* they did not use the word "*baština*" as in the ratified version of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*, but the term "*nasleđe*". Serbia has thus become "one of the few, if not the only country in the world that for the same term from two related conventions officially used different terms, which have a similar meaning in Serbian, but do not represent complete synonyms."[32] Some authors consider the term "*baština*" adequate. In addition, they consider the term "*nasleđe*" as inadequate.[33] According to others, however, the term "*baština*" is treated as an old and forgotten concept, used under the influence of "new national awakening"(in the late nineties of the 20th century and the first years of the 21st century), also in contrast to international law. However, it must be noted that the term "*baština*" corresponds better to the term *heritage*. It is, unlike the term *inheritance*, broader, and points to inheriting traditions or intangible values that are transmitted from one generation to another.

Cultural heritage should be distinguished from *natural heritage*, which is not a product of human work and activity, but refers to natural phenomena.[34] Therefore, cultural heritage does not involve caves, minerals, palaeontological remains and the like.[35] In contrast, gardens, parks and other facilities, as parts of nature that arise due to human activity, belong to *cultural heritage*.[36] Otherwise, it is often difficult to draw a clear line between *natural* and *cultural heritage* because people are in permanent connection with nature, constantly shaping and changing it.

Due to the fact that cultural heritage transcends national boundaries and presents a universal value, a more often-used phrase is *common heritage of mankind*. This term is related to the exploitation of natural resources of the deep seas and the Moon.[37] The legal acts of UNESCO does not mention it explicitly, but it is still stated in the preamble to the *Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict* that "the preservation of the

[32] Vladimir Krivošejev, *Nasleđivanje baštine ili baštinjenje nasleđa?, Etnoantropološki problemi*, no. 2/2015., p. 428.

[33] *Ibid*.

[34] According to article 2 of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*, natural heritage means: *natural features* consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; *geological and physiographical formations* and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; *natural sites* or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

[35] Tripimir M. Šošić, *op. cit.*, p. 842.

[36] *Ibid*.

[37] Tripimir M. Šošić, *op. cit.*, p. 853.

cultural heritage is of great importance for all peoples of the world and that it is important that this heritage should receive international protection."[38] Moreover, it points out that damage caused to cultural property, no matter which nation they belonged to, is damage to the cultural heritage of all mankind, since each nation makes its specific contribution to it.[39] Furthermore, in the definition of cultural property as given in this Convention, it is stated that these are movable and immovable assets, which are of great importance to the cultural heritage of every nation.[40] Similarly, the preamble of the *Convention Concerning the Protection of the World Cultural and Natural Heritage* states that damage or disappearance of any instance of cultural or natural heritage impoverishes the heritage of all peoples of the world. Also, article 6 of this Convention emphasises that *cultural* and *natural heritage* are of universal value and the whole international community should cooperate in their protection. Still, an object designated as part of the *cultural heritage of mankind*, especially in case of immovable cultural heritage, belongs to the state in whose territory it is located and cannot be exempted from its sovereignty, not affecting the property rights governed by national legislation.

Practically, in this area we cannot speak of the prohibition of appropriation law that applies in the fields of sea and space law.[41] For this reason, there are proposals for replacing the appropriation ban in the field of *cultural heritage* with a principle according to which the use of cultural property should not be exclusive. Generally speaking, the protection of cultural property is no longer an "internal matter" of a country, but it is about taking on certain responsibilities that are in the interest of all humanity. However, that fact should be specified by acts of international character because the concept of *cultural heritage of mankind* has still not been elaborated sufficiently in legal terms.[42]

2 Categorisation of cultural property

Each cultural property, regardless of its type, has a particular category. According to the *Law on Cultural Property*, cultural property is classified into three categories based on its character: *cultural property*, *cultural property of great importance* and *cultural property of exceptional importance*.

In terms of determining the circle of properties that are considered for cultural ones, the principle of formality is to be applied, which means that it, as such, must be determined by the *Law on Cultural Property*. The exception to this rule applies to movable cultural property dedicated to protection institutions because these are *ex lege* considered as cultural property. However, it is assumed

[38] See indent 3 of the preamble of this Convention.

[39] See indent 2 of the preamble of this Convention.

[40] Article 1, paragraph 1, point a) of this Convention.

[41] Tripimir M. Šošić, *op. cit.*, p. 857.

[42] Tripimir M. Šošić, *op. cit.*, p. 859.

that there are things and creations that possess the properties prescribed by law, but are not considered for *cultural property* and are neither registered as such, nor kept in cultural institutions. The principle of *prior protection* applies to them because they have some characteristics of particular importance to culture, art and history.[43]

Cultural property and *property under prior protection* may not be damaged, destroyed nor may their appearance, feature or purpose be altered without consent, in line with the *Law on Cultural Property.*[44] *Cultural property* and *property under prior protection* may not be taken out of the country or exported, unless stipulated otherwise by this Law. *Property under prior protection*, situated underground or in water, or taken out of earth or from water, shall be state-owned.[45]

Cultural property of exceptional importance[46] shall possess at least one of the following characteristics: 1) embody special importance for the social, historical and cultural development of a nation in national history, and the development of its natural environment; 2) testify to crucial historical events and persons and their activities in national history; 3) embody unique (rare) representation of human creativity of a certain period or represent a unique example from natural history; 4) exert a strong influence on the development of society, culture, technology and science; 5) possess an exceptional artistic or aesthetic value.[47]

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[43] According to the data of the Ministry of Culture and Information of Serbia, there are 2,306 immovable cultural assets registered in the *Central Register of Immovable Cultural Property*: 2,023 cultural monuments, 66 spatial cultural-historical units, 151 archaeological sites and 66 landmarks. Source: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>. Out of 200 monuments, which have the highest level of protection, 10 cultural monuments are listed on the UNESCO World Heritage List, of which 8 are medieval Serbian monasteries and churches, four of them in the municipality of Novi Pazar, four in Kosovo, the medieval town of Ras, as well as the archaeological site of Felix Romuliana in Gamzigrad, near Zaječar. In addition, the so-called preliminary list of cultural and historical monuments has also been prepared, including the monastery of Manasija, the Roman archaeological site Justiniana Prima, Smederevo Fortress, Bač with its surroundings, Negotin's cellars, as well as the Roman Limes on the Danube. In July 2016, "stećaks" were inscribed on UNESCO's World Heritage List. The project of transnational serial nomination of "stećaks" for inscription was implemented by experts from Bosnia and Herzegovina, Croatia, Montenegro and Serbia. The project began in 2009, when the ministers of culture of the four countries signed a letter of intent. The decision on registration in the World Heritage List was adopted on 15th July 2016. The list includes 28 medieval cemeteries with tombstones (20 in Bosnia and Herzegovina, two in Croatia, three in Montenegro and three in Serbia). In Serbia, the project was led by the Republic Institute for Protection of Cultural Monuments – Belgrade.

[44] Article 7 of the *Law on Cultural Property.*

[45] Article 12 of the *Law on Cultural Property.*

[46] According to the data of the Ministry of Culture and Information, among *cultural properties of exceptional importance* there are 155 cultural monuments, 11 spatial cultural-historical units, 18 archaeological sites and 16 landmarks. Source: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>.

[47] Article 5, paragraph 1, points 1-5 of the *Law on Cultural Property.*

In order to consider something for *cultural property of great importance*,[48] it shall: 1) embody importance for a particular area or period; 2) testify to social or natural phenomena and conditions of social-economic and cultural-historical development in certain periods; 3) testify to important events and prominent persons from national history.[49]

The list of cultural properties of exceptional importance is determined by the National Assembly of the Republic of Serbia, regardless of whether it is movable or immovable cultural property.[50] The list of immovable cultural items of great importance and of immovable cultural property is determined directly by the Government of the Republic of Serbia.[51] In contrast, the responsibility for establishing the list of movable cultural property of great importance depends on their type. Movable cultural property of great importance is designated by competent institutions of culture,[52] while the remaining, lowest category is defined by the relevant regional institutions.[53]

The categorisation of cultural property, among others, defines the competence to determine the conditions for undertaking technical protection, which involves works on the conservation, restoration, reconstruction, revitalisation and presentation of cultural property.[54] Works are carried out only based on the predetermined conditions and previously obtained approval of the project[55] and

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[48] In Serbia there is the following number of *cultural properties of great importance*: 512 cultural monuments, 28 spatial cultural-historic units, 25 archaeological sites and 17 landmarks. Source: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>.

[49] Article 5, paragraph 2, points 1-3 of the *Law on Cultural Property*.

[50] Article 56, paragraph 1 of the *Law on Cultural Property*.

[51] Article 56, paragraph 2 of the *Law on Cultural Property*. The protection institution sends its proposal for the list of immovable cultural properties of great importance to the Republic Institute for Protection of Cultural Monuments. The Republic Institute for Protection of Cultural Monuments prepares the consolidated proposal for determining the list of immovable cultural properties of great importance, and submits it to the ministry responsible for culture, for referral to the Government of the Republic of Serbia.

[52] These are: National Museum in Belgrade, Serbian Archives, National Library of Serbia and Yugoslav Film Archive, according to article 56, paragraph 3 of the *Law on Cultural Property*.

[53] According to article 49, paragraph 1 of the *Law on Cultural Property*, these are museums, archives, film archives and libraries, founded by the republic, autonomous province, town or municipality.

[54] See articles 100 and 101 of the *Law on Cultural Property*.

[55] The approval for the project and documentation for works on immovable cultural property and cultural property of great importance is given by the competent institute for protection of cultural monuments, while for cultural property of exceptional importance approval is given by the Republic Institute for Protection of Cultural Monuments. The Republic Institute for Protection of Cultural Monuments gives approval for projects and documentation of the works that are prepared by competent institutes for protection of cultural monuments. The ministry responsible for culture gives approval for projects and documentation of the works that are prepared by the Republic Institute for Protection of Cultural Monuments.

the documentation.[56] Such activities may be performed by protection institutions and other legal entities, as well as entrepreneurs who have the appropriate personnel and equipment.[57] Furthermore, the *Law on Cultural Property* prescribes that spatial and urban plans should include conditions of the storage, maintenance and use of *cultural property* and *property under prior protection*.[58] Also, there are special conditions prescribed for the relocation of immovable cultural property to new location.[59] All such rules have particular significance when it comes to increasingly frequent natural disasters linked to climate change, concerning the protection of cultural property in such conditions.

3 Classification of cultural property

The *Law on Cultural Property* in Serbia contains no division between tangible and intangible cultural heritage. Hence there is the only division of material cultural property cutting across their physical, artistic, cultural and historical characteristics, into *immovable* and *movable*.[60] Every cultural item

[56] The conditions for taking technical protection measures and other works on immovable cultural heritage and on cultural property of great importance are to be defined by the competent institutes for protection of cultural monuments, while in case of cultural property of exceptional importance the Republic Institute for Protection of Cultural Monuments define these conditions. The competent institutes shall inform the Republic Institute for Protection of Cultural Monuments about these conditions within 7 days. When the projects and documentation of the works are prepared by competent institutes for protection of cultural monuments, the conditions for taking technical protection measures are defined by the Republic Institute for Protection of Cultural Monuments. When the projects and documentation of the works are prepared by the Republic Institute for Protection of Cultural Monuments, the conditions for taking technical protection measures are defined by the ministry responsible for culture.

[57] Article 102 of the *Law on Cultural Property*.

[58] See article 107 of the *Law on Cultural Property*.

[59] Article 108 of the *Law on Cultural Property*.

[60] According to the classification of UNESCO, which is based on physical, artistic, cultural, historical characteristics, but also on the potential for tourist presentation of cultural heritage, we can distinguish: *archaeological sites*, *works with monumental and artistic characteristics* (architectural works, paintings and sculptural works, works of musical and dramatic art), *spatial cultural-historical units* (historic centres of towns, important rural environmental entities, religious buildings, folk parks, medieval castles and fortresses, monastery complexes), *landmarks and memorials*, *folklore heritage* (buildings and spaces, costumes, old crafts, oral traditions, culinary traditions, traditional sports and games), *beliefs*, *languages*, *manifestation values* (events and festivals, fairs in the field of culture, sports events related to traditional sports), *cultural institutions with their activities* (museums, galleries, cultural centres, libraries), *cultural landscapes* (gardens, parks), *cultural tours*, *underwater cultural heritage*, *music* and *songs*. On the problems of classifying cultural heritage under the Convention Concerning the Protection of the World Cultural and Natural Heritage see more: Hua Sun, *World Heritage Classification and Related Issues—A Case Study*

is registered in the relevant register of cultural property, the data on which are public.

The category of *immovable* cultural property, under the provisions of this Law, includes cultural monuments, spatial cultural-historic units, archaeological sites and landmarks. *Movable* cultural property consists of works of art and history, archival material, film material and old and rare books. The legal division of cultural property has an exemplifying-enumerating character. This means that when determining cultural property, the competent authority chooses from the types given by the Law, whereby the characteristics of these properties are listed *exempli cause*.

The division of cultural property into *immovable* and *movable* generally does not create significant concerns. However, there are some situations where such classification is not simple. There arises the question whether a fresco or sculpture should be treated as a movable object or it is still considered part of the real estate on which or in which it is located. This dilemma is solved thanks to the provisions of the *Law on Cultural Property*, according to which the term cultural monument also applies to a work of monumental and decorative art, sculpture, applied arts and technical culture, as well as other movable objects contained in them, part of a construction-architectural structure of special cultural and historical importance.[61] In addition, this Law stipulates that the Government of the Republic of Serbia shall determine the list of immovable cultural properties with an act, which among other things, contains a list of movable goods of special cultural and historical importance, located at immovable cultural sites.[62]

The division of cultural property to *immovable* and *movable* has practical as well as theoretical significance. Certain legal solutions are applicable only to a specific type of cultural property. Thus, certain limitations of property rights apply only to *movable* cultural property. The exchange of cultural property between the institutions responsible for their protection, for creating more complete funds or collections is, logically, only applicable to *movable* cultural property. The possibility of expropriation only applies to *immovable* cultural property. In addition, the immovable cultural properties, as already mentioned, must be determined by a special act of the Government,[63] while movable ones are designated by museums, archives, film archives and libraries, founded by the Republic, autonomous province, town or municipality, in accordance with the *Law on Cultural Property*.[64]

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of the "Convention Concerning the Protection of the World Cultural and Natural Heritage", Procedia Social and Behavioural Sciences, no. 2/2010., p. 6954–6961.

61 Article 19 of the *Law on Cultural Property*.

62 Article 47 of the *Law on Cultural Property*.

63 Article 47, paragraph 1 of the *Law on Cultural Property*.

64 Article 49 of the *Law on Cultural Property*.

3.1 Immovable cultural property

Immovable cultural properties are more exposed to the impact of climate change, since they are often located outdoors. Weather conditions are one of the main causes of their deterioration. Weathering can cause direct physical damage to buildings and disrupt their appearance and physiognomy.[65]

For a better understanding of these phenomena, the forthcoming description will be dedicated to specific types of immovable cultural property, which together with their natural surroundings are more and more exposed to adverse weather conditions.[66] Such circumstances dictate significant changes when it comes to ways of protecting immovable cultural heritage in the world, in order to preserve all their artistic, historical and aesthetic value.

Immovable cultural properties include *cultural monuments*, *spatial cultural-historic units*, archaeological sites and landmarks.[67] Each of them will be discussed in the following.

3.1.1 Cultural monuments

A *cultural monument*, as immovable cultural property, represents a construction-architectural structure of special cultural or historical importance, and its construction unit, vernacular architecture, other immovable structure, part of a structure and a unit with features relating to particular areas or districts, a work of monumental and decorative art, sculpture, applied arts and technical culture, as well as other movable objects contained in them, are of special cultural and historical importance.[68]

According to the Republic Institute for Protection of Cultural Monuments of Serbia, over 2000 cultural monuments are entered in the Central Register of Immovable Cultural Property. This list contains a large number of religious buildings, especially churches and monasteries, fortresses and towers, houses of famous personalities, tombs, cemeteries, buildings, villas, palaces, as well as country houses, farms and barns. Certain objects are protected as cultural monuments, such as hotels like *Metropol*, taverns like *Ruski car* in Belgrade, inns like *Mirko Apostolović's Uzun* in the municipality of Obrenovac, the old spa bath in Sokobanja, clinics like the University Children's Hospital in Tiršova, Belgrade, the Astronomical Observatory in Zvezdara, Belgrade, mills and windmills like *Obornjača* in the municipality of Ada. On the list of protected cultural monuments there is also the interior of the *Papillon* building in Subotica, some iconostases, as well as natural formations like *Đavolja Varoš* (*Devil's Town*) on the

[65] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *Klimatske promene i zaštita – novija iskustva u planiranju područja kulturnog i prirodnog nasleđa, Arhitektura i urbanizam*, no. 40/2015., p. 42.

[66] According to article 3, paragraph 3 of the *Law on Cultural Property* it is prescribed that the protection of immovable cultural property also applies to surrounding areas.

[67] See articles 19, 20, 21, 22 of the *Law on Cultural Property*.

[68] Article 19 of the *Law on Cultural Property*.

Radan Mountain, *Bojčinska* forest, *Gradiš* hill around Orahovac and *Brankovina* near Valjevo.[69]

3.1.2 Spatial cultural-historic units

A *spatial-cultural historical unit* represents an urban or rural settlement or its parts, and an area with several pieces of immovable cultural property of special cultural and historical importance.[70] Such cultural assets represent significant material proof of economic and urban development. Therefore, no construction is allowed within the defined boundaries of protection, because it would undermine their spatial coherence and mood. Additionally, it is necessary to prevent uncontrolled intervention in the facilities by specific measures, in terms of changing their original appearance to the extent that they could lose their historical and aesthetic value, their ambience.[71]

In the Central Register of Immovable Cultural Property of the Republic Institute for Protection of Cultural Monuments of Serbia, over 70 such immovable cultural assets have already been entered. In this list there are some streets, like Knez Mihailova in Belgrade, Knez Miloša in Valjevo or Gospodar Jevrema in Šabac, squares, like Jovana Cvijića in Loznica or Svetog Stefana in Sremska Mitrovica. Spatial cultural-historic units also involve the old centres of some towns and settlements, such as of Novi Sad, Zrenjanin, Zemun, Banatsko Novo Selo, Bečej, Pančevo and Negotin, then some buildings of the tobacco industry in Niš, and the complex of wine cellars in Negotin. This group of cultural properties include areas surrounding certain religious buildings and historical monuments, such as the complex of the synagogue, school and municipal building of the Jewish community in Novi Sad, the Marczibányi-Karátsonyi castle and park in Sremska Kamenica, the memorial complex Gazimestan near Pristina, the complex of Banja Koviljača, etc.

3.1.3 Archaeological sites

An *archaeological site* can be on land or underwater, an area containing remains of buildings and other immovable structures, tombs and other findings, and movable objects from earlier historical eras, which are of special cultural and historical importance. Currently, the Central Registry enrolled over 190 *archaeological sites*, with 18 of them declared for cultural property of exceptional importance, and 25 for property of great importance.

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[69] The list of all cultural monuments can be found on the website of the Republic Institute for Protection of Cultural Monuments: <http://www.heritage.gov.rs/latinica/nepokretna_kulturna_dobra.php>, visited on 24.08.2016.

[70] Article 20 of the *Law on Cultural Property*.

[71] Marija Stamenković, *Analiza arhitektonskih vrednosti prostorno kulturno-istorijske celine "Stara čaršija" u Knjaževcu, Nauka + praksa*, Zbornik radova Građevinsko-arhitektonskog fakulteta u Nišu, no. 12.1./2009., p. 194.

Archaeological sites of human settlements on the territory of Serbia range from the Palaeolithic, or 40,000 years BC.[72] The archaeological site Lepenski Vir is located in the Iron Gates, and it is the centre of one of the most important prehistoric cultures. The remains of sacred architecture were revealed in Lepenski Vir from the period from 6500 to 5500 BC.[73] However, the richest cultural heritage is the one left behind by the Roman Empire. No fewer than 17 Roman emperors were born within the borders of today's Serbia, a fifth of all of them. There have already been found the remains of two boats from the Roman period in Serbia's rivers. One of the first military fortifications on the Danube was Viminacium near Požarevac. The largest Roman Bridge on the Danube was built in the Iron Gates, almost a kilometer and a half long. Sirmium was the oldest Roman city in the territory of Serbia, next to Sremska Mitrovica. Mediana near Niš, Gamzigrad near Zaječar, Justiniana Prima near Leskovac and Singidunum, today Belgrade, are all cities rich in Roman heritage.[74]

3.1.4 Landmarks

According to the *Law on Cultural Property*, a *landmark* is an area related to an event of special historical importance, an area with prominent elements of natural values and values generated by human activity making up a single unit, and memorial tombs or cemeteries and other memorials erected to permanently preserve the memory of important events, persons and places from national history, of special cultural and historical importance.[75]

There are 80 landmarks in the Central Registry, 16 of which are declared for cultural properties of exceptional importance, and 17 for properties of great importance. On the list of landmarks, there are several memorials, monumental complexes, tombs, cemeteries that testify important historical battles and their participants. On the list of landmarks, there are also tombs and monuments of prominent personalities. This category of cultural property includes the tomb of the poet Branko Radičević in Stražilovo on Fruška Gora, the monument of Filip Višnjić in the municipality of Šid or the memorial house of Vuk Karadžić in Tršić, a village in the municipality of Loznica.

All the mentioned cultural properties have been exposed to adverse weather conditions in recent decades. Depending on the location, the material of which the cultural property is composed, frequency and types of extreme weather events, the threats are of different scope and intensity. Therefore it is necessary at the time when Serbia is harmonising its legislation on the protection of cultural heritage with European standards, to pay special attention to researches

[72] The archaeological material is mainly composed of tools, weapons, metal vessels, money as well as parts of ceramic vessels.

[73] Source: Archaeological sites in Serbia: <http://www.dgt.uns.ac.rs/itut/arheologija/index.html>, visited on 25.08.2016.

[74] *Ibid*.

[75] Article 22 of the *Law on Cultural Property*.

dedicated to the impact of climate change on cultural property and to adaptation of protection measures to these new conditions.[76] This will be discussed in the following chapter.

[76] Nađa Kurtović Folić, *The Impact of Climate Change on built Heritage in Serbia*, *Zbornik radova Građevinskog fakulteta u Subotici* (issue devoted to the scientific conference *Contemporary achivements in civile engineering*, no. 25/2014.), p. 860.

Climate-Change Impact on the Protection of Immovable Cultural Property

1 The new climatic conditions and the most important consequences of climate change

Climate change represents one of the greatest challenges of our time. It is the result of internal processes in the climate system, i.e. different anthropogenic factors. It is still not possible to predict the consequences of climate change with absolute certainty. Regardless, enough is known about the risks it brings.[77]

Warming of the climate system is evidenced by the increase in average global temperature, reducing volume of snow and ice at the poles, and rising sea levels. There are noticeably increasing occurrences of heavy rains and floods, drought, soil erosion and landslides, as well as the increased effect of tropical cyclones in the world. When it comes to wildlife, there has been a gradual shift of the habitat of certain animals and plants towards the poles, which is certainly a consequence of global warming. Similarly, in aquatic ecosystems there comes to the change of residence and quantity of certain species of algae, plankton and fish.[78]

Climate change also causes more frequent migrations of the population to areas with favourable climatic conditions.[79] According to some estimates, by the middle of this century, about 200 million people might have to leave their homes due to global warming. However, international law does not recognise the category of climate refugees yet.[80]

Most studies link climate change with the consequences of various human activities. However, there are studies that indicate that the climate changes cyclically independent of human influence. One of them is the *Canon of Insolation* by Milutin Milanković, who proved mathematically that ice (glacial) and interglacial

[77] *Četvrti izveštaj o procenama IPCC: Klimatske promene 2007: Sažeti izveštaj* in: Klimatske promene, studije i analize, Evropski pokret u Srbiji, ed: Milan Simurdić, Beograd, 2010. p. 51.

[78] *Četvrti izveštaj o procenama IPCC: Klimatske promene 2007*. p. 53.

[79] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op. cit*. p. 37.

[80] Gavrilo Ostojić, *Ekološke izbeglice – direktan ili indirektan put do konflikta*, *Vojno delo*, no. 1/2014., p. 54. The author discusses the circumstances that make it difficult to define the concept of environmental refugees, and, among others, he considers that the recognition of this type of refugees might create "unsolvable international problems associated with the use of large amounts of financial aid". In the *Convention Relating to the Status of Refugees* from 1951 (revised in 1967), only those persons have refugee status who have left their country of citizenship for political and social reasons. By definition, a refugee is any person who is outside his country – state, while environmental refugees may be located within the same country, or escape from one part of the country to another. The Supreme Court of New Zealand dismissed the application for asylum of thirty-eight-year-old Ioane Teitiota who moved there from the small island of Kiribati with his wife and three children in 2007, looking for work and a better life. This island is threatened with submersion due to sea level rises. See more about this: AF (Kiribati) [2013] NZIPT 800413 (25 June 2013) <https://forms.justice.govt.nz/search/IPT/Documents/RefugeeProtection/pdf/ref_20130625_800413.pdf>. See also: Kelly Buchanan, *New Zealand: "Climate Change Refugee" Case Overview*, The Law Library of Congress, Global Legal Research Center, 2015.

era alternate over certain periods of time.[81] Changes in average temperature values are due to cyclical changes in the Earth's position in relation to the Sun,[82] because it receives a different amount of solar energy in different epochs.[83]

2 International and regional regulatory framework of adaptation to climate change

Regardless of the specific causes of climate change, society is forced to limit negative anthropogenic impacts as soon as possible, while adjusting to the new circumstances.[84] For this, in addition to general legal acts,[85] numerous strategic documents have been adopted. They identify measures that would reduce vulnerability to climate change, both globally and in regional and national contexts.

Since 1988, the *International Panel on Climate Change*[86] has been publishing regular reports that examine the situation in this area, and determine actions and measures to mitigate the effects of climate change.[87] Furthermore, the United Nations (hereinafter: UN) adopted the *International Strategy for Disaster Reduction* (ISDR) in 2000,[88] and the *Adaptation Policy Frameworks for Climate Change*[89] in 2004, within the framework of the *United Nations Development Programme*. The great importance of the fight against climate change at global level was stressed by the United Nations Conference held in Montreal in 2005.[90] Then in 2007 they adopted the *Action Plan of the Framework Convention on Climate Change* (aka. the *Bali Action Plan*), which introduced the concept of national action to mitigate climate change in global negotiations (*Nationally appropriate mitigation actions* – NAMAs).

As early as in 1994, there was the first global conference on topics like the reduction of natural disasters, held in the Japanese city of Yokohama, where the *guidelines for natural disaster prevention, preparedness and mitigation* were adopted with the Action Plan (*Yokohama Strategy*).[91] The decision of the UN General

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[81] Dušan Nikolić, *Klimatske promene i građansko pravo – Elementi za strategiju prilagođavanja, Zbornik radova Pravnog fakulteta u Novom Sadu*, no. 4/2013.p. 65.

[82] *Ibid*.

[83] *Ibid*.

[84] Dušan Nikolić, *op. cit*. p. 66.

[85] Among them the most important one is the *The United Nations framework Convention on Climate Change* from 1992.

[86] *Intergovernmental Panel on Climate Change*.

[87] The consolidated report for 2014 is available on the website: *Intergovernmental Panel on Climate Change*: <http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf>.

[88] *United Nations International Strategy for Disaster Reduction*.

[89] *Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures*.

[90] *Montreal UN Climate Change Conference*.

[91] *Yokohama Strategy and Plan of Action for a Safer World: guidelines for natural disaster prevention, preparedness and mitigation*.

Assembly convened a second conference with a similar theme after nine years, where the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* was adopted.[92] The main objective of this document was to reduce the risk of natural disasters at international, regional and national levels. The objectives for the next ten-year period were set: improving early warning systems, using knowledge, innovation and education in order to build a "culture" of security and resilience at all levels, reduction of risk factors, as well as increased disaster preparedness. All this would enable better responses to climate-related disasters.

With the aim of achieving more effective results in the future, the *Sendai Framework for Disaster Risk Reduction 2015-2030*[93] was adopted, in which the following targets were listed: significant reduction in deaths from natural disasters and the vulnerability of people, reduction of direct economic losses from damage incurred as a result of natural disasters, reducing damage to critical infrastructure, increasing the number of countries with developed national and local strategies for disaster risk reduction, promotion of cooperation in this field, as well as increasing the availability of information and early warning systems.[94] The priorities for action at global level, according to *Sendai Framework for Disaster Risk Reduction 2015-2030* are, above all, a better understanding of the risks and better ways to control them. This should be achieved through various practices and operational policies that involve institutional cooperation, strengthening competence and coordination across all relevant sectors. In addition, the need for greater investment in the field of risk management is emphasised, strengthening resilience and preparedness for effective response, recovery, rehabilitation and reconstruction in accordance with the philosophy of "build back better".[95]

In 2007 the European Commission adopted the so-called Green Paper entitled *Adapting to climate change in Europe – options for EU Action*.[96] Then, in 2009, they adopted the White Paper – *Adapting to climate change: Towards a European framework for Action*.[97] Important documents of the European Union in this area are the *European Climate Adaptation Platform*[98] from 2012, which served as the basis for the adoption of the *European Union Adaptation Strategy*[99] from 2013.

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92 *The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA).*

93 *Sendai Framework for Disaster Risk Reduction 2015-2030.*

94 See more about this: Bogoljub Milosavljević, *Međunarodna saradnja u oblasti smanjenja rizika od katastrofa, Pravni zapisi* no. 1/2015., p. 52-84.

95 Bogoljub Milosavljević, *Međunarodna saradnja u oblasti smanjenja rizika od katastrofa*. p. 69-70.

96 Green Paper – *Adapting to climate change in Europe – options for EU Action.*

97 White Paper – *Adapting to climate change: Towards a European framework for Action.*

98 *European Climate Adaptation Platform.*

99 *European Union Adaptation Strategy.*

According to the later Europe 2020 Strategy,[100] there are three clear goals of the EU defined in terms of climate change, including the priority of reducing emissions of greenhouse gases by at least 20% compared to 1990 levels. Otherwise, projections relating to the reduction by the year 2050 have been established at the level of 80-95%, with the ultimate goal of holding any increase in average temperature below 2%. "Another objective of the EU relates to getting renewable energy to contribute 20% of electricity consumption, and the third represents the improvement of energy efficiency by reducing primary energy consumption by 20% (below projected levels)."[101]

In addition to international and regional planning documents, many states have created national adaptation strategies. These enable the implementation of public policies related to climate change in order to mitigate their consequences. The adaptive capacity of Serbia is still assessed as very modest. Certainly, the process of approaching EU membership is important to encourage adaptation to climate change.[102] With state aid and foreign donations the work of the Republic Hydrometeorological Institute of Serbia was improved. Today it has a European reputation. In addition to providing regular weather forecasts, it gives hydrological forecasts, issues a danger index for forest fires, a UV index forecast, announcements on extremely hot or cold weatherfronts and the like.[103]

In November 2014, the *National Council on Climate Change* was established with the task of monitoring the development and implementation of national policies in this area, sectoral policies and other planning documents.[104] Yet in Serbia we are still waiting for a single strategic document on adaptation, although its development was already planned in the *National Sustainable Development Strategy* in 2008.[105]

In a recently published report of the European Commission on the *Enlargement for the year 2016 for Serbia*, Serbia has received particular praise for progress in the harmonisation of policies and legislation with the EU acquis with regard to waste management, nature protection and climate change. It was emphasised in this document that there was improvement in strategic planning, and the establishment of the Green Fund was praised, the two key recommendations in 2015. In particular, when it comes to climate change, it is expected Serbia in the future will ratify the *Paris Agreement*[106] and start its implementa-

[100] *Europe 2020: A strategy for smart, sustainable and inclusive growth.*

[101] Dragoljub Todić, *Propisi Evropske unije u oblasti klimatskih promena i neka otvorena pitanja*, in: *Klimatske promene – Pravni i ekonomski izazovi*, (ed. Stevan Lilić), Pravni fakultet Univerziteta u Beogradu, 2011. p. 88.

[102] Goran Sekulić, et. al., *Procena ranjivosti na klimatske promene – Srbija*, WWF (Svetski fond za prirodu), Centar za unapređenje životne sredine, Beograd, 2012., p. 23.

[103] Goran Sekulić, et. al., *op. cit.*, p. 24.

[104] Source: Ministry of Agriculture and Environmental Protection: <http://www.eko.minpolj.gov.rs/osnovan-nacionalni-savet-za-klimatske-promene/>, visited on 02.09.2016.

[105] *National Sustainable Development Strategy* (*Official Gazette of the Republic of Serbia* no. 57/2008.).

[106] *Paris Agreement.*

tion. This includes the development of a comprehensive strategy for adapting to climate change. It will be compatible with the *EU Climate and Energy Framework 2030*[107] and well integrated into all relevant sectors.[108]

3 The impact of climate conditions and immovable cultural property

Climatic conditions are one of the main causes of damage and deterioration of immovable cultural property. Extreme weather conditions due to climate change are of global character. However, the risks are different in certain regions and smaller local areas. In some areas drastic changes in temperature are more noticeable, in others frequent floods or droughts, landslides, while some coastal areas struggle with increasing sea levels.

On the list of endangered cultural monuments that could experience flooding in the coming decades there is the Statue of Liberty, Tower of London, and Sydney Opera House. Meanwhile, Stonehenge is losing its battle with soil erosion. The 5000-year-old Neolithic settlement of Skara Bra located on the coast of Scotland is in a similar situation. Many cultural properties are exposed to the effects of acid rain. Particularly those made of marble and limestone, as are numerous ancient Greek and Roman monuments.[109] Central parts of Italy were hit by several strong earthquakes in the last few years, during which some rich cultural heritage was destroyed.

Work done by UNESCO suggests climate change is a global problem and that there is a global need to mitigate its impact. They are working on networking world heritage sites, "which enables the exchange of information and promotion of good practices, as well as raising awareness of the impacts of climate change."[110] Cultural property must be viewed as a vulnerable category threatened by extreme weather conditions. Therefore, UNESCO is increasingly supporting international cooperation and research studies devoted to climate-change impact on cultural heritage. The results will help reduce the risk of such occurrences, since they cannot usually be fully eliminated.[111]

The publication *Case study on the impact of climate change on World Heritage* was issued in the framework of the *UNESCO World Heritage Centre*, which mentions a number of examples of climate-change impacts on natural and cultural heritage, and provides an overview of activities and measures applied in order to adapt to and mitigate these effects. Separate case studies suggest that

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[107] *The EU Climate and Energy Framework 2030.*

[108] Radmilo Marković, *Poglavlje 27: najteže, najskuplje, i – nije prioritet*, Source: *Vreme*: <http://www.vreme.com/cms/view.php?id=1445373>, visited on 24.11. 2016.

[109] Ana Batrićević, *Pravna zaštita materijalnih kulturnih dobara od posledica zagađivanja životne sredine*, *Zbornik instituta za kriminološka i sociološka istraživanja*, no. 1/2016. p. 35.

[110] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op. cit.*, p. 41.

[111] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op. cit.*, p. 40.

there is no single answer to these identified climate risks.[112] However, there are certain principles and measures that can be applied to areas with the same or similar characteristics. Such measures seek to "mitigate the impact of climate change and adapt to it, and are based on monitoring and risk assessment, by taking measures to increase the resilience and adaptability of the community."[113] It is necessary to create an adequate database in order to gain better insight into the potential hazards and risks. Therefore, they are working intensively on mapping all vulnerable areas and specific cultural monuments.

The following description will be dedicated to different climatic impacts on the condition of immovable cultural property.

3.1 The impact of emissions and acid rain

Excessive emission of harmful gases in the air causes the occurrence of acid rain. It represents a mixture of water, sulphur dioxide, nitrogen oxide and other chemical compounds. The acidity of these storms is roughly 40 times higher than that of normal rainfall.

Acid rain and other atmospheric pollution caused by excessive emission of harmful gases are particularly threatening to immovable cultural property made of stone, marble, limestone and granite.[114] Due to its harmful effects, the surface of monuments and facades disintegrates with permanent damage. Danger exists for cultural goods made of gold, silver, copper, bronze and iron as well. Atmospheric pollution leads to corrosion, discoloration and gradual deterioration.

Greece's Parthenon built in the 5th century BC on the Acropolis in Athens is the symbol of ancient civilisation, democracy, and one of the most famous cultural monuments endangered by emissions and acid rain.[115] Parthenon[116] is a Doric temple with Ionic features built of high-quality marble. However, a high percentage of carbon dioxide, nitrogen oxides and dust in the air, as a result of intensive industrial development, increased the acidity of the environment in

[112] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op. cit.*, p. 42.

[113] *Ibid.*

[114] Nishiyama Yoichi, *Effects of Air Pollution on Cultural Properties: The Measuring of Air Pollution and the Protection of Cultural Properties in the Historic City of Nara, Japan*, 2004. p. 2, available online: <http://www.nara.accu.or.jp/elearning/2004/pollution.pdf>, visited on 07.09.2016.

[115] For more on acid rain and legal regulations concerning this phenomenon, see sections of: Jutta Brunnée, *Acid Rain and Ozone Layer Depletion: International Law and Regulation, Transnational Publishers*, Inc. Dobbs Ferry, New York, 1988.

[116] The *Parthenon* was dedicated to the Greek goddess Athena. Like most Greek temples, the Parthenon was used as a treasury, and at one time it was the treasury of the Delian League. In the 6th century, the Parthenon was a Christian church dedicated to the Virgin. After the Turks conquered Greece, it was used as a mosque, and at that time it even had a minaret. By the end of the 17th century, on 28th September 1687, the Turkish ammunition depot, which was located inside the building, was hit by a grenade in a conflict with the Venetians. As a result of an explosion, there was made significant damage to the Parthenon and its sculptures.

the past few decades. The acid from the air is gradually eroding the surface of the marble columns and the statues of the Parthenon, as well as the decorations in stone.[117] Consequently, dark spots are appearing on the light coloured marble.

In the seventies they used a special method for cleaning the columns, in order to restore their old colour and appearance. However, this method is no longer used because it removed the original surface layer of the building. Therefore, the original sculptures and pillars of the temple Erechtheon are now replaced by replicas, while the originals are placed in a museum. There are ongoing studies to find the most effective method of cleaning and restoration.

Atmospheric pollution is damaging the appearance of Cologne Cathedral[118] as well, which is the symbol of this German city on the Rhine. The cathedral was built in several phases starting in 1248, until final completion in 1880. The current massive Gothic contraction comes from the 14th century with a 157-metre-high tower. During the construction various kinds of stone were used. Over time, a mixture of sulphur, chlorine, fluorine and smog together with rain have damaged the stone surface of the cathedral. Due to crystallisation there is scaling and flaking of the facades to a depth of about 1 cm, and the appearance of holes 15-20 cm wide in diameter. Parts of the building affected by the wind are particularly damaged.[119]

Restoration and conservation work on Cologne Cathedral began in 1972. Contaminated dark coatings were dissolved by a special natural substance derived from wood, and cleaned with distilled water. Some of the statues that have suffered the most damage were replaced by replicas. The least damaged statues, as well as some parts of the facades, which were in poor condition, were coated with a layer of resin, in order to protect and preserve them from further damage. The ultimate goal of restoration actions is to clean the whole structure using natural substances and distilled water, and to restore its original look using traditional construction techniques.[120]

The conditions and visual identity of many other cultural monuments in the world is undermined by the influence of excessive emissions. The marble of Taj Mahal[121] in India is gradually changing its colour. Parts of the Statue of Liberty on the island of Manhattan in New York City[122] are significantly corroded as a

[117] Yoichi Nishiyama, *op. cit.*, p. 4.

[118] This Cathedral represents exceptional harmony achieved in medieval-gothic architecture. It was designed in the shape of a Latin cross. The relics of the Three Wise Men are kept in the Cathedral, which were brought to Cologne in 1164.

[119] Yoichi Nishiyama, *op. cit.*, p. 6.

[120] *Ibid.*

[121] The *Taj Mahal* was built between 1631 and 1654 and represents a major achievement in Mughal architecture, a combination of Persian, Indian and Islamic architectural styles. Its construction involved thousands of artists and construction workers.

[122] The *Statue of Liberty* represents a gift of France to the United States as a sign of their friendship. The sculptor of the monument was Frederic Bartholdi, while the interior structure was made by the famous engineer Gustave Eiffel (designer of the Eiffel Tower). The Statue of Liberty was put on the island in

result of air pollution. The surface of the large Bronze bell of Songdok-dea wangsin Jong, which is a major tourist attraction, and is located in the central park of the National Museum in the Korean city of Gongju is being corroded under the influence of high concentrations of harmful gases in the air.[123] In Bulgaria under the project *Beautiful Bulgaria II* about €4,500,000 was allocated for cleaning the facades and roofs of 1350 most important cultural and historic buildings. With the help of UNESCO, the large stone relief carved on the Madara Plateau, known as the Madara Rider in northeast Bulgaria, was strengthened and protected by a transparent coating resistant to various adverse atmospheric conditions. Thanks to a drainage system the removal of surface water was also resolved.

Numerous studies have shown that harmful substances in the air cause damage and gradual deterioration of cultural property hundreds of times faster than in normal circumstances. In order to prevent this process, in addition to the general tendency to reduce the levels of harmful gases in the air, there is also a practice of relocating certain cultural and historical monuments of smaller format, away from sources of harm. Effective protection is achieved by building roofs and constructions to shelter from the rain and the wind, followed by reforestation, which could mitigate the impact of atmospheric pollution, as well as by the implementation of appropriate measures of restoration[124] and conservation.[125]

3.2 The impact of floods

In recent decades we have witnessed more frequent flooding. To assess the precise impact of climate change on such phenomena, it is necessary to collect reliable information generated by long-term monitoring of the rivers with the natural flow regime. In any case, it is clear that global warming will intensify the hydrological cycle, causing more frequent flooding of the rivers in many areas. According to some statistics in Europe, about two-thirds of the material damage caused by natural disasters comes from floods, storms and other meteorological phenomena.[126] Moreover, we should not neglect the fact

front of New York in 1886. It is 46 metres high with a 47-metre pedestal, so that the top is at a height of 93 metres. The statue weighs 205 tons. The crown with seven rays is the symbol of freedom that should "burn" through the seven seas on seven continents.

[123] Yoichi Nishiyama, *op. cit.*, p. 10.

[124] The term *restoration* means the process of restoring the original form of the object to be protected from degradation.

[125] The term *restoration* is used with the term of *conservation*. However, these two terms do not have the same meaning. *Conservation* involves a more complex set of actions, i.e. the sum of physical and chemical procedures for prolonging the lifetime of a cultural property. This allows removing the existing damage of biological, chemical and other nature, in order to slow down the natural process of ageing, destruction and degradation of materials.

[126] Source: Euroaktiv.rs, *Poplave delom rezultat klimatskih promena*: <http://www.euractiv.rs/odrzivi-razvoj/5920-poplave-delom-rezultat-klimatskih-promena->.

that more and more people live in flood-prone areas. Therefore, damage from the effects of floods will drastically increase in the coming decades.

According to the European *Directive on flooding*,[127] EU member states are required to map flood plains, as well as to prepare plans for risk management, aimed at prevention and protection. The reports of the European Environment Agency (EEA)[128] mention the concept of "more space for rivers" as a possible measure to mitigate the effects of floods. This includes allowing a wider territory to be flooded in some locations, by lowering the level of flood plains or relocating dams. In addition, wetlands that can absorb excess water are to be created, and various measures are to be applied to maintain the stability of shores and riverbeds.

Floods pose a major threat to cultural heritage. During the recent floods in our region, Hurricane Sandy in New York in 2012, the floods in Thailand in 2011, in Pakistan in 2010, in Rome and the city of Beverley in England in 2007, there was huge damage caused to several cultural and historical sites.

In London, after the flooding of the River Thames in 1953, a flood control system was built to very high standards. However, during its design, they took into account data on the movement of the water level in the previous two centuries, which certainly does not suit the new circumstances and increasing risk of flooding in the coming decades.[129] The risk of this phenomenon is directly threatening 80 billion pounds worth of property that lies in the flood plain area on the banks of the Thames.[130] The National Maritime Museum, the *Tower of London*,[131] the *Greenwich Observatory*[132] and the *Westminster Palace*, which is also the seat of the British Parliament,[133] are all located here.

Extensive damage was caused by the floods in summer 2002 to the old city centre of Prague with its magnificent buildings from the 14th century, such as the *Hradcany Castle*, the *St. Vidus Cathedral* and the *Charles Bridge* on the Vltava.[134] The Czech Krumlov was also flooded then, which was one of the

[127] *Directive 2007/60/EC on the assessment and management of flood.*

[128] *European Environment Agency.*

[129] Augustin Colette, et al., *Case Studies on Climate Change and World Heritage*, UNESCO World Heritage Centre, Paris, 2009. (Second Edition), p. 68.

[130] Augustin Colette, et al., *op. cit.*, p. 69.

[131] *Tower of London* is a medieval fortress that is one of the most famous sights of the city added to the World Heritage List in 1988. Until the middle of the 20th century, it was used for military purposes and as a prison for some important prisoners. It was also known as a torture and execution site for royal opponents. Today, the crown of Queen Elizabeth II is kept in the Tower. It is known for the ravens that have been accommodated in it for centuries. Currently there are 8 of them, each having its own name.

[132] The Greenwich meridian is the prime meridian, which is defined as zero degrees longitude. It passes through the Greenwich Observatory in a town with the same name near London.

[133] Westminster Palace or the *Houses of Parliament* is the seat of the Parliament of the United Kingdom of Great Britain and Northern Ireland.

[134] The old centre of the city of Prague has been on the UNESCO World Heritage List since 1992. It is located on the banks of the Vltava River, presenting a beautiful architectural unit.

best preserved cities in the Czech Republic with buildings dating from the period from the 14th to the 17th century in the style of Gothic, Renaissance and Baroque. Water entered the city centre and it was more than 4 metres deep. Fortunately, the medieval buildings of this region are built of stone and bricks that are more resistant to moisture, compared to wood and raw brick. Otherwise, the damage would have been much worse.

The main challenge in mitigating harm caused by the floods in the Czech Republic was drying damp walls and buildings before the onset of cold, which would additionally damage them. The Czech Government has, after all, invested significant resources in improving flood protection measures, which include prevention, comprehensive analyses and management of all potential risks of repetition of these unfortunate events.

During the catastrophic floods that hit Serbia in 2014, numerous items of movable and especially immovable cultural heritage was affected significantly. Based on the decision to declare an emergency, expert teams of emergency services were established, which implemented a number of measures to protect cultural property. The list of most endangered cultural monuments included St George's Churchin Oplenac, spatial cultural-historic units in Valjevo, Čačak, Kraljevo, Obrenovac, St. Nicholas Monastery in Šatornja, museum buildings in Čačak, Jagodina, Leskovac, some landmarks, such as Risovača Cave, Senjski Rudnik and most important monumental heritage in the area of the City of Belgrade.[135]

According to the *Report of the Government* drawn up after the floods in Serbia in 2014, Obrenovac suffered the most damage.[136] The entire historic district of this municipality was under 1 metre of water, and in some places even deeper. About 220 private houses, located around Miloš Obilić Street, were flooded. These were an integral part of the historical and architectural area, or having urban-cultural or ambient-cultural importance.[137] The materials from which these objects were built are quite sensitive, since their bases are made of wooden frames filled with bricks.[138] This is the case with the Mihajlović family house and the library of Obrenovac. Beside Obrenovac, the historical part of the centre of Paraćin, where the water level reached as much as 1 metre above normal street level, and the historical part of Valjevo, were also heavily damaged. In other municipalities, many objects of folk architecture have suffered damage. Mostly roofs and roof structures were damaged. Facades and frontages were waterlogged, and landslides occurred in many places afterwards. Many churches and the castle in Šabac became unstable structurally.

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[135] Source: *Portal Mondo*: <http://mondo.rs/a691890/Zabava/Kultura/Poplave-ugrozile-i-kulturna-dobra.html>.

[136] *Floods in Serbia in 2014*. (Report of the Government of the Republic of Serbia), available online: <http://www.obnova.gov.rs/uploads/useruploads/Documents/Izvestaj-o-proceni-potreba-za-oporavak-i-obnovu-posledica-poplava.pdf>.

[137] *Floods in Serbia in 2014*. (Report of the Government of the Republic of Serbia), p. 77-78.

[138] *Floods in Serbia in 2014*. (Report of the Government of the Republic of Serbia), p. 78.

Fully flooded buildings were temporarily unavailable for public use, such as those in Obrenovac and Paraćin. Total losses to the cultural sector after floods in Serbia are estimated at 112.7 million dinars, 98.1 million dinars of which were costs to the public sector, and 14.7 million to the private sector.[139] About 57.7 million dinars represent the damage suffered by immovable cultural heritage, while the rest of the amount refers to natural heritage, intangible heritage, as well as facilities in which cultural sites are located.[140]

In general, floods pose a major threat to relics and historical sites. Protection work entails harmonising development strategies and risk management systems with techniques of restoration and conservation.[141] These techniques should be more proactive in order to prevent risks, and not exclusively aimed at eliminating harmful effects after floods and other natural disasters.

3.3 Landslides and erosion

Erosion[142] is the natural process of leaching and removal of the tiniest and most fertile particles from loose soil. This occurs after heavy rains or earthquakes. On the other hand, landslides are type of erosion which represents the movement of the earth, rocks and other deposits. They activate and develop rapidly when water is accumulated in the soil as a result of strong and heavy rains, groundwater, snowmelting, earthquakes, soil freezing, as well as inadequate exploitation of the ground. In the event of landslides, the mass of rocks and earth falls down.

It is estimated that the damage annually caused by landslides worldwide exceed several billion dollars. Also, thousands of people flee from this phenomenon every year. Serbia is one of the areas affected by this phenomenon. About 30% of Serbia is subject to landslides. In Belgrade only, there are more than 750 landslides a year, while in Serbia the number is around 36,000.[143]

Landslides threaten numerous cultural properties also worldwide. One of these is Machu Picchu, the sacred Inca city located on the highest part of the eastern Andes, which was declared as one of the Seven Wonders of the World in 2007. Chavín,[144] the very old ceremonial centre 465 km north of Lima is facing similar problems, as it is now made up of a series of ruined remains of

[139] *Floods in Serbia in 2014*. (Report of the Government of the Republic of Serbia), p. 84.

[140] *Floods in Serbia in 2014*. (Report of the Government of the Republic of Serbia), p. 84-85.

[141] Rohit Jigyasu, *op. cit.*, p. 26.

[142] There are several types of erosion, such as *fluvial erosion* when water penetrates deep into the soil through narrow channels. This kind of erosion leads to changes to the riverbed. *Wind erosion* occurs under the influence of wind, while *glacial erosion* by the work of glaciers. For the occurrence of *karst erosion* atmospheric, surface and groundwater are responsible, while *rainfall erosion* is caused by mechanical impact of atmospheric water.

[143] Source: *Geologija*: <http://www.geologija.org/articles/geo.php?t=2>, visited on 18.09.2016.

[144] Chavín is one of the oldest cultures of South America. There are two theories about the historical significance of the city called Chavín de Huántar. According to the first one, this city was the capital of

truncated pyramids, buildings, terraces, squares with underground passages.[145] Melting glaciers in this area create tremendous landslides, which took thousands of lives and caused great material damage to the site in 1945, 1962 and 1970.[146] Large landslides in Venezuela in 1999 destroyed many buildings of historical and cultural importance in the city of La Guairá. Due to the large landslide following heavy rains in October 2000 in Gondo, Switzerland, the old tower structure of Stockalper was destroyed, which was built between 1666 and 1685. This place was protected from landslides with a special wall of reinforced concrete; however the landslides were stronger than expected. In addition to considerable material damage, 14 people were killed.

Stonehenge,[147] the most famous prehistoric monument of England, is exposed to the effects of erosion. The famous stone statues on Easter Island in the Pacific in the form of human figures – Moai – are in a similar vulnerable situation. Most of them are located on the coast, so rising sea levels and stronger tidal surges threaten to damage them. Even our Đavolja Varoš (Devil's Town), a remarkable geomorphological natural monument of scientific, cultural and tourist-trade importance is exposed to excessive erosion, which threatens these unique stone pyramids.[148]

One of the basic measures of protection against landslides and erosion is afforestation. Thus, in the construction of the *Great Wall* terraces with tamarisk trees were built.[149] In addition, as a form of protection against landslides, certain technical measures are also used, such as the removal of unstable parts of the field, anchoring unstable layers, regulation of surface water runoff. In case of erosion barriers, sills and terraces are made.

3.4 Earthquakes and volcanic eruptions

Melting ice at the poles reduces the pressure to the continental plates, so that they can shift easier and faster. Of course, these processes are very complex; changes that occur on the surface of the Earth are not independent of what is happening throughout the solar system. In fact, the interaction of forces between the planets affects the orbit of the Earth, its movement, the slope of the axis of rotation and the position of the magnetic poles. All of these cause

a theocratic society, which assailed all nations in their neighbourhood. Supporters of the second theory believe that it is only a ceremonial centre.

[145] There is also located a monolithic statue of a 4.53-metre high deity, called *Great knife* or *Great spear idol* for its form of a real knife pointing towards the ground.

[146] Augustin Colette, et al., *op. cit.*, p. 61.

[147] Stonehenge was built in three phases between 3000 and 1600 BC. Archaeologists agree that it is a temple, but it is not known, which gods it was dedicated to, or how the rituals were carried out.

[148] Source: Planeta magazine: <http://www.planeta.rs/47/13%20svetska%20bastina.htm>, visited on 20.09.2016.

[149] Ana Kopčić, *Važnost i neophodnost bioinženjerskih metoda u rješavanju problema erozija i klizišta tla*, *Tehnički glasnik*, Zagreb, no. 2/2012., p. 199.

the shift of continental plates on Earth, which are increasingly relieved from the pressure of the ice mass, due to climate change and global warming. Beside the cooling of the magma, this is also the cause of more frequent earthquakes and volcanic eruptions on our planet.

These phenomena can cause enormous material damage. Volcanoes have caused disasters through history sufficient to destroy some ancient civilisations. We are familiar with the eruption of the volcano Vesuvius, which destroyed the ancient city of Pompeii; then with the eruption of Stromboli in Italy, which is, along with Etna, the only currently active volcano in Europe; Pinatubo in Indonesia and Mount Fuji in Japan, or Popocatépetl in Mexico.

In recent history, cultural properties have been far less damaged in volcanic eruptions compared to earthquakes, which are able to destroy whole cities, cultural and historical sites. Seismic activity is a serious threat to the stability of cultural property, especially to buildings. It may cause cracking of facades, roofs and floors, leading to partial damage, and often to the collapse of the entire structure. Typical consequences of earthquakes are liquefaction (soil flow), landslides and avalanches.[150]

In 2016 central Italy was hit by several strong earthquakes. In August of the same year the town of Amatrice was destroyed completely, when as many as 300 people died. This settlement dates back to the ancient world and it possessed precious ancient buildings and tombs. In this area, during the earthquake in 1997, ten people were killed and one of the jewels of Umbria, Basilica of St. Francis of Assisi, with frescos by Giotto, was severely damaged.

A strong earthquake hit Egypt in 1992, when as many as 150 cultural monuments from the time of the Pharaohs, as well as Islamic and Coptic buildings, were damaged. In our region, Montenegro remembers the devastating earthquake of 1979, when 101 people lost their lives. Ulcinj, Bar, Petrovac, Budva, Tivat, Kotor, Risan and Herceg Novi got damaged then. Monasteries, churches, museums, archives were especially damaged, which are concentrated mainly in the most vulnerable coastal zone. An earthquake measuring between 7 and 8 on the Richter scale hit Kraljevo in 2010, and it was felt across Serbia. Monasteries of Žiča and Sopoćani suffered damage then.

In comparison to some other natural disasters, it is difficult to predict earthquakes and volcanic eruptions because they happen suddenly. Therefore, preventative measures are of very limited value here. For this reason, attention is directed to assistance, evacuation and rescue, as well as to reconstruction of damaged buildings and their additional reinforcement for higher resistance. This involves the use of seismic anchors and links, the use of frames for fixing, horizontal structural elements and the like.[151] During such actions, attention

[150] Institute for Hydrometeorology and Seismology of Montenegro: <http://www.seismo.co.me/questions/13.htm>.

[151] Nedeljko Stojnić, Duško Ostojić, *Predlog smanjenja dozvoljenog seizmičkog oštećenja na nepokretnim kulturnim dobrima visokogradnje, Građevinski materijali i konstrukcije,* no. 4/2016. p. 42.

must be given to not disturb the historic appearance and value of the building to which adequate seismic protection is provided.

3.5 Sea level rise

Due to global warming and the melting of polar ice, sea levels are rising. This represents a major threat to low-lying coastal areas inhabited by millions of people. Higher sea levels and stronger storms can completely erase some beaches and islands. Up to now, the most vulnerable area is the Republic of Kiribati in the Pacific Ocean,[152] followed by the Maldives in the Indian Ocean, Torres Strait Islands located in the far north of Australia. In addition, Bangladesh is facing similar problems, where massive floods often cover one quarter of the country due to rising sea levels. The situation is also difficult in Miami, Washington DC, Amsterdam, Shanghai and Venice, the residents of which will be forced to migrate to higher inland areas.

The latest studies[153] show that an increase in average global temperature of just one degree Celsius would cause over 40 cities on Earth to be directly threatened by potential flooding in the next 2000 years.[154] With an increase in temperature of three degrees, one-fifth of the world's cultural heritage would be in danger. In that case, as much as 136 sites would remain below sea level. In addition, it should be noted that this did not take into account the harmful effects of tides and storms.

Venice[155] is increasingly affected by regular floods, to which the local population has already become accustomed. They are known as *aqua alta* (high water) and are caused by unusually high tide on days when strong wind blows and during heavy rains. However, it is happening more and more often, due to rising sea levels. This problem is keenly debated. The Italian government has chosen as a last resort the use of so-called MOS system. It represents a kind of experimental electromechanical module that includes a construction of 79 moving dams, which should separate the lagoons from the sea when the waves grow one

[152] Even if emissions were reduced significantly, the Republic of Kiribati will be flooded in a period between 30 and 50 years from now. Therefore, the president Anote Tong advocated a "migrating with dignity" strategy, supported by the governments of Australia and New Zealand. This way the citizens of Kiribati will be able to be educated, to take part in training for easier employment later on. Otherwise, this Republic has already bought a piece of land on the island of Fiji, where they will grow crops and from where they will transport fresh drinking water.

[153] One of the most recent research studies was done by Ben Marzeion from the University of Innsbruck and Anders Levermann from Potsdam Institute for Climate Impact Research.

[154] Source: *Radio Televizija Srbije*: <http://www.rts.rs/page/magazine/sr/story/2523/nauka/2391737/klimatske-promene-prete-svetskom-kulturnom-nasledju-.html>, visited on 03.09.2016.

[155] Venice is unique in the world. It was built on 118 small islands at the mouth of the river Brenta in the Venice lagoon, with canals instead of streets. Along the canals there are a number of churches and palaces of great cultural and historical value, which form a unique urban complex. Venice and its canals have been declared a UNESCO World Heritage monument.

metre above the permissible limit. However, many believe that this system will fail to preserve Venice from high waters, and that it will eventually be flooded. That would be a terrible blow not only to Italy, but also the entire world's cultural heritage.

On the list of cultural properties threatened by immersion there are the Statue of Liberty, Sydney Opera House, as well as the Tower of London, Independence Hall in Philadelphia, where the *Declaration of Independence* was signed in 1776 and the *US Constitution* in 1787.[156] The following are all threatened by rising water levels: the old town of Dubrovnik, Bahai Gardens in Haifa in Israel that are among the Seven Wonders of the World, the Nile delta, the Peace Memorial in Hiroshima, the city of Istanbul and many other sights. The archaeological sites of Pompeii and Herculaneum belong in this list, as does a large part of Pisa and Naples both in Italy.

There are a number of measures to mitigate global warming's threat to raise sea levels. The most important are reducing use of fossil fuels, more rational uses of energy resources, as well as more intensive recycling of raw materials. When it comes to the protection of cultural heritage, the construction of dams, walls and protective barriers is applied in practice. Insofar as possible, some monuments with smaller dimensions might be relocated out of the reach of waves, to higher inland areas.

3.6 Extreme storms

Partly due to climate change, the incidence of catastrophic hurricanes,[157] tornadoes,[158] typhoons[159] is rising. While hurricanes are typical of the United States and the Caribbean countries, typhoons affect the north-western part of the Pacific Ocean.

Since the beginning of 21st century, the world has been hit by a large number of natural disasters which claimed many lives and caused enormous material damage. The tsunami in the Indian Ocean in 2004 killed nearly 275,000 people. Areas from Indonesia up to Somalia in Africa suffered damage. Hurricane Katrina struck the southern coast of the United States in August 2005, and about 80% of the city of New Orleans was flooded as the hurricane cause collision of the dams that protected the city. Nearly 1,200 people died then. In

[156] See more about this: Ben Marzeion, Anders Levermann, *Loss of Cultural World Heritage and Currently Inhabited Places to Sea-level Rise, Environmental Research Letters*, no. 9/2014. p. 1-7.

[157] Hurricanes are gales, tropical storms, the speeds of which exceed 119 kilometres per hour. Hurricanes are formed in the Gulf of Mexico, affecting the south-eastern part of the United States of America and the Caribbean countries with varying intensity.

[158] Tornados are rotating accumulations of air (vortices). They are formed from cumulonimbus clouds with circulation that touch the surface of the earth.

[159] Typhoons are a type of tropical cyclone, typical for the north-western part of the Pacific Ocean. Typhoons most often occur during summer and autumn. Wind speeds inside the typhoon may reach up to 300 km/h. Typhoons carry large amounts of rainfall and can cause enormous damage.

March 2011, an undersea earthquake of magnitude 9 on the Richter scale hit the northeast of Japan, which caused a tsunami of terrible proportions, causing explosions in three nuclear reactors at the Fukushima Daiichi Nuclear Power Plant. Hurricane Sandy in late October 2012 took 200 lives; the floods filled the subway tunnels and completely blocked the southern part of Manhattan, where it caused damage worth around 65 billion dollars. Supertyphoon Haiyan accompanied by very strong winds hit the Philippines in 2013 and practically "swallowed" coastal cities, killing at least 10,000 people.

Such natural disasters cause great damage to cultural heritage. During 1999's Hurricane Martin in France numerous architectural buildings and fortifications suffered from Brittany to Alsace. The hurricane destroyed 10,000 trees in the park of the Palace of Versailles. Churches in Strasbourg, Rouen, Bordeaux and Rambouillet were damaged. Hurricane Sandy substantially damaged the infrastructure of Liberty Island, where the famous Statue of Liberty is situated. Fortunately, the monument survived the terrible shock of the hurricane and was not damaged, but the island was closed to the public for a while. Hurricane Cyril in 2007 also damaged a number of buildings in cities across Europe, including the old stone bridge in the Czech town of Písek, breaking off its monumental cross. During Hurricane Mitch in 2008 many historical attractions were destroyed in the capital and the largest city of Honduras, Tegucigalpa. Libraries were flooded, the historic centre of the city was damaged and valuable archives were destroyed.

More frequent occurrences of floods, landslides and erosion, the gradual rise in sea levels, extreme storms and earthquakes are evidence that the climate is changing, and it represents a great danger to the population of the world and to cultural heritage in general. At the same time, these are clear signs that it is necessary to take urgent measures to adapt to current weather conditions.

Adaptation to climate change involves multidisciplinary research. Global, regional and local strategies of adaptation to the new situation must include a plan of protecting cultural heritage and risk management measures, which would prevent damage to cultural sites or reduce it to a minimum. The achievements in this field will be discussed below.

Legal and Strategic Framework of Adoption and Courses of Action in Order to Protect Cultural Heritage from the Consequences of Climate Change

1 Facing the importance of the issue of protecting cultural heritage in terms of climate change at global level

The issue of the impact of climate change on cultural heritage was opened for the first time at the 29th session of the *Committee for World Cultural Heritage*, held in Durban, South Africa in 2005. A working group of experts was set up then. They had several tasks. These were to consider the nature and extent of risks, develop an appropriate strategic framework to assist individual Member States, as well as to prepare a report assessing the future impact of climate change on cultural heritage along with opportunities for risk management.

The following year, there was a meeting of experts at the headquarters of UNESCO in Paris, at which the preparations were made for the adoption of the *Report on Predicting and Managing the Effects of Climate Change on World Heritage* and the *Strategy to Assist States Parties to the Convention to Implement Appropriate Management Responses* (hereinafter: the *Strategy on the Impact of Climate Change on Cultural Heritage*).[160] At the 30th session of the *Committee for World Cultural Heritage* in Vilnius, Lithuania, in July 2006, an analysis of previously prepared documents was performed, and all States parties to the *Convention concerning the Protection of the World Cultural and Natural Heritage* were asked to carry out their implementation.

Strategy on the Impact of Climate Change on Cultural Heritage defines five goals and measures, in line with the *Hyogo Framework for Action 2005-2015*. These are primarily strengthening of national, regional and global initiatives to reduce the impact of climate change on cultural heritage, fostering the development of innovation and knowledge in this field to develop an adequate system of prevention, as well as identification, assessment and monitoring of risks of natural disasters, reducing such risks. Finally there should be a willingness to tackle existing and future challenges in the protection of cultural heritage.[161] After the adoption of this strategy in the city of Christchurch in New Zealand in 2007, there was presented the *Policy Document on Climate Change and World Heritage*. Additionally, some criteria for determining the status of most endangered natural and cultural properties were defined. They will not only serve to create the list of the most vulnerable world heritage,[162] but also help establish adequate

[160] Both documents are available on UNESCO's website: <http://whc.unesco.org/uploads/activities/documents/activity-474-1.pdf>.

[161] Rohit Jigyasu, *op. cit.*, p. 26-27.

[162] According to article 11, paragraph 4 of the *Convention Concerning the Protection of the World Cultural and Natural Heritage*, the list may include only such property, forming part of the cultural and natural heritage, that is threatened by serious and specific threats, such as the threat of disappearance caused by accelerated deterioration, large-scale public or private projects or rapid urban or tourist development projects; destruction caused by changes in the use or ownership of the land; major alterations due to unknown causes; abandonment for any reason whatsoever; outbreak or the threat of an armed conflict; calamities and cataclysms; serious fires, earthquakes, landslides; volcanic eruptions; changes in water level, floods and tidal waves. The Committee may at any time, in case of urgent need, make a new entry

protection measures and monitor adverse impacts. Otherwise, currently there are 55 properties of natural and cultural heritage on the list, which are exposed to various risks, in accordance with the provisions of the *Convention concerning the Protection of the World Cultural and Natural Heritage*. Among them are those exposed to risks from natural disasters.

In order to promote the importance of protecting cultural property in terms of climate change, UNESCO released a publication in 2008, with some case studies on the impact of extreme weather events on different sites of natural and cultural importance around the world.[163]

2 Risk management of cultural heritage

The role and objective of *Disaster Risk Management of Cultural Heritage* is to prevent or reduce the negative impact of natural phenomena on such property, especially on those registered on the World Heritage List. This includes consideration of all risks in a particular location and beyond, planning preventative measures, as well as activities in the recovery phase after natural disasters.

In the event of a natural disaster, it is always necessary to engage prepared and rehearsed teams. Usually they are made up of people in charge of coordination, finance, security, media relations, repairs and reconstruction of cultural heritage. All persons involved must first complete certain training and simulations, in order to check their operability and functionality. These teams must be well connected with the local police, fire department, health services and government authorities.[164] The backbone of all activities before, during and after a natural disaster is to preserve authenticity and universal value of cultural properties. Generally speaking, measures in cultural-heritage protection should enable an active approach with the recognition of certain traditional knowledge and skills.

The Risk Management Plan, which every State party to the *Convention concerning the Protection of the World Cultural and Natural Heritage*is obliged to prepare, is a clear, flexible and practical guidance for people who manage certain types of cultural property. The plan should be based on the identification and assessment of key risks to cultural property, as well as the risks to people's lives and their possession.[165] In this document "it is necessary to clearly specify the tools, techniques and strategies for the implementation of preventative measures, procedures in the event of an emergency, as well as solutions for

in the List of World Heritage in Danger and publicise such entry immediately. The *List of World Heritage in Danger* is available on UNESCO's website, and it currently enumerates 55 properties. See: <http://whc.unesco.org/en/danger/>.

[163] The publication *Case Studies on Climate Change and World Heritage* is available on UNESCO's website: <http://whc.unesco.org/en/activities/473/>.

[164] Svetlana Dimitrijević Marković, Milica Grozdanić, *op. cit.*, p. 259.

[165] Svetlana Dimitrijević Marković, Milica Grozdanić, *op. cit.*, p. 257.

the recovery of cultural heritage from disaster."[166] All these measures have to be taken into consideration in the planning of other legal, technical and administrative activities at local, regional and national levels. The Risk Management Plan itself is produced in different forms and contents depending on whom and for what purpose it is intended.[167] It shall be made in multiple identical copies, which are stored in multiple secure and easily accessible locations.

The evaluation of the measures taken in the aftermath of the disaster enables the audit of the Risk Management Plan with the aim of its improving, modification, and retention of some of the foreseen measures, in order to enable the elimination of the shortcomings of the existing system in case of any new disaster. Repairs and reconstruction of cultural property may last for years and exceed the resources available to the local community. Therefore these activities must be integrated into the national defence and recovery system, and financed from the appropriate dedicated funds and donations.[168]

3 Important international programmes and activities in the field of protecting cultural heritage from the consequences of climate change

In the field of cultural heritage protection, a series of activities take place in parallel; training and networking of experts with the aim of improving knowledge and methods to a more adequate response to risks inherent in natural disaster.

Climate change as a major threat to humanity had already been recognised by the *UN Framework Convention on Climate Change* in 1992, and later by the *Kyoto Protocol* of 1997, which represents an important step in limiting the emissions of six greenhouse gases.[169] This is why UNESCO cooperates with the Secretariat of the *UN Framework Convention on Climate Change* exchanging information on the special Conference and in the framework of joint bodies involved in the project SBSTA (*The Subsidiary Body for Scientific and Technological Advice*). This project involves an exchange of experts and study on the impact of climate change, the sensitivity of cultural property and the process of adapting to new circumstances.

In January 2005, in Kobe, Japan a world conference dedicated to protection from disasters took place (*UN-WCDR – World Conference on Disaster Reduction*). Within it, there was organised a special session on cultural heritage and risk management in the event of a disaster (*Disaster Risk Management of Cultural Heritage*). Thus cultural heritage was the theme of contemplation and discussions for the first time at a world conference dedicated to reducing the risks and

[166] *Ibid.*

[167] *Ibid.*

[168] Svetlana Dimitrijević Marković, Milica Grozdanić, *op. cit.*, p. 260.

[169] Tamara Gajinov, *Građanskopravna odgovornost za imisije i zaštita životne sredine*, Dosije, Beograd, 2016. p. 100.

consequences due to the effects of natural disasters. The Conference adopted a declaration, which emphasised a close relationship between the protection of heritage and socio-economic stability and sustainable development of society.[170] After that, within the International Conference on the Risks and Natural Disasters in Davos, the Executive Secretary of the Intergovernmental Forum on cooperation in the prevention and care of natural disasters and technological disasters (*EUR-OPA Major Hazard Agreement*)[171] organised the accompanying panel titled *Cultural Heritage and Risks – some European experience*.

One of the main conclusions of these meetings was the need for networking professionals who study the impact of climate change on cultural heritage, through organising educational programmes and training that would enable care for cultural heritage to become an integral component of plans that deal with risk management in emergency situations.[172]

In order to connect professionals who deal with these issues, UNESCO has together with the *Institute of Disaster Mitigation for Urban Cultural Heritage at Ritsumeikan University Kyoto,* in partnership with ICCROM (*International Centre for the Study of the Preservation and Restoration of Cultural Property*), ICOMOS (*International Council on Monuments and Sites*) and UNISDR (*United Nations Office for Disaster Risk Reduction*) begun to organise an international training programme related to the monitoring of the impacts of climate change on cultural heritage and risk management of natural disasters since 2006. The programme is intended for employees in the governmental and also non-governmental sector, universities and other experts in the field of cultural-heritage protection and crisis management.

The programme itself is a presentation of the various aspects related to the management of the risks to which cultural heritage is exposed in the event of natural disasters. The goal is to enable the participants to connect with each other, forming an international network of experts in this field, as well as to acquire some knowledge about the system of prevention. Participants are trained to create a risk management plan, which should be compatible with the general emergency plans. In addition, the objective of the programme is that the participants acquire basic knowledge about the measures for eliminating the consequences of large-scale natural disasters. The entire course includes lectures and visits to specific sites, workshops, discussions and team development of projects on different topics.[173]

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[170] Svetlana Dimitrijević Marković, Milica Grozdanić, *op. cit.*, p. 254.

[171] *EUR-OPA Major Hazard Agreement* represents a platform (based on *Resolution no. 87/2* of the Committee of Ministers of the Council of Europe), which in addition to research, exchange of information and technical dialogue, encourages the development and strengthening of legal and institutional frameworks of Member States to respond to major disasters. More about this Agreement: <http://www.coe.int/en/web/europarisks/about-us>.

[172] Svetlana Dimitrijević Marković, Milica Grozdanić, *op. cit.*, p. 254.

[173] *Ibid*.

In addition to this, UNESCO, together with the organisation ICCROM, as well as numerous other institutions, organises similar courses and programmes, with the aim of improving knowledge and profiling experts in this field. These have been held in Italy, Albania, Romania, Mexico, Myanmar, Egypt, Bulgaria and Malta.

4 The legal framework of actions at EU level

Since the 1980s, the European policy of cultural-heritage protection supports the principles of sustainable development; therefore cultural heritage is observed in the context of the climate and ecological environment. Since then, it is encouraged to connect the sector of conservation with the fields of economy, ecology, sociology, urban and regional development.

Considering the risks that threaten cultural heritage due to extreme weather conditions, the Council of Europe adopted *Recommendation no. R (88) 5 on control of physical deterioration of the architectural heritage accelerated by pollution.*[174] This document established the organisational and programmatic measures for the study of the degradation processes and the protection of materials exposed to the effects of various weather conditions and pollution.

Problems of degradation of cultural heritage due to pollution were discussed again a decade later. This time not only harmful consequences for architectural heritage were taken into consideration, but cultural heritage was defined in a wider and more comprehensive sense. Thanks to the *Recommendation. R (97) 2 on sustained care of the cultural heritage of the physical deterioration due to pollution and other similar factors*,[175] for the first time there was introduced the concept of risk management for the elimination and reduction of unfavourable climate conditions.[176]

The *Study of the European Parliament* from 2007 about the protection of cultural heritage in terms of natural disasters[177] defines several basic objectives of the Union, to mitigate the negative impact of natural phenomena on cultural heritage. Thus constant supervision and monitoring of cultural property will be carried out in the years coming, they will work on improving the system of planning and land use, promote awareness of the importance of cultural-heritage protection from the consequences of climate change, accompanied with

[174] *Recommendation no. R (88) 5 of the Committee of Ministers to member states n control of physical deterioration of the architectural heritage accelerated by pollution.*

[175] *Recommendation no. R (97) 2 of the Committee of Ministers to member states n sustained care of the cultural heritage against physical deterioration due to pollution and other similar factors.*

[176] Zorica Civrić, *Određivanje prilaza u procesu revitalizacije objekta industrijskog nasleđa u muzej sa aktivnom ulogom širenja znanja i kulture održivog razvoja*, available online: <https://bg.ac.rs/files/sr/studije/studije-uni/radovi/MasterRadZoricaCivric.pdf>.

[177] The study is available online: <http://www.europarl.europa.eu/activities/expert/eStudies.do?language=EN>.

organising training and workshops in this field. In addition, it is also set as a goal to affirm cooperation between states, enabling easier access to European funds from which to finance projects and programmes aimed at the adaptation of cultural heritage to climate change.

However, we should bear in mind that various natural disasters have their own specifics, and the differences among them are very significant in terms of preventative measures, the predictability of emergencies and subsequent recovery processes. For example, earthquakes are difficult to predict and are a natural phenomenon that happens quickly and suddenly. The area of the territory where damage to buildings may happen cannot be pre-determined exactly. In contrast, the occurrence of floods in large rivers can be determined with utmost precision. In addition, the growth level of a river after hours and days can even be determined with very accurate forecasts of potential inundation zones. Therefore, certain preventative actions can be taken during the flood itself.

Different characteristics of natural disasters require specific reactions, protection measures, with adequate human resources and infrastructure. These measures have to rely on good practices and experiences of certain non-European countries, first of all America, Japan and Taiwan. Among European countries, Switzerland has the best system of preventative measures to protect cultural heritage from natural disasters. Their protection programme includes detailed mapping, indicating and describing all cultural properties in urban and rural areas.

In most European countries the field of protection of cultural and natural heritage from the consequences of natural disasters is mostly marginal. These issues are mostly in the shade of environmental problems. The importance of cultural heritage is insufficiently articulated in the media. However, EU member states have relatively good capacities for response to natural disasters. They are based on close cooperation between the police, military and fire services, ready to act in emergency situations. This system is supported by adequate legal regulations at national level, in accordance with the principle of subsidiarity, since the area of defence against natural disasters is within the exclusive competence of the member states. Nevertheless, they are entitled to help from the European Union. In emergency situations they are obliged to cooperate and provide assistance to each other, and in certain cases they even provide assistance to other countries that are not members of the Union, as provided for in many legal acts.

Maps of potential natural hazards to cultural heritage do not cover the whole territory of the EU yet. In accordance with *Directive 2007/60 EC on the assessment and management of flood risks* there is an obligation to map flood zones.[178] It is necessary to complete the mapping of the entire territory of the Union, because it is essential for the establishment of strategies and measures for managing risks that threaten cultural heritage. Establishing a system of remote monitoring would significantly boost the application of preventative measures and provide

[178] *Directive 2007/60/EC on the Assessment and Management of Flood Risks.*

more operational activities in case of natural disasters. *Directive 2007/60 EC on the assessment and management of flood risks* is well structured and should serve as an example for the preparation of other acts of the Union related to the protection of cultural heritage from natural disasters.[179]

Access to protection of cultural heritage must be such that it is integrated into the system of protection against natural disasters. Currently these two systems of protection are not viewed as a whole or in connection with each other. In addition, the system of protection against natural disasters is quite heterogeneous, regulated at different levels within the legal instruments of the Union. Protection of cultural property is neither sufficiently integrated in security research, although cultural monuments are frequent targets of terrorist attacks. The results of such measures would be important for EU activities outside its borders, and for the protection of tourists from EU Member States. Even legal acts related to spatial and urban development generally do not contain provisions on the protection of cultural heritage, although the majority of cultural monuments is located just in the heart of urban areas.

The Civil Protection Mechanism was established at community level on the basis of *Council Decision 2001/792*,[180] which was revised by the *Decision 2007/779*.[181] These acts have ceased to count with the adoption of *Decision 1313/2013 on a Union Civil Protection Mechanism*.[182] This has created a system of measures to improve the coordination and mobilisation of emergency services to help a country hit by natural disaster. Mechanisms also apply to environmental protection, aid to the population and the protection of their property. The foreseen regulatory framework includes the protection of cultural heritage in the event of disasters caused by human activity, including natural disasters, sea pollution.[183]

The success and efficiency of operations in emergency situations depend largely on experience and lessons from the past. Extraordinary events are usually not repeated in the same place, not even in the same country in a given

[179] *Study of the European Parliament*, p. 40.

[180] *Council decision establishing a Community mechanism to facilitate reinforced cooperation in civil protection assistance interventions.*

[181] *Council decision establishing a Community Civil Protection Mechanism (recast).*

[182] *Decision 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism*. The mechanism of the Union should facilitate the mobilisation and coordination of intervention and help. It includes the work of the Emergency Response Coordination Centre (ERCC) and the Common Emergency Communication and Information System (CECIS), which would be managed by the Commission. The mechanism of the Union is aimed at strengthening cooperation between Member States to prevent and prepare for possible disasters, improve preparedness of the countries for more effective actions, as well as raising public awareness about the importance of disaster preparedness and timely response. In addition, it also foresees the exchange of knowledge, information, personnel and experts, encouraging various researches, implementation of programmes and projects for overall reduction of disasters caused by man-made or natural factors within the EU.

[183] See Article 3 of the *Decision 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism*.

short period of time. For this reason, joint interventions are particularly significant that are undertaken by international teams of people who have knowledge and experience. This contributes to making timely and correct decisions.

The inclusion of competent personnel and equipment for emergency response requires large funds. However, without these quality and well-coordinated joint actions cannot be implemented. There are plans to strengthen the implementation of preventative measures on cross-border, transnational and interregional level, through various European structural funds. These are related to the procurement of the necessary equipment, infrastructure development, transnational assistance plans and mapping potential risks. Funds for these activities were fixed at €368,428,000, for the period from 2014 to 2020.[184] Annual appropriations are determined by the European Parliament and the Council within the multi-annual financial framework.[185]

In the coming years, greater attention should be given to amending certain legal acts of the Union to include the issue of cultural-heritage protection in the operation process in emergency situations. Risk maps, the creation of which is obligatory by *Directive 2007/60 EC on the assessment and management of flood risks*, should include a list of all cultural properties, including archaeological sites and cultural-historic units. Plans for emergency management shall also provide measures for the treatment of cultural heritage in affected territories. In accordance with the *Directive 2007/2/EC Establishing an Infrastructure for Spatial Information in the European Community* (*INSPIRE*),[186] Member States are obliged to make available all spatial data and information. It includes data on protected areas and potential risks. They should be supplemented with information on cultural heritage in specific places.

Cross-border cooperation in this field is not supported by the relevant legal acts at EU level. Assistance in emergency situations is based largely on the regime established through specific bilateral and multilateral agreements between specific member states. Such agreements were signed, for example, by the Czech Republic and Hungary. On the basis of these, rescue teams of a state have the approval for actions in the territory of the other state, based on a special, simplified regime. The cooperation includes exchange of information, joint training, use of aircraft and the like. A similar agreement was signed also between Bulgaria and Greece relating to cooperation in the event of forest fires.[187]

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[184] Article 19, paragraph 1 of the *Decision 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism*. The amount of €223,776,000 in current prices stems from Title 3 "Security and Citizenshi", and €144,652,000 in current prices from Title 4 "Global Europe".

[185] Article 19, paragraph 1 of the *Decision 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism*.

[186] *Directive 2007/2/EC Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)*.

[187] *Study of the European Parliament*, p. 50.

To date, EU member states have enacted a number of guidelines and national action plans designed to defend against extreme natural events or human actions.[188] However, they usually do not cover cultural heritage. Greece adopted a *National Plan to Combat Desertification* in 2003, in accordance with the *United Nations Convention to Combat Desertification,*[189] Annex IV of which relates to Mediterranean countries. This Action Plan includes the need to protect natural heritage, but not cultural property. A similar situation is with other EU countries, as for example Portugal, whose National Action Plan also did not take into account the protection of cultural heritage. By contrast, Italy's National Action Plan aimed at combating desertification from 1999 introduced measures relating to the protection of historical sites. It stresses the importance of research in this field and financial support through various projects.

Legal acts of the EU member states relating to flood protection mainly include issues of cultural-heritage protection as well. Italy, compared to other European countries, has the best system of mapping affected areas in danger, which was jointly developed by experts of the Department of Civil Protection and the Ministry of Culture. Mapping is a long process, because it includes all the historic sites, of which there are many in this country. Italy's experience in this area should be used by other EU Member States too. Slovakia also created maps encompassing all its national cultural treasures, including 52 medieval castles.[190]

In the EU countries there are different approaches to securing cultural heritage from natural disasters. Flood protection is not popular, and in some countries it is not even possible to safeguard properties in flood zones. Some studies have shown that the American protection system is far better, reducing federal assistance in case of natural disasters as much as ten times. To assist member states in the fight against natural disasters, a special solidarity fund was set up, which proved to be fast, efficient and flexible tool. However, some administrative barriers often hinder the implementation of this type of aid.

5 Important European projects and activities

Although the field of culture falls within the exclusive competence of the member states, the European Union and its authorities support cultural exchange. The field of culture is this way integrated into development programmes and projects of the Union. In connection with this, a series of activities is carried out with the aim of dealing with the consequences of increasingly frequent floods, landslides and other weather conditions that pose a threat, both to people's lives and their property, and to cultural heritage.

[188] *Study of the European Parliament*, p. 11.

[189] *United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, (UNCCD).*

[190] *Study of the European Parliament*, p. 10.

The European Commission supported the project *Noah's Ark* (*Global Climate Change Impact on Built Heritage and Cultural Landscapes*)[191] within the sixth *Framework Programme for Research and Development* for the period from 2004 to 2007, which has joined the main European scientific centres that investigate the protection of cultural heritage in terms of climate change, insurance and other private companies specialised in compensation for damages caused by natural cataclysms. All participants in the project were renowned experts who are engaged in the research of materials of which monuments are made, and also studying global climate conditions. After completion of the project, further research was continued in this area.

The Council of Europe has supported the work of the *European University Centre for Cultural Heritage* in Ravello, Italy and the organisation of courses on the impact of climate change on cultural heritage. In the implementation of this programme several prominent experts participated who were also involved in the project *Noah's Ark*. Similar problems were treated in the studies at the *Centre for Sustainable Heritage, University College London*.

The importance of the results of workshops should be noted, which were conducted within the project ARCCHIP (*Advanced Research Centre for Cultural Heritage Interdisciplinary Projects*). These represent a number of examples of good and bad practices of cultural-heritage protection in terms of climate change. Several projects were related to flood protection, such as the CHEF project, then German project DISFLOOD (*Disaster Information System for Large-scale Flood Events using Earth Observation*) specially dedicated to protection of urban areas, including a large number of cities with a rich culture and history. A number of European projects are aimed at mapping the areas threatened by the threat of natural disasters and at the development of cross-border cooperation for the prevention and elimination of their consequences.

Certain international organisations have adopted guidelines and action plans aimed at combating natural disasters. Some of the most important ones are the documents of organisations such as the Council of Europe, ICCROM, ICOM, IFLA (*International Federation of Library Associations and Institutions*). These in general do not contribute directly to international activities aimed at the protection of cultural heritage, but they may strengthen awareness of the importance of these issues and contribute to achieving more successful international cooperation.

As part of an international campaign entitled "Let's make my city resistant – My city is ready", organised by UNISDR (*The United Nations Office for Disaster Risk Reduction*) in Venice in March 2012, there was a conference whose main theme was adaptation of European cities to climate change. At the end of

[191] See more about this project in the report: <https://www.coe.int/t/dg4/majorhazards/activites/2009/Ravello15-16may09/Ravello_APCAT2008_44_Sabbioni-Jan09_EN.pdf>. The project, among others, involved: the Institute of Atmospheric Sciences and Climate – ISAC from Bologna, Centre for Sustainable Heritage, University College London, University of East Anglia, School of Environmental Sciences from Norwich, Corrosion and Metals Research Institute from Stockholm and many others.

the Conference under the title: *Building Cities Resilience to Disasters in Europe: Protecting Cultural Heritage and Adapting to Climate Change* was adopted *Venice Declaration*.[192] Its main objective is connecting local authorities within EU Member States for reducing the negative impacts of climate change on urban environment, with special emphasis on the preservation of cultural heritage.

6 The priorities of the European Union

In the coming years, it is necessary to continue with the creation of a common policy, institutional and legal framework of action in the field of protecting cultural heritage from the consequences of climate change in the EU. Moreover, member states' governments must show greater willingness to solve these problems within the framework of national policies and programmes. Priorities of the Union in coming years must involve the integration of measures of cultural-heritage protection within existing strategies and procedures, along with the reform of the current legal framework for a more efficient operation in emergency situations.

Lack of skilled personnel in the field of cultural-heritage protection and civil protection is certainly the result of lack of study programmes, education and training through which the personnel could acquire adequate knowledge in this field. Especially rare are those related to the specific problems to which the cultural heritage of a given area is exposed.[193] In some countries with a high-risk level of certain weather conditions, training for evacuation and response in case of natural disasters was introduced. These can be successfully adopted by the local population as well. In Italy, for example, there are courses in primary and secondary schools about responding in case of an earthquake. Response system in case of natural disasters should be part of educational programmes at all levels. Additional professional programmes in construction are essential for further progress, in order to acquire new knowledge related to improving the quality and resilience of reconstructed buildings after disasters. Additional training is also important for restorers and conservators.

The programmes and projects aimed at scientific and technological research in this field must be provided with sufficient resources from European funds. Such research should lead to new insights on the impact of natural disasters on various materials used in construction. On the basis of these, they would improve measures of monitoring and protecting cultural and historical buildings and sites. It is especially important for such studies to be multidisciplinary and include knowledge on climate change. Furthermore, it is necessary to work on raising public awareness of the importance of cultural heritage protection

[192] *Venice Declaration on Building Resilience at the Local Level towards Protected Cultural Heritage and Climate Change Adaptation Strategies*. The text of the Declaration is available on UNESCO's website: <http://whc.unesco.org/en/news/869>.

[193] *Study of the European Parliament*, p. 46.

and inclusion of local inhabitants in educational programmes and preparations for emergency situations. In the future, there are plans to work on establishing a modern database on natural hazards and disasters, then on the development of a system for monitoring changes in cultural heritage, as well as of standards for the assessment of the resistance of immovable architectural heritage to various adverse effects. It is particularly important to complete the already-begun process of mapping potential risks and digitisation of data about cultural heritage and potential risks.

7 Legal and strategic framework of protecting cultural heritage from the consequences of climate change in Serbia

Extreme weather conditions are more frequent occurrences in Serbia. In the next 100 years, according to experts on climate change, we can expect a smaller increase in temperature, frequent occurrences of floods, strong winds and natural disasters in this region.

In Serbia the National Sustainable Development Strategy was adopted in 2008, which established goals of economic, social, environmental and institutional development until 2017.[194] In the part of the work relating to the environment, it foresees a more active enforcement policy of climate protection and the fulfilment of obligations from international documents, as well as the development of action plans of adaptation for various economic sectors.[195]

In addition to the National Sustainable Development Strategy, there have been adopted certain sectoral strategies as well, and some other documents that are, among others, related to the use of natural resources and of environmental assets.[196] The Government of the Republic of Serbia adopted the proposal of the *Energetics Development Strategy until year 2025*,[197] which envisages an increase in electricity production from renewable sources, reducing emissions and increasing energy efficiency. However, the adoption of a strategy on adaptation to climate change, noted as an important task in the European Commission's *2016 Report on Serbia*, did not happen.[198] The ultimate goal of this strategy is to

[194] Tamara Gajinov, *op. cit.*, p. 259.

[195] About the status of the legal protection of the environment in Serbia see more: Zoltan Vig, Tamara Gajinov, *Stanje i perspektive ekološkopravne regulative u Srbiji*, Fakultet za evropske pravno-političke studije, Novi Sad, 2011.

[196] In addition to the *National Sustainable Development Strategy*, there were adopted certain sectoral strategies as well, such as the *Strategy of Agriculture and Rural Development of the Republic of Serbia (2014–2024)*, *Forestry Development Strategy* and others.

[197] The new *Energetics Development Strategy until year 2025* should replace the previous *Energetics Development Strategy until year 2015*.

[198] The text of the report is available on: <http://www.seio.gov.rs/upload/documents/eu_dokumenta/godisnji_izvestaji_ek_o_napretku/godisnji_izvestaj_16_eng.pdf>. Serbia is recommended to review the

target the Serbian economy to long-term sustainable development and to reduce emissions.[199]

The situation in the field of cultural-heritage protection is largely undefined, uncovered by relevant regulations, inconsistent with European and international conventions and charters, as well as with modern standards of the profession. In this area, therefore, the basic principles and measures of protection do not meet modern challenges, certainly including climate change.

The existing *Law on Cultural Property* was passed more than 20 years ago. Since then, there have been a number of changes in the international theory and practice. It is therefore necessary to adopt a new law and specific regulations that would relate to immovable cultural heritage, museums and art-historical works, archives, film archives, as well as to intangible cultural heritage. Of course, the adoption of these legal acts should be accompanied by the adoption of a strategy for conservation, protection and sustainable use of cultural heritage. The applicable laws relating to planning and construction must also be in accordance with the newly enacted regulations from the field of cultural-heritage protection.

In Serbia, the *Law on Emergency Situations*[200] is regulating the declaration and management of emergency situations, the system of protection and rescue of people, material and cultural properties, and the environment from natural disasters, technical-technological accidents and cataclysms, terrorism, war and other major accidents. This regulation prescribes the obligation of making plans for protection and rescue in emergency situations. Plans[201] are drawn up on the basis of previous vulnerability assessment, including the identification of sources of risk, overview of possible consequences, needs and possibilities of implementing protection and rescue from natural and other disasters. In any case, the vulnerability assessment must include measures for the protection of human and material resources and the environment, as well as of cultural herit-

framework of its policy in the field of energy and climate by 2030. See more about this: Dragoljub Todić, Aleksandar Macura, *Radna grupa, životna sredina, analise i preporuke*, Evropski pokret u Srbiji, Beograd, 2014.

[199] See more about this: Zoltan Vig, Tamara Gajinov, *Stanje i perspektive ekološkopravne regulative u Srbiji*, Fakultet za evropske pravno-političke studije, Novi Sad, 2011. p. 128-138.

[200] *Law on Emergency Situations (Official Gazette of the Republic of Serbia,* no. 111/2009, 92/2011, 93/2012.).

[201] In addition to the National Plan of Protection and Rescue in Emergency Situations, it is foreseen to have such plans for the territory of the autonomous province and of local governments, which must comply with the National Plan. The Government, on the basis of threat assessments of the Republic of Serbia, determines the types of natural disasters and technological accidents and hazards for which to make plans, and it determines the state authorities to take part in the development of these plans. More detailed regulations on the content and the method of preparing plans for protection and rescue in emergency situations are adopted by the Government. In the preparation of the National Plan for the Protection and Rescue in Emergency Situations there participate ministries and other bodies in the parts that are related to their field of work, which send their proposals to the Ministry for preparing the draft proposal of the National Plan for the Protection and Rescue in Emergency Situations in the Republic of Serbia.

age, which is not expressly dealt with in the provisions of the *Law on Emergency Situations*.[202]

On the basis of the *Law on Emergency Situations* there was adopted the *National Strategy for Protection and Rescue in Emergency Situations*.[203] This document presents the basic shortcomings of the protection and rescue system in Serbia. These are primarily inadequate implementation of preventative measures, and the lack of conditions for consistent application of regulations. The protection and rescue system of Serbia has numerous material and technical deficiencies as well, outdated and unreliable equipment, tools and vehicles. It is necessary to improve coordination between the entities of this sector, cooperation with NGOs and the private sector, to strengthen the capacities of local authorities, particularly in the field of prevention. Objectives for the next ten-year period included setting up a strong institutional base and facilitating information flow. The strategy should provide more efficient and effective systems of protection and rescue through the strategic areas that are aligned with the *Hyogo Framework for Action*.

The long-term vision of spatial development in Serbia is defined by the *Spatial Plan of the Republic of Serbia* (hereinafter: *Spatial Plan*),[204] which is also an integral part of the *Law on Planning and Construction*.[205] The *Spatial Plan* sets five basic goals, including the protection and sustainable use of cultural heritage and natural resources. This will form the basis of the identity of Serbia and its regional units, and the future economic and tourism development. The *Spatial Plan* until 2020 point out that natural and cultural heritage is to be safeguarded, maintained and used in accordance with European standards. This involves the implementation of the *European Landscape Convention* from Florence,[206] other European and international conventions on the protection of cultural heritage, conventions and declarations related to biodiversity and natural subsystems.

The variety, quality and continuous improvement of categorised and previously protected natural and cultural properties, as well as of those on the World Heritage List, arenot recognised as a development resource in Serbia. The *Spatial Plan* highlights the need to adopt a strategy that would be exclusively for the protection of cultural heritage. The main problems in this area are the following: illegal construction, absence of inter-regional connectivity, outdated

[202] See article 46 of the *Law on Emergency Situations*.

[203] *National Strategy for Protection and Rescue in Emergency Situations (Official Gazette of the Republic of Serbia,* no. 86/2011).

[204] *Law on Spatial Planning (Official Gazette of the Republic of Serbia,* no. 88/2010.).

[205] *Law on Planning and Construction (Official Gazette of the Republic of Serbia* no. 72/2009, 81/2009 – correction, 64/2010-CC, 24/2011, 121/2012, 42/2013 – decision of CC, 50/2013 – decision of CC, 98/2013 – decision of CC, 132/2014 and 145/2014).

[206] *European Landscape Convention*. This Convention was adopted in Florence in 2000, and is implemented from 2004. The text of the Convention with the appropriate supporting documents is available at: <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=09000016802f80c6>.

regulations, cross-sectoral mismatch in the approach to planning and protection of cultural heritage, the unresolved status of Kosovo and the vulnerability of the most valuable cultural monuments in that area.

The introduction of EU norms and standards was set for one of the goals of sustainable spatial development in Serbia that will ensure quality and contemporary approach to managing risks from natural disasters. Adaptation to climate change is an important factor for sustainable development of certain sectors of the economy and overall economic development. However, it was noted that strengthening institutional capacity in this area goes slowly. There is a lack of sufficient funds for a comprehensive multidisciplinary study on the impact of climate change on individual sectors of the economy.

Particularly significant steps on the path of improving the system of protecting cultural heritage in terms of climate change lie in prevention. Serbia is included in a special programme of preventative conservation for museums of South East Europe as part of a wider project called *Revitalisation of Cultural and Natural Heritage in South East Europe*.[207] This programme is designed as a series of workshops on preventative conservation and its application in museum practice. The first workshop was dedicated to the protection of cultural heritage in emergency situations and it was held in Banja Luka. Its main purpose was to contribute to a better understanding of the risks that natural disasters can cause, and to contribute to the exchange of knowledge about efficient models of managing cultural heritage.

A programme of professional practice on similar topics was also organised by the Institute for Protection of Cultural Monuments for fourth-year students of the Faculty of Security in May 2016. During this programme, there were lectures on various topics, among which were those dedicated to the protection of immovable cultural assets in areas hit by earthquakes, fire and floods.

Beside these programmes, we should mention the pilot project B-Care (*Balkan Cultural Aid Response for Emergencies*)[208] implemented by the Centre for Urban Development in cooperation with the organisation *Cultural Heritage without Borders* from Albania. The project is funded by the *Prince Claus* Foundation from the Netherlands with the aim of drawing attention to the problems of cultural-heritage protection in emergencies, such as floods, earthquakes, landslides and so on. Within the project it will be constructed a digital map of risks, while a brief brochure for emergency situations has already been prepared. The project involved the organisation of training for volunteers. The list of trained people who may be contacted for assistance can be found on the site of B-Care.

The digital map will include immovable cultural property of exceptional importance in Serbia and Albania, which are threatened by floods, earthquakes,

[207] The organisers of the programme are: ICOM Bosnia and Herzegovina by the Regional Alliance of ICOM for Southeast Europe, the Central Institute for Conservation from Belgrade and the Museum of Contemporary Arts of the Republika Srpska.

[208] More about this project is available on the website of the Centre for Urban Development: <http://centarzaurbanirazvoj.com/b-care/>.

landslides, fires and avalanches. This map will serve all institutions involved in the protection of cultural property, as well as other institutions and individuals in the event of natural disasters. Moreover, the mapping will help the planning and implementation of preventative measures of protection.

A short brochure[209] was produced within the project, which contains useful tips on preventative actions for more efficient protection. Some of them are: creating contact lists of institutions of assistance in emergency situations in a particular area, then making a list of inventory if there is not already a record of inventory or locality, collecting and storing photos of a certain locality or cultural monument. In addition, it is advisable to draw up a list of priorities, which will be based on the importance of cultural property, or on its artistic, historical values, as well as its exposure to risks. Such a list will facilitate the setting of priorities for evacuation, rescue or later restoration. The brochure also states that it is useful to make a list of equipment that is available in a particular institution, or on the site of an emergency situation.

Emergency management in Serbia requires a more modern approach. A policy to combat climate change has been a long-neglected public policy. In the absence of strategic documents[210] it is difficult to find answers to the challenges of climate change and create long-term public policy in this field. The situation is similar with the protection of cultural heritage. This area also lacks an important strategic document, which would determine the future directions of its sustainable use and protection from increasingly frequent natural disasters.

Except for a few mentioned projects and activities, Serbia has still not recognised the link between the sector for emergency situations and the need to protect cultural property; therefore it is a priority of the coming period to establish institutional cooperation and to set targets for further joint actions.

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[209] The brochure is available on: <http://sinergija.me/wp-content/uploads/2016/03/B-CARE-Quick-Reference-Brochure-SRB.pdf>.

[210] "Development of a strategy to combat climate change was initiated in 2012 when the Department of Climate Change of the responsible ministry prepared the documentation for the project *Development of the Strategy to Combat Climate Change with the Action Plan*, which was to be financed by IPA 2012. At the request of the EU Delegation it was agreed to transfer the project to the budget for year 2014, and it was defined that the project would begin in September 2015. Finally, the public was informed that the implementation of the project of developing the Strategy to Combat Climate Change with the Action Plan had started in September 2016 and that the project leader was a German consulting company GFA Consulting Group. The Ministry of Agriculture and Environment is responsible for the realisation of this project on behalf of the Republic of Serbia, and the project is financed by the European Union. The implementation of the project began with the initial conference, held in the Serbian Chamber of Commerce on 13 September 2016."(Mirko Popović, *Može li Strategija borbe protiv klimatskih promena da doprinese ustanovljavanju politike niske emisije ugljen-dioksida u Srbiji?* Source: *Beogradska otvorena škola, Pregovori o pregovorima*:<http://eupregovori.bos.rs/progovori-o-pregovorima/analize/1463/2016/10/11/moze-li-strategija-borbe-protiv-klimatskih-promena-da-doprinese-ustanovljavanju-politike-niske-emisije-ugljen-dioksida-u-srbiji.html>, visited on 20.11.2016.

The Future of Protecting Cultural Heritage and Urban Areas in Terms of Climate Change

1 Challenges of protecting cultural heritage in terms of climate change

In general terms, the protection of cultural heritage requires a modern and integrated approach. This implies the adaptation of protection measures to extreme weather conditions and more frequent natural disasters. Adaptation requires actions at national, regional and global levels. The approach to protecting cultural heritage must be such that it is integrated into the defence system against natural disasters. These two systems of protection are currently not functioning this way.

Within the European Union it is necessary to further strengthen the system of emergency response. Currently it is quite heterogeneous, regulated by different legal acts. In addition, future adaptation policies of member states, but also of the European Union itself need to give more space to the protection of cultural property in the event of natural disasters.

The initiative to analyse the impact of climate change on cultural heritage came from Great Britain, and then the interest in these issues spread to other countries of Europe. The project Noah's Ark, which also represents the first major research project in this field, has given significant results and forecasts about the impact of climatic factors and pollution on historical materials and constructions in Europe. This research has also helped in improving practices through the development and use of computer models in testing the impact of heat and humidity on historic buildings. Prediction developed through this model enabled comparison with real data. In addition to this, there were funded some other projects aimed at understanding the impact of climate change on cultural heritage. They combine challenging scientific research and knowledge in the field of crisis management, training, policy initiatives, and the need for responsible behaviour of each individual that enhances adaptable skills of the whole society. Only such a cross-sectoral approach enables achieving significant results in the process of adaptation.

In the coming years, it is necessary to proceed with the creation of a common policy, along with building solid institutional and legal framework of the Union for a more efficient operation in the field of cultural-heritage protection from the consequences of climate change. This requires significant funds to support the various programmes and projects, cooperation between states, for promoting scientific and technological research.

The extreme events so far have shown that "cultural aspects" of public policies are often inadequate and inappropriate.[211] It is very difficult to reconcile the interests of protecting cultural identity and heritage with the principles of adaptation, because some losses are irrecoverable. Sometimes it is necessary to relocate certain cultural properties, when the circumstances allow it, changing their visual identity, in order to protect them from risks. In some cases it is very

[211] W. Neil Adger, Jon Barnett, Katrina Brown, Nadine Marshall, Karen O'Brien, *Cultural dimensions of climate change impacts and adaptation, Nature climate change*, vol 3, February 2013, p.115.

difficult to foresee all of the potential risks, to determine the goals of adaptation economically and rationally, taking into account the importance of cultural identity.

The cultural aspects of adaptation policies to climate change should not be ignored, so that adaptation could give expected results and enable the protection of cultural identity and heritage of the affected area in the right manner. The recommendations of organisations such as UNESCO or the Council of Europe have shown that the identified specific climatic parameters and the related specific risks should be considered in mutual dependence.[212] Cultural heritage is a reflection of social identity and social cohesion. Therefore, the answer to the challenges of climate change should combine physical, cultural, social, financial, tourist and other potentials of cultural heritage, as well as all the risk factors.

Adaptation requires a multidimensional understanding of the impact of climate change on cultural heritage. Therefore, all decisions and measures taken to mitigate their effects depend both on knowledge in the fields of social sciences and arts, and knowledge about technology innovations and engineering. Furthermore, protection measures always involve certain practical and craft skills.

2 Climate change and a new concept of architecture in urban areas

Architecture has always faced urban problems, so it is necessary to adapt modern design and construction to the concept of sustainable development.[213] This means that "some new forms should be found that will not only save the population from climate exodus, but also continue in keeping the fragile balance of several cities."[214] Architectural design has paid special attention to global warming, climate change and sustainable development. Still in recent decades, it has evolved from design for saving energy into sustainable architectural design.[215]

One of the possible solutions in response to sea level rise is the floating city. This concept of 21st century urbanism represents an alternative to traditional life in case of major climate change.[216] The second, also quite unrealistic, solution is

[212] May Cassar, *Impact of Climate Change on Cultural Heritage, from International Policy to Action*, Source: <http://www.getty.edu/conservation/publications_resources/newsletters/26_1/impact.html>, visited on 01.12.2016.

[213] Ljiljana Blagojević, Dragana Ćorović, *Klimatske promene i estetika savremene arhitekture*, in: *Uticaj klimatskih promena na planiranje i projektovanje* (ed. Vladan Đokić, Zoran Lazović), Arhitektonski fakultet, Beograd, 2011, p. 25.

[214] Predrag Mihajlović, *Uticaj klimatskih promena na arhitekturu gradova*, *Zbornik radova sa 4. međunarodne konferencije savremena dostignuća u građevinarstvu 2016*, Građevinski fakultet, Subotica, 2016., p. 950.

[215] Ljiljana Blagojević, Dragana Ćorović, *op. cit.*, p. 25.

[216] *Ibid*.

the so-called *floating dome*. There is also *Green Float*, the solution of the Japanese company Shimizu, which represents a city, each module of which could accommodate about 50,000 inhabitants, being developed on the ocean. Each module is made up of a base of 2 km in diameter and of a tower called *City in the sky*. Otherwise, *Green Float* project is a vision of a city with negative emissions of carbon dioxide – a networked series of non-transparent floating cells that do not produce CO2 and whose population is completely self-sufficient.[217] In addition to these solutions, we should mention the *Lilypad* project of architect Vincent Kalba, which presents an ecological island ready to accommodate about 50,000 climate refugees.[218] In the Netherlands, where almost half of the territory is below sea level, they design houses on water. These are sufficiently flexible and they can tolerate sea level rises of up to 5 metres.

The new architecture of cities is significantly different from traditional models. It is entirely inspired by ecological priorities, such as economy, efficiency, minimal consumption and sustainability, in accordance with the challenges of climate change. At the same time, environmental issues have a deep ethical and philosophical character, so ensuring survival and adaptation suggests inevitable changes in the culture of life. This creates a so-called "high civilisation" that includes everything necessary for physical, aesthetic and creative satisfaction of people, with sufficient flexibility for the necessary adaptation to unpredictable weather conditions.[219]

The interests of environmental protection were crucial to the transformation of urban landscape and human settlements. Cooperation between architects and engineers of landscape architecture is inevitable in this process, as well as permanent participation of the community in the generation and implementation of these projects. It certainly leads to the formation of "new urban experiences, functions and activities".[220] The interdependence of nature and architecture results in the creation of new urban areas and essentially different concepts of life, adapted to the new environmental challenges.

3 The future of spatial development, natural disaster management and sustainable use of cultural heritage in Serbia

The *Spatial Plan* of Serbia is based on harmonised environmental, economic, social and institutional development. This means better and sustainable ways of exploiting territorial capital and competitive advantages in all areas in the long run. They are composed of biodiversity, rich and valuable

[217] *Ibid*.

[218] Predrag Mihajlović, *op. cit*. p. 943.

[219] Ljiljana Blagojević, Dragana Ćorović, *op. cit*., p. 30.

[220] Predrag Mihajlović, *op. cit*., p. 945.

cultural and natural heritage, as well as various and attractive landscapes of Serbia.

Serbia joined the project *European Cultural Routes*, which began in 1987 at the initiative of the Parliamentary Assembly of the Council of Europe. The aim of this project is, among other things, the revival of local and regional cultural heritage for further development of cultural tourism. This can stimulate new economic growth.

The *Programme of implementation of the Spatial Plan of the Republic of Serbia for the period from 2011 to 2015* prescribes the accelerated revision and adoption of decisions on the categorisation of certain cultural properties. It is necessary to work on new nominations to the World Heritage List as well. In July 2016, medieval tombstones "stećaks" were enrolled to this list.[221] The nomination dossier *Stećci – medieval tombstones* was created by experts from Bosnia and Herzegovina, Croatia, Montenegro and Serbia in the framework of an international project, as a serial nomination of 30 *necropoles* and 4100 *"stećaks"*.

During the debate of the UNESCO World Heritage Committee held in Istanbul, amendments relating to the recommendations of the Member States concerning the protection of the "stećaks" from climate change, urbanisation and other impacts were accepted. They also made recommendations on maintaining a protection zone (buffer zone) and so on.[222] In September 2016, the first operative meeting of the Intergovernmental Coordination Committee (ICC) for the implementation of the *Management Plan of Stećaks* was held. This body was formed with the aim of preserving the "stećaks", developing partnerships with organisations such as UNESCO, WHC (*World Heritage Centre*), ICOMOS, ICCROM, ICOM, in order to exchange knowledge, conducting the monitoring of conservation procedures, determining needs, approaches and goals of archaeological research projects, and ways of presenting findings.

Up to now, there have already been prepared a specific, so-called 'preliminary' list of cultural and historical monuments, including the monastery of Manasija, the Roman archaeological site Justiniana Prima, Smederevo Fortress, Bač with its surroundings, Negotin's cellars. This list was extended with the

[221] "Stećaks" can be found in the western parts of Serbia and Montenegro, as well as in the central and southern parts of Croatia and in Bosnia and Herzegovina. It is assumed that they had occurred in the second half of the 12th century, while most of them were made during the 14th and 15th centuries. There have been recorded about 70,000 "stećaks" in 3,300 localities so far, in a territory covered by the World Heritage List of UNESCO. "Stećaks" are made of limestone, the most common type of stone in this region. According to their forms, these tombstones are divided into five basic types with variations. These include: slabs, chests, gabled tombstones, cruciform tombstones and pillars/obelisks. Decorative motifs are: social and religious symbols (different forms of crosses, tools, weapons, crescent moon and stars, anthropomorphic lilies, solar motifs...), figurative representations (drawings of men and women, animals, fights, tournaments, hunting, parades of people – funeral wagon) and various floral and geometric designs. Source: *Politika*: <http://www.politika.rs/scc/clanak/367432/Marke-sa-motivima-muzejskih-eksponata>.

[222] Source: Seecult: <http://www.seecult.org/vest/stecci-na-listi-svetske-bastine>, visited on 06.12. 2016.

Roman Limes on the Danube in 2015.[223] Since the Limes (border defence works on the edge of the Roman Empire) in Great Britain and Germany have already been enrolled on the World Heritage List, an initiative was launched to enrol on this list all the properties called the *Frontier of the Roman Empire from the Black Forest to the Black Sea*. This has in practice involved Serbia in the transnational action for serial nomination of the Limes of the Roman Empire.

Beside the above mentioned activity, the *Programme of implementation of the Spatial Plan of the Republic of Serbia for the period from 2011 to 2015* as a strategic plan prescribes the definition and regulation of infrastructure and roads for the Raška and Morava trail of Serbian medieval culture, as well as the planning, presentation and management of Roman sites in Niš and Mediana. It is also planned to create a further one, in addition to the existing 25 spatial plans for areas with special purpose on the territory of Serbia, which group includes territories where protected natural[224] and cultural properties are located as of 2011.

When it comes to the protection of immovable cultural heritage from the impact of extreme weather events, it is particularly important to develop and adopt management plans for cultural monuments that are on the World Heritage List. The main goal of these plans is to ensure effective protection and improve the importance of World Heritage areas through a comprehensive management mechanism. Management plans identify everything that is important for a cultural monument, as well as challenges that threaten its quality, and measures of protection and conservation. These include all actions that reduce the risks of natural disasters. In Serbia the most emphasised disasters are floods, seismic risks and excessive emissions in certain areas.

The *Programme of implementation of the Spatial Plan of the Republic of Serbia for the period from 2011 to 2015* makes a priority of establishing operational,

[223] Documentation for the Danube Limes in Serbia was prepared within the project *Danube Limes Brand* supported by the European Commission, with the aim of expanding the World Heritage List with more existing properties of the Roman Limes from the territory of the Danube Region. The partners in the *Danube Limes Brand* project started their cooperation in October 2012. The lead partner of this project was the Institute of History, University of Vienna in Austria, which coordinated the work of the partners from eight countries. Beside Austria, the project involved Slovakia, Hungary, Italy, Romania, Bulgaria and Croatia. Serbia was represented by the Archaeological Institute in Belgrade. The project was completed in late 2014. From Serbia, experts of the Republic Institute for Protection of Cultural Monuments – Belgrade, territorially competent institutes for protection of cultural monuments and museums were involved in the three-year implementation of the project. See more about this project on the website of the Republic Institute for Protection of Cultural Monuments: <http://www.heritage.gov.rs/latinica/radovi_i_aktivnosti_rimski_limes_u_srbiji_na_preliminarnoj_listi_svetske_bastine.php>, visited on 07.12.2016.

[224] About protected natural areas see more: Zoltan Vig, Tamara Gajinov, *Legal regulation of protected areas according to the law on protection of nature*, in: Aleksić N. (ed.) *Environmental protection of urban and suburban settlements*, Ecological movement of the city of Novi Sad, Novi Sad, 2009, p. 367-375. See also: Zoltan Vig, Tamara Gajinov, *Pravni koncept zaštićenih područja, postupak njihovog proglašavanja i zaštite prema novom Zakonu o zaštiti prirode, Pravo, teorija i praksa* 1/2009, p. 56-67.

research and communication-and-information functions at the *National Centre for Climate Change*. This is a *sub-regional centre for climate change*[225] for South Eastern Europe, helping implement projects under the Sub-regional Framework Plan for Adaptation for South East Europe. In 2011, Serbia adopted the *National Plan of Protection and Rescue in Emergency Situations*, but is waiting for approval of a law on protection from natural disasters in line with EU standards. It is vital to strengthen the administrative, institutional, technical and professional capacities in this area. Draft legislation[226] is awaiting adoption. It stresses preventative measures and work to reduce risks from natural and other disasters, effective response and recovery. These all help normalise life in an affected area after a disaster. According to experts, preventative work failed during the major floods in Serbia in 2014, at all of local, provincial, and national level.[227]

The *draft law on reducing the risk from natural and other disasters and emergency management* foresees the establishment of a Directorate for disaster risk reduction and disaster management, which should be formed by merging the *Office for assistance and rehabilitation of flooded areas* of the Serbian Government and the *Sector for Emergency Situations* in the Ministry of the Interior. Adoption of the draft would rank Serbia among the leading countries in Europe in quality and compliance of regulations with best-of-category international standards, i.e. with the *Sendai Framework for Disaster Risk Reduction 2015-2030*.

It is also important to raise public awareness of the importance of renewable energy sources. Other strategic priorities will be developing climate monitoring systems, spatial databases and information on local and regional climate change, including information on extreme events and disasters and vulnerabilities in certain regions.

After major floods in Serbia in 2014, the *Sector for Emergency Situations* under the auspices of the Ministry of Defense mapped risks of floods, forest fires, landslides and earthquakes. However, mapping areas threatened by water and wind erosion again is crucial. This was last done over 40 years ago.

In general, the sustainable use of cultural heritage and its protection requires significant financial investment in Serbia. Many countries are working on encouraging the development of private-public partnerships in this area, which would significantly reduce costs. Institutions and organisations in the

[225] This centre was established at the 6th Ministerial Conference "Environment for Europe". It is composed of ministers and heads of delegations from 51 countries of the UNECE region (which includes countries from Europe, Caucasus countries, the USA and Canada). By forming sub-regional virtual climate change centres, as well as by accepting the so-called Belgrade initiative to strengthen regional cooperation in Southeast Europe in the field of climate change, tribute was paid to Serbia and scientist Milutin Milanković.

[226] See: *The draft law on reducing the risk from natural and other disasters and emergency management*: <http://www.policijskisindikatsrbije.org.rs/izdvajamo/1180-zakon-o-smanjenju-rizika-od-elementarnih-i-drugih-nepogoda-i-upravljanju-vanrednim-situacijama>, visited on 09.12.2016.

[227] Marić: *Akcenat na preventivi elementarnih nepogoda*: <http://rs.n1info.com/a135806/Vesti/Vesti/Akcenat-na-preventivi-elementarnih-nepogoda.html>, visited on 09.12.2016.

field of culture are encouraged to model themselves on market entities and to create attractive programmes with good business plans. On the other hand, legal entities and individuals are encouraged to support these programmes and invest in culture.[228]

The value and importance of cultural heritage is not recognised sufficiently in our society. When integrating international acts relating to cultural heritage into national legislation, it's helpful to follow those developed European countries that have achieved high levels of international cooperation in this area. The priorities are the adoption of a national strategy on cultural development, as well as of a number of new regulations in this area.

Existing strategies give marginal attention to the protection of cultural heritage. Thus, in the *National Sustainable Development Strategy of the Republic of Serbia for the period 2007-2017*,[229] protection of cultural heritage is not classified as a primary goal. Nor does the *Strategy of Regional Development of the Republic of Serbia* include cultural heritage among its regional-development aims. This underlines how cultural heritage is insufficiently recognised by other sectors, and underrepresented in strategic documents on sustainable development in Serbia.

Protecting cultural heritage requires perseverance and patience. This is a multidisciplinary challenge entailing complex processes. Adequate legislation and strategic acts are necessary to enable a planned approach, and to provide more recognition of culture in society. Decentralisation, balanced cultural development in all parts of Serbia, digitisation and ongoing education are all parts of this. Encouraging the development of cultural property management and international cooperation in this field come high on the list. These are preconditions for protection of cultural heritage to respond to modern-day challenges, such as more frequent extreme weather events caused by climate change.

[228] Maša Vukanović, *Pogled na kulturu, Zakoni i praske u Srbiji i pet država članica Evropske unije*, Zavod za proučavanje kulturnog razvitka, Beograd, 2011, p. 31.

[229] *National Sustainable Development Strategy* (*Official Gazette of the Republic of Serbia* no. 57/2008.).

PART II

Zaštita nepokretnih kulturnih dobara u uslovima klimatskih promena

Pravni i strateški okviri prilagođavanja

Uvodne napomene

Monografija *Zaštita nepokretnih kulturnih dobara u uslovima klimatskih promena – pravni i strateški okvir prilagođavanja* rezultat je istraživanja obavljenog na Fakultetu pravnih i političkih nauka Univerziteta u Segedinu u okviru programa akademske mobilnosti (Civil Society Scholar Awards – CSSA za 2016/2017. godinu) uz podršku Fondacije za otvoreno društvo. Sprovedena studija ukazuje na složenost i aktuelnost pitanja zaštite nepokretnog kulturnog nasleđa u uslovima klimatskih promena koja još uvek nisu u dovoljnoj meri prepoznata u pravnim i strateškim dokumentima donetim na nacionalnom, nadnacionalnom i međunarodnom nivou. Otuda je cilj autora bio da široj javnosti skrenu pažnju na značaj ove problematike stavljaući je u kontekst aktuelne politike adaptacije i osnovnih principa održivog razvoja.

U monografiji je dat sveobuhvatan prikaz međunarodnih i nacionalnih aktivnosti i mera koje promovišu značaj zaštite kulturnog nasleđa i njenog horizontalnog povezivanja sa oblastima zaštite životne sredine, prostornog planiranja i pitanjima upravljanja rizicima u vanrednim situacijama. Intersektorski pristup stvara uslove za celishodnije delovanje, a ujedno čini i osnov za kreiranje javnih politika i adekvatne regulative u ovoj oblasti. Kroz kritički osvrt na trenutni pravni i strateški okvir date su smernice delovanja sa ciljem smanjenja štetnih klimatskih uticaja na stanje kulturnih dobara u svetu i kod nas. Ovakve težnje ostvarive su kroz podsticanje međunarodne saradnje, jačanje institucionalnih kapaciteta, kreiranje adekvatnih studijskih programa i podršku naučnotehnološkim inovacijama.

Generalno, buduće javne politike adaptacije moraju dati veći prostor pitanju zaštite kulturnih dobara. Na taj način se podiže njihov kvalitet i kapaciteti sa ciljem očuvanja važnih društvenih vrednosti u uslovima savremenih izazova i sve češćih ekstremnih vremenskih prilika.

U svetu se beleži stalni porast interesovanja za kulturnu baštinu različitih naroda koja predstavlja deo njihovog identiteta i istorije.[1] Kroz dela kulture i umetnosti dolazi do prožimanja prostora, vremena i ljudi.[2] Ove oblasti u tesnoj su vezi sa različitim socijalnim, ekonomskim i političkim činiocima. Zaštita kulturnih dobara neodvojiva je od pitanja društvenog i održivog razvoja. Očuvanje kulturnih tekovina i vrednosti zato predstavlja jednu od važnih funkcija državne vlasti, delatnosti stručnih i naučnih institucija, ali i obavezu svakog pojedinca.[3]

Kulturna dobra danas su izložena različitim rizicima. Među najvećim, svakako su ratovi i drugi oružani sukobi, vandalizam pojedinaca i grupa. Nagla urbanizacija, migracije, prenaseljenost određenih oblasti, industrijalizacija,

[1] Jelena Vilus, *Pravna zaštita kulturnih dobara*, Evropski centar za mir i razvoj Univerziteta za mir Ujedinjenih nacija, Beograd, 2007., str. 6.

[2] Snežana V. Antonijević, *Mogućnosti unapređenja zaštite i očuvanja srpske nacionalne baštine prostora Metohije na početku 21. veka*, Doktorska disertacija odbranjena na Fakultetu za bezbednost Univerziteta u Beogradu 2013. godine, str. 4.

[3] *Ibidem*.

takođe predstavljaju pretnju po mnoge spomenike kulture i arhitektonska zdanja od posebnog društveno-istorijskog značaja. Svakako i prirodni uticaji, poput poplava, klizišta i zemljotresa, mogu ugroziti integritet i vrednosti koje poseduju određena kulturna dobra.[4] Prema nekim istraživanjima, čak 76% svetske kulturne baštine izloženo je nekom obliku prirodne opasnosti.[5] U uslovima klimatskih promena, prirodne kataklizme su sve češća pojava.

Iako prirodne nepogode uglavnom nije moguće kontrolisati, niti izbeći, postoje određene mere pomoću kojih je moguće smanjiti osetljivost kulturnih dobara na ovakve činioce. Efikasna i delotvorna zaštita podrazumeva i dobro poznavanje osnovnih karakteristika jednog kulturnog dobra, kao i procenu njihove osetljivosti na različite spoljne uticaje. Prepoznavanje adaptivnih kapaciteta društva pokazalo se kao neophodan uslov za kreiranje i sprovođenje efikasnih strategija prilagođavanja.[6] Razvoj nauke i novih tehnologija otvorio je nove mogućnosti za delotvorne intervencije na materijalima i konstrukcijama.[7] Poslednjih decenija se posebno insistira na preventivnoj zaštiti. Konkretno, kada je reč o zaštiti spomenika kulture u kontekstu klimatskih promenama, to pre svega znači borbu za čistije prirodno okruženje i svođenje štetnih antropogenih faktora na razumnu meru, ali i brojne druge preventivne radnje zaštite kulturno-istorijskih tekovina. Naravno, ukoliko pod uticajem prirodnog događaja do štete ipak dođe, posebnim tehnikama restauracije i konzervacije kulturnom dobru se uvek nastoji povratiti stari izgled i vrednost.

Važan instrument u sprovođenju pomenutih ciljeva, svakako, predstavlja i adekvatna pravna regulativa, koja mora podržati proces adaptacije na klimatske promene i osnovne principe održivog razvoja. Pravna zaštite kulturnih dobara od posledica klimatskih promena predstavlja još uvek nedovoljno istraženu oblast. Uz to, bavljenje ovim pitanjima podrazumeva celovit pristup i povezivanje više pravnih oblasti, ali i brojnih vanpravnih disciplina.

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4 Svetlana Dimitrijević Marković, Milica Grozdanić, *Upoznavanje sa strategijom upravljanja rizicima po kulturno nasleđe u slučaju katastrofa, Nasleđe*, br. 12/2011., str. 253.

5 Rohit Jigyasu, *Challenges and Opportunities for Disaster Risk Management of Cultural Heritage against Floods, ICOMOS – Hefte des Deutschen Nationalkomitees*, br. 60/2015., str. 25.

6 Mila Pucar, *Energetski aspekti razvoja naselja i klimatske promene – Stanje, mogućnosti, strategije i zakonska regulativa u Srbiji*, u: *Klimatske promene i izgrađeni prostor: Politika i praksa u Škotskoj i Srbiji*, (ur. Mila Pucar, Branka Dimitrijević, Igor Marić), Institut za arhitekturu i urbanizam Srbije (IAUS), Beograd, 2013., str. 68.

7 Ivo Marojević, *Koncept održivog razvoja u zaštiti kulturne baštine, Socijalna ekologija*, Zagreb, br. 4/2001., str. 235.

Pojam, klasifikacija i kategorizacija kulturnih dobara

1 Spomenik, kulturno dobro, kulturna baština, kulturna baština čovečanstva

Danas ne postoje univerzalna i opšte prihvaćena pojmovna određenja za *kulturno dobro* i *kulturnu baštinu*. To se odražava se i na oblast prava koje se bavi njihovom zaštitom. S tim u vezi, u pogledu određivanja kruga dobara koja se podvode pod pojam kulturnih dobara, mogu se uočiti tri pristupa. Prvi podrazumeva navođenje opštih karakteristika koje određeno dobro treba da ispuni da bi se smatralo „kulturnim". Drugi metod podrazumeva nabrajanje pojedinih kategorija kulturnih dobara. Treći (mešoviti) predstavlja kombinaciju prethodna dva. Tako, po pravilu, svaki akt nacionalnog, nadnacionalnog ili međunarodnog prava sadrži sopstvenu definiciju pojma *kulturne baštine* i *kulturnog dobra* koja je prilagođena predmetu i svrsi dotičnog propisa.[8] Istovremeno, date definicije predstavljaju i odraz ekonomskih, socijalnih i kulturnih prilika u kojima je određen pravni akt donet.

U domaćim izvorima prava starijeg datuma retko se sreću pojmovi *kulturna baština* i *kulturno dobro* jer su oni odraz novijih tendencija u oblasti zaštite *kulturnih dobara*. Pre toga su se obično koristili termini, kao što su *spomenik* ili *spomenik kulture*,[9] odnosno *starina*.[10] Ipak, ovi pojmovi još uvek nisu potpuno iščezli. U tom smislu se govori i o formiranju posebne mešovite grane prava – *spomeničkom pravu* koje sadrži elemente više različitih grana prava, kao što su upravno, građansko, krivičnog, međunarodno javno i međunarodno privatno pravo.[11]

Pojam *kulturnog dobra* je kod nas uveden *Zakonom o zaštiti kulturnih dobara* SR Srbije iz 1977. godine.[12] Prema ovom Propisu, pod pojmom *kulturnog dobra* podrazumevaju se nepokretnosti i druge stvari od posebnog kulturnog i istorijskog značaja.[13] Tu spadaju spomenici kulture, prostorne kulturno-istorijske celine, arheološka nalazišta, znamenita mesta kao nepokretna kulturna dobra, odnosno, umetnička dela i istorijski predmeti, arhivska građa, filmska građa, stara i retka knjiga, kao pokretna kulturna dobra.[14]

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8 *Ibidem*.

9 U Narodnoj Republici Srbiji je 1948. godine donet *Zakon o zaštiti spomenika kulture i prirodnih retkosti* (*Službeni glasnik Narodne Republike Srbije* br. 54/1948). Spomenicima kulture, prema ovom Zakonu, smatrani su pokretni i nepokretni predmeti ili zbirke predmeta od istorijskog, arheološkog, kulturno-istorijskog, umetničkog, etnografskog ili sociološkog značaja.

10 U Srbiji je pod nemačkom okupacijom, za vreme Drugog svetskog rata, doneta *Uredba o čuvanju starina* (*Službene novine* br. 212/1941.).

11 O nastanku i razvoju spomeničkog prava kao zasebne grane prava videti više: Vladimir Brguljan, *Spomeničko pravo*, Republički zavod za zaštitu spomenika kulture, Beograd, 2006., str. 9-17.

12 *Zakon o zaštiti kulturnih dobara* (*Službeni glasnik SR Srbije* br. 28/1977, 34/1981, 47/1987).

13 Član 1, stav 1 *Zakona o zaštiti kulturnih dobara* SR Srbije.

14 Član 1, stav 2 *Zakona o zaštiti kulturnih dobara* SR Srbije.

Važećim *Zakonom o kulturnim dobrima*,[15] donetim još 1994. godine, *kulturna dobra* definisana su kao stvari i tvorevine materijalne i duhovne kulture od opšteg interesa koje uživaju posebnu zaštitu. Nadalje, u ovom Zakonu su pobrojane sve vrste nepokretnih i pokretnih kulturnih dobara, na isti način kako je to učinjeno i *Zakonom o zaštiti kulturnih dobara* SR Srbije. Praktično, prema određenju prihvaćenom u našem *Zakonu o kulturnim dobrima*, da bi jedno dobro bilo određeno kao kulturno, potrebno je da se prema opisu svrsta u jednu vrstu kulturnih dobara, odnosno da poseduje određena propisana svojstva i karakteristike. To znači, da je na osnovu *Zakona o kulturnim dobrima*, prihvaćen mešoviti pristup pri određenju pojma kulturnog dobra. Pa tako, uz opšte karakteristike koje je potrebno da zadovolji jedno dobro, ono mora da se uklopi i u određenu zakonom predviđenu kategoriju kulturnih dobara.

Na međunarodnom nivou, zahvaljujući *Haškoj konvenciji o zaštiti kulturnih dobara u slučaju oružanih sukoba* iz 1954. godine,[16] usvojenoj pod okriljem Organizacije Ujedinjenih nacija za obrazovanje, nauku i kulturu (u daljem tekstu: UNESCO), uveden je pojam *cultural property*. On bi se doslovce mogao prevesti kao *kulturna imovina*, odnosno *kulturno dobro*. S obzirom da je doneta nakon Drugog svetskog rata, ovom Konvencijom se, pre svega, pruža zaštita materijalnim *kulturnim dobarima* od ratnih dejstava. Prema definiciji datoj u ovom Dokumentu, u *kulturna dobra*, nezavisno od porekla i sopstvenika, ubrajaju se: pokretna ili nepokretna dobra, koja su od velikog značaja za kulturnu baštinu jednog naroda, kao: spomenici arhitekture, umetnosti ili istorije, verski ili laički, arheološka mesta, skup građevina koje su kao celina od istorijskog ili umetničkog interesa, umetnička dela, rukopisi, knjige i drugi predmeti umetničkog, istorijskog ili arheološkog značaja, kao i naučne kolekcije i važne kolekcije knjiga, arhiva ili reprodukcija navedenih dobara.[17] U *kulturna dobra* (u slučaju oružanog sukoba) ubrajaju se i objekti u kojima se izlažu i čuvaju sva pomenuta kulturna dobra, kao što su muzeji, velike biblioteke, arheološka skladišta, kao i skladišta u kojima se vrši sklapanje kulturnih dobara,[18] potom centri u kojima se nalazi značajan broj kulturnih dobara, kao i centri u kojima se sakupljaju kulturni spomenici.[19]

Pojedini teoretičari kritikuju upotrebu engleskog izraza *cultural property* koji je korišćen u tekstu ove Konvencije, smatrajući da se njegovom upotrebom

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[15] *Zakon o kulturnim dobrima* (*Službeni glasnik Republike Srbije*, br. 71/94, 52/2011-dr. zakoni i 99/2011-dr. zakon).

[16] *Convention for the Protection of Cultural Property in the Event of Armed Conflict*(kod nas je ova Konvencija ratifikovana i objavljena u *Službenom listu FNRJ*, br. 4/56).

[17] Videti član 1, stav 1, tačka a) *Haške konvencije o zaštiti kulturnih dobara u slučaju oružanih sukoba*. Tekst Konvencije na srpskom jeziku dostupan na: <http://www.kultura.gov.rs/docs/stranice/8212841888949986592 7/7.%20Konvencija%20za%20zastitu%20kulturnih%20dobara%20u%20slucaju%20oruzanih%20sukoba(%20Hag,%201954).pdf>, posećeno 11.08.2016.

[18] Član 1, stav 1, tačka b) *Haške konvencije o zaštiti kulturnih dobara u slučaju oružanih sukoba*.

[19] Član 1, stav 1, tačka v) *Haške konvencije o zaštiti kulturnih dobara u slučaju oružanih sukoba*.

„prenaglašava komercijalna vrednost *kulturnog dobra*".[20] Time se praktično daje primat pojedinačnim interesima vlasnika nekog kulturnog dobra nad opštim interesima, kakvi su njegova zaštita i očuvanje. Uz to se smatra da termin *cultural property* ne obuhvata sve vidove nematerijalne *kulturne baštine*. Zbog toga je prisutna težnja da se termin *cultural property* zameni terminom *cultural heritage*, odnosno (kod nas) pojmom *kulturna baština*. Na taj način se, prema mišljenju pojedinih stručnjaka, naglašava činjenica da *kulturna baština* nije obična imovina.[21]

U našem jeziku izraz *kulturno dobro* nema konotaciju koja se u engleskom jeziku povezuje sa terminom *property*. Kroz termin *kulturno dobro* istovremeno se ističe značaj širih društvenih interesa, ali pri tome ne isključuje ni pravo korišćenja, na koje ima vlasnik takvog dobra. Uz to je izraz *kulturno dobro* semantički dovoljno širok i apstraktan da može da obuhvati, pored pokretnih i nepokretnih materijalnih objekata, i nematerijalnu baštinu.[22]

U *Haškoj konvenciji o zaštiti kulturnih dobara u slučaju oružanih sukoba* je, pored termina *kulturno dobro*, korišćen i termin *kulturna baština*. Ipak, on se pominje na svega nekoliko mesta. Praktično se, tek u *Konvenciji o zaštiti svetske kulturne i prirodne baštine*[23] iz 1972. godine, termin *kulturna baština* pojavljuje kao centralni pojam.[24] Nakon toga, ovaj izraz se sreće i u drugim pravnim aktima, nastalim pod okriljem organizacije UNESCO, kao što su *Konvencija o zaštiti podvodne kulturne baštine*[25] iz 2001. godine, ili *Konvencija o zaštiti nematerijalne kulturne baštine*[26] iz 2003. godine.

Sam pojam *kulturne baštine* je veoma širok. Podrazumeva ukupnost dostignuća koja su nam ostavili preci u domenu književnosti, likovne umetnosti,

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[20] Tripimir M. Šošić, Pojam kulturne baštine – međunarodnopravni pogled, *Zbornik radova Pravnog fakulteta u Splitu*, br. 4/2014., str. 836-837. Autor se prevashodno poziva na stavove profesora, kao što su Lyndel- Prott i Patrick O'Keefe (Lyndel V. Prott, Patrick J. O'Keefe, *„Cultural Heritage" or „Cultural Property"?*, *International Journal of Cultural Property*, br. 1 /1992., str. 307-320.).

[21] Lyndel V. Prott, Patrick J. O'Keefe, *op.cit.*, str. 310.

[22] Tripimir M. Šošić, *op.cit.*, str. 838.

[23] *Convention Concerning the Protection of the World Cultural and Natural Heritage* (kod nas je ova Konvencija ratifikovana i objavljena u *Službenom listu SFRJ – međunarodni ugovori*, br. 56/1974).

[24] Prema članu 1 ove *Konvencije*, pod kulturnom baštinom podrazumevaju se: *spomenici*: dela arhitekture, monumentalna vajarska ili slikarska dela, elementi ili strukture arheološkog karaktera, natpisi, većina i grupe elemenata koje imaju izuzetnu univerzalnu vrednost sa istorijskog, umetničkog ili naučnog gledišta; potom *grupna zdanja*: grupe izolovanih ili povezanih građevina, koje po svojoj arhitekturi, jedinstvu i uklopljenosti u pejsaž predstavljaju izuzetnu univerzalnu vrednost sa istorijske, umetničke ili naučne tačke gledišta; *znamenita mesta*: dela ljudskih ruku ili kombinovana dela ljudskih ruku i prirode, kao i zone, uključujući tu arheološka nalazišta koja su od izuzetnog univerzalnog značaja sa istorijske, estetske i etnološke ili antropološke tačke gledišta.

[25] *Convention on the Protection of the Underwater Cultural Heritage* (ovu Konvenciju naša zemlja nije ratifikovala).

[26] *Convention for the Safeguarding of the Intangible Cultural Heritage* (kod nas je ova Konvencija ratifikovana i objavljena u *Službenom glasniku Republike Srbije – međunarodni ugovori*, br. 1/2010.).

arhitekture, muzike, pozorišta, filma, nauke i u drugim oblastima koji zajednički čine ukupnost kulture jednog naroda.[27] Prema nekim autorima, *kulturna baština* se shvata još šire, kao manifestacija ljudskog života i odraz određenog pogleda na život.[28] Generalno govoreći, pojam *kulturne baštine* predstavlja dinamičnu kategoriju koja se vezuje za određene društvene prilike i aktuelnu svest društva. Samim tim, ovaj pojam se neprestano razvija i menja, pri čemu mu se stalno pripisuju nova značenja i vrednosti.[29]

Izraz *kulturna baština* ukazuje na dobra trajne vrednosti koje je sadašnje društvo nasledilo od ranijih generacija, što uključuje i obavezu očuvanja takvih dobara za naredne generacije. Uz to, pojam *kulturne baštine* odnosi se na kulturne vrednosti materijalne i nematerijalne prirode koje prevazilaze nacionalne okvire, i imaju značaj za celokupno čovečanstvo. Tako, pojam *kulturne baštine* odražava temeljna društvena dostignuća koja predstavljaju važan element identiteta užih i širih ljudskih zajednica. *Kulturna baština* je sa pojavom država poslužila kao važan faktor u izgradnji sopstvenog nacionalnog identiteta.

Kao što je već pomenuto, izraz *kulturna baština* obuhvata ne samo materijalna kulturna dobra, već i duhovno nasleđe. Prihvatanjem ovog pojma podržana je potreba zaštite različitih običaja, verskih rituala, muzike, plesova, kao i drugih oblika duhovnog stvaralaštva. Ipak, tek je donošenjem *Konvencije o očuvanju nematerijalnog kulturnog nasleđa*[30] 2003. godine, definisan pojam *nematerijalne kulturne baštine*,[31] i stvoreni mehanizmi međunarodne zaštite različitih manifestacija ljudske kulture i duhovnog stvaralaštva.

Naša zemlja ratifikovala je *Konvenciju o očuvanju nematerijalnog kulturnog nasleđa*. Pri prevodu pojma *heritage* nije korišćen izraz *baština*, kao pri ratifi-

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[27] Marasović Tomislav, *Kulturna baština*, sveska I, Split, 2001., str. 9. navedeno prema Tripimir M. Šošić, *op.cit.*, str. 833.

[28] Lyndel V. Prott, Patrick J. O'Keefe, *„Cultural Heritage" or „Cultural Property"?*, *op.cit.*, str. 307.

[29] Tripimir M. Šošić, *op.cit.*, str. 834.

[30] *Convention for the Safeguarding of the Intangible Cultural Heritage*. Konvencija je kod nas ratifikovana kao i *Zakon o potvrđivanju Konvencije o očuvanju nematerijalnog kulturnog nasleđa* (*Službeni glasnik Republike Srbije – Međunarodni ugovori*, br. 1/2010.).

[31] U članu 2, stav 1, tačka 1 ove *Konvencije* nematerijalno *kulturno nasleđe* je označeno kao: praksa, prikazi, izrazi, znanja, veštine, kao i instrumenti, predmeti, artifakti i kulturne prostori koji su s njima povezani – koje zajednice, grupe i, u pojedinim slučajevima, pojedinci, prepoznaju kao deo svog kulturnog nasleđa. Ovakvo nematerijalno kulturno nasleđe, koje se prenosi s generacije na generaciju, iznova stvaraju zajednice i grupe, u zavisnosti od njihovog okruženja, interakcije sa prirodom i istorije, pružajući osećaj identiteta i kontinuiteta, i na taj način promovišući izvesno poštovanje, prema kulturnoj raznolikosti i ljudskoj kreativnosti. Za potrebe ove Konvencije, jedino će se uzimati u obzir ono nematerijalno kulturno nasleđe, koje je u skladu sa važećim međunarodnim pravnim instrumentima iz oblasti ljudskih prava, kao i sa potrebom uzajamnog poštovanja zajednica, grupa i pojedinaca, ali i održivog razvoja. Nadalje se u tački 2, istog stava navodi da se nematerijalno kulturno nasleđe ispoljava u sledećim oblastima: „usmenim tradicijama i izrazima i jeziku kao nosiocu nematerijalnog kulturnog nasleđa; (b) izvođačkim umetnostima; (v) društvenim običajima, ritualima i svečanim događajima; (g) znanjima i običajima koji se tiču prirode i svemira; (d) veštinama vezanim za tradicionalne zanate."

kaciji *Konvencije o zaštiti svetske kulturne i prirodnebaštine*, nego *nasleđe*. Srbija je tako postala „jedna od retkih, ako ne i jedina država na svetu koja za isti pojam, iz dve povezane konvencije, zvanično upotrebljava različite termine, koji u srpskom jeziku imaju slično značenje, ali ne predstavljaju potpune sinonime."[32] Pojedini autori smatraju termin *baština* adekvatnim, a kao razlog za njegovo naknadno odbacivanje navode određene političke promene, a ne argumentovane naučne stavove. Uz to, termin *nasleđe* ocenjuju kao neprimeren.[33] Prema drugima, pak, izraz *baština* tretira se kao stari i zaboravljen pojam, koji se koristi pod uticajem „novog nacionalnog osvešćenja" (krajem devedesetih godina XX veka i u prvim godinama XXI veka), a koji je pri tom u suprotnosti sa međunarodnim pravom. Ipak, mora se primetiti da izraz *baština* više odgovara engleskom pojmu *heritage*. Pri tome je, za razliku od termina *inheritance*, širi i ukazuje na nasleđivanje tradicije, odnosno nematerijalnih vrednosti koje se prenose sa jedne generacije na drugu.

Kulturnu baštinu treba razlikovati od *prirodne baštine* koja ne predstavlja proizvod ljudskog rada i delovanja, nego se odnosi na prirodne fenomene.[34] Samim tim, u kulturnu baštinu ne spadaju špilje, minerali, paleontološki ostaci i sl.[35] Za razliku od toga, vrtovi, parkovi i slični objekti, kao delovi prirode koji nastali zahvaljujući ljudskom radu, ubrajaju se u *kulturnu baštinu*.[36] Inače, često je teško povući jasnu granicu između *prirodne* i *kulturnebaštine* jer je čovek u neprestanoj vezi sa prirodom koju stalno oblikuje i prilagođava svojim potrebama.

Zbog činjenice da kulturna baština prevazilazi nacionalne okvire i predstavlja univerzalnu vrednost, sve češće se koristi i sintagma *zajednička baština čovečanstva*. Vezuje se za iskorišćavanje prirodnih bogatstava dubokog podmorja i Meseca.[37] U pravnim aktima organizacije UNESCO nije direktno pomenuta, ali se ipak u preambuli *Haške konvencije o zaštiti kulturnih dobara u slučaju oružanih sukoba* navodi da je „čuvanje kulturnog nasleđa od velike važnosti za sve narode sveta i da je važno osigurati ovom nasleđu međunarodnu zaštitu."[38] Uz to se ističe da je šteta naneta kulturnim dobrima, ma kom narodu ona pripadala, predstavlja štetu za celo čovečanstvo.[39] Nadalje se, i u samoj definiciji kultur-

[32] Vladimir Krivošejev, *Nasleđivanje baštine ili baštinjenje nasleđa?*, *Etnoantropološki problemi*, br. 2/2015., str. 428.

[33] *Ibidem*.

[34] U smislu člana 2 *Konvencije o zaštiti svetske kulturnebaštine*, pod *prirodnom baštinom* podrazumevaju se: spomenici prirode koji se sastoje od fizičkih ili bioloških formacija ili skupina tih formacija, a koji imaju izuzetnu univerzalnu vrednost sa estetske ili naučne tačke gledišta; geološke i fiziografske formacije i tačno određene zone koje predstavljaju habitat ugroženih vrsta životinja i biljaka od izuzetne univerzalne vrednosti sa naučne i konzervatorske tačke gledišta; znamenita mesta prirode ili tačno određene prirodne zone koje imaju izuzetnu univerzalnu vrednost sa tačke gledišta nauke, konzerviranja ili prirodnih lepota.

[35] Tripimir M. Šošić, *op.cit.*, str. 842.

[36] *Ibidem*.

[37] Tripimir M. Šošić, *op.cit.*, str. 853.

[38] Videti alineju 3 ove Konvencije.

[39] Videti alineju 2 Konvencije.

nog dobra, datog u ovoj Konvenciji, navodi da je reč o pokretnim i nepokretnim dobrima koja su od velikoj značaja za kulturnu baštinu svakog naroda.[40] Slično, i u preambuli *Konvencije o zaštiti svetske kulturne i prirodnebaštine* se navodi da oštećenje ili nestanak svakog primerka kulturne ili prirodne baštine osiromašuje baštinu svih naroda sveta. Takođe, u članu 6 iste Konvencije naglašeno je da *kulturna i prirodna baština* imaju univerzalnu vrednost na čijoj zaštiti treba da sarađuje čitava međunarodna zajednica. Ipak, neki objekt određen kao deo *kulturne baštine čovečanstva*, naročito ako se radi o nepokretnim kulturnim dobrima, pripada državi na čijoj teritoriji se nalazi, te ne može biti izuzet od njenog suvereniteta i ne dira u vlasnička prava uređena nacionalnim zakonodavstvom.

Praktično, u ovoj oblasti ne možemo govoriti o zabrani prava prisvajanja koji važi u oblasti prava mora i svemirskog prava.[41] Iz toga razloga, postoje predlozi da se u oblasti zaštite *kulturne baštine*, zabrana prisvajanja zameni načelom, prema kojem korišćenje kulturnih dobara ne sme biti isključivo. Generalno, zaštita kulturnih dobara više ne predstavlja isključivu „unutrašnju stvar" država, nego se radi o preduzimanju određenih obaveza koje su u interesu čitavog čovečanstva. Ipak, takve činjenice potrebno je precizirati aktima međunarodnog karaktera, jer koncept *kulturne baštine čovečanstva* još uvek nije u dovoljnoj meri pravno izgrađen.[42]

2 Kategorizacija kulturnih dobara

Svako kulturno dobro, bez obzira na vrstu, ima određenu kategoriju. Prema odredbama *Zakona o kulturnim dobrima*, kulturna dobra se spram značaja razvrstavaju u tri kategorije: *kulturna dobra*, *kulturna dobra od velikog značaja* i *kulturna dobra od izuzetnog značaja*.

U pogledu određivanja kruga dobara koja se smatraju kulturnim važi princip formalnosti, što znači da ono kao takvo mora biti određeno *Zakonom o kulturnim dobrima*. Izuzetak od ovog pravila odnosi se na pokretna kulturna dobra koja su poverena ustanovama zaštite jer se ona *ex lege* smatraju kulturnim dobrima. Ipak, pretpostavlja se da postoje stvari i tvorevine koje poseduju zakonom propisana svojstva, ali nisu utvrđena za *kulturna dobra* i kao takva registrovana, niti se čuvaju u ustanovama kulture. Za njih važi princip *prethodne zaštite* jer imaju svojstva od posebnog značaja za kulturu, umetnost i istoriju.[43]

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[40] Član 1, stav 1, tačka a) Konvencije.

[41] Tripimir M. Šošić, *op.cit.*, str. 857.

[42] Tripimir M. Šošić, *op.cit.*, str. 859.

[43] Prema podacima Ministarstva kulture i informisanja, u *Centralni registar nepokretnih kulturnih dobara* upisano je 2.306 nepokretnih kulturnih dobara: 2.023 spomenika kulture, 66 prostornih kulturno-istorijskih celina, 151 arheološko nalazište i 66 znamenitih mesta. Izvor: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>. Od 200 spomenika, koji imaju najviši stepen zaštite, 10 spomenika kulture se nalazi na UNESCO listi svetske baštine, i to 8 srednjovekovnih srpskih manastira

Kulturna dobra i *dobra koja uživaju prethodnu zaštitu* se ne smeju oštetiti, uništiti, niti im se može bez saglasnosti, u skladu s odredbama *Zakona o kulturnim dobrima*, menjati izgled, svojstvo ili namena.[44] *Kulturno dobra* i *dobra koje uživaju prethodnu zaštitu* ne smeju se izvoziti u inostranstvo, ako pomenutim Zakonom nije drukčije određeno. Sva dobra koja *uživaju prethodnu zaštitu*, a nalazi se u zemlji ili vodi, ili su izvađena iz zemlje ili vode, su državnoj svojini.[45]

Kulturno dobro od izuzetnog značaja[46] jeste ono koje ima neku od sledećih karakteristika: 1) ima poseban značaj za društveni, istorijski i kulturni razvoj naroda u nacionalnoj istoriji, odnosno za razvoj njegovog prirodnog okruženja; 2) svedoči o presudnim istorijskim događajima i ličnostima i njihovom delovanju u nacionalnoj istoriji; 3) predstavlja jedinstvene (raritetne) primerke stvaralaštva svog vremena ili jedinstvene primerke iz istorije prirode; 4) ima veliki uticaj na razvoj društva, kulture, tehnike i nauke; 5) poseduje izuzetnu umetničku ili estetsku vrednost.[47]

Da bi se neko kulturno dobro moglo smatrati *kulturnim dobrom od velikog značaja*[48] potrebno je da: 1) bude značajno za određeno područje ili razdoblje; 2) svedoči o društvenim ili prirodnim pojavama, odnosno uslovima društveno-ekonomskog i kulturno-istorijskog razvoja u određenim razdobljima; 3) svedoči o značajnim događajima i istaknutim ličnostima iz nacionalne istorije.[49]

Listu kulturnih dobara od izuzetnog značaja utvrđuje Narodna skupština, bez obzira da li se radi o pokretnim ili nepokretnim kulturnim dobrima.[50] Listu *nepokretnih kulturnih dobara od velikog značaja* i *nepokretnih kulturnih dobra* utvr-

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i crkava, od kojih četiri na teritoriji opštine Novi Pazar, četiri na Kosovu, zatim srednjovekovni grad Ras, kao i arheološko nalazište Feliks Romulijana u Gamzigradu, kod Zaječara. Pored toga, sastavljena je i tzv. preliminarna lista kulturno-istorijskih spomenika, na kojoj su manastir Manasija, rimsko arheološko nalazište Caričin grad, Smederevska tvrđava, Bač sa okolinom i Negotinske pivnice, kao i rimski limes na Dunavu. Od jula 2016. godine stečci su upisani na UNESCO listu kulturne baštine. Projekat međudržavne serijske nominacije stećaka za upis realizovali su stručnjaci iz Bosne i Hercegovine, Hrvatske, Crne Gore i Srbije. Projekat je počeo 2009. godine, kada su ministri kulture četiri države potpisali pismo namere. Odluka o upisu na Listu svetske baštine je doneta 15. jula 2016. godine. Na Listi se nalazi 28 srednjovekovnih grobalja sa stećcima (20 u Bosni i Hercegovini, dva u Hrvatskoj, tri u Crnoj Gori i tri u Srbiji). U Republici Srbiji projekat je vodio Republički zavod za zaštitu spomenika kulture – Beograd.

44 Član 7 *Zakona o kulturnim dobrima*.

45 Član 12 *Zakona o kulturnim dobrima*.

46 Prema podacima Ministarstva kulture i informisanja, kao *kulturno dobro od izuzetnog značaja* kategorisano je 155 spomenika kulture, 11 prostornih kulturno-istorijskih celina, 18 arheoloških nalazišta i 16 znamenitih mesta. Izvor: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>.

47 Član 5, stav 1, tačke 1-5 *Zakona kulturnim dobrima*.

48 Status *kulturnog dobra od velikog značaja* u Srbiji je proglašeno 512 spomenika kulture, 28 prostornih kulturno-istorijskih celina, 25 arheoloških nalazišta i 17 znamenitih mesta. Izvor: <http://www.kultura.gov.rs/lat/zastita-kulturnog-nasledja/kulturna-dobra>.

49 Član 5, stav 2, tačke 1-3 *Zakona kulturnim dobrima*.

50 Član 56, stav 1 *Zakona kulturnim dobrima*.

đuje Vlada Republike Srbije.[51] Za razliku od toga, nadležnost za utvrđivanje liste pokretnih kulturnih dobara velikog značaja zavisi od njihove vrste. Pokretna kulturna dobra od velikog značaja utvrđuju nadležne ustanove kulture,[52] dok ona preostala, najniže kategorije, utvrđuju nadležne područne ustanove.[53]

Od kategorizacije kulturnih dobara, između ostalog, zavisi i nadležnost za utvrđivanje uslova za preduzimanje tehničke zaštite, pod kojima se podrazumevaju radovi na konzerviranju, restauriranju, rekonstrukciji, revitalizaciji i prezentaciji kulturnih dobara.[54] Radovi se izvode samo uz prethodno utvrđene uslove i pribavljenu saglasnost na projekat[55] i dokumentaciju.[56] Ovakve aktivnosti mogu da sprovode ustanove zaštite i druga pravna lica, kao i preduzetnici koji poseduju odgovarajući stručni kadar i opremu.[57] *Zakonom o kulturnim dobrima* predviđeno da prostorni i urbanistički planovi treba da sadrže uslove čuvanja, održavanja i korišćenja *kulturnih dobara*, kao i *dobara koja uživaju prethodnu zaštitu*.[58] Takođe, posebni uslovi propisani su i za premeštaj nepokretnih kulturnih dobara na novu lokaciju.[59] Sva pomenuta pravila imaju poseban značaj kada su u pitanju sve češće elementarne nepogode u uslovima klimatskih promena.

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[51] Član 56, stav 2 *Zakona kulturnim dobrima*. Ustanova zaštite svoje predloge za utvrđivanje liste nepokretnih kulturnih dobara od velikog značaja dostavlja Republičkom zavodu za zaštitu spomenika kulture. Objedinjene predloge za utvrđivanje liste nepokretnih kulturnih dobara od velikog značaja, Republički zavod za zaštitu spomenika kulture dostavlja ministarstvu nadležnom za poslove kulture, radi upućivanja Vladi Republike Srbije.

[52] To su: Narodni muzej u Beogradu, Arhiv Srbije, Narodna biblioteka Srbije i Jugoslovenska kinoteka, u skladu sa članom 56, stav 3 *Zakona kulturnim dobrima*.

[53] Shodno članu 49, stav 1 *Zakona kulturnim dobrima* to su: muzeji, arhivi, kinoteke, biblioteke čije je osnivač Republika, autonomna pokrajina, grad ili opština.

[54] Videti članove 100 i 101 *Zakona kulturnim dobrima*.

[55] Saglasnost na projekte i dokumentaciju za izvođenje radova na nepokretnim kulturnim dobrima i kulturnim dobrima od velikog značaja daje nadležni zavod za zaštitu spomenika kulture, a za kulturna dobra od izuzetnog značaja, Republički zavod za zaštitu spomenika kulture. Na projekte i dokumentaciju za izvođenje radova, koje izrađuje nadležni zavod za zaštitu spomenika kulture, saglasnost daje Republički zavod za zaštitu spomenika kulture. Na projekte i dokumentaciju za izvođenje radova koje izrađuje Republički zavod za zaštitu spomenika kulture, saglasnost daje ministarstvo nadležno za poslove kulture.

[56] Uslove za preduzimanje mera tehničke zaštite i drugih radova ne nepokretnim kulturnim dobrima i kulturnim dobrima od velikog značaja, utvrđuje nadležni zavod za zaštitu spomenika kulture, a za kulturna dobra od izuzetnog značaja Republički zavod za zaštitu spomenika kulture. O ovako utvrđenim uslovima nadležni zavod dužan je da u roku od 7 dana obavesti Republički zavod za zaštitu spomenika kulture. Uslove za preduzimanje mera tehničke zaštite, kada projekte i dokumentaciju izrađuje nadležni zavod za zaštitu spomenika kulture, utvrđuje Republički zavod za zaštitu spomenika kulture. Uslove za preduzimanje mera tehničke zaštite, kada projekte i dokumentaciju izrađuje Republički zavod za zaštitu spomenika kulture, utvrđuje ministarstvo nadležno za poslove kulture.

[57] Član 102 *Zakona o kulturnim dobrima*.

[58] Videti član 107 *Zakona o kulturnim dobrima*.

[59] Član 108 *Zakona o kulturnim dobrima*.

3 Klasifikacija kulturnih dobara

Zakon o kulturnim dobrima Srbije ne sadrži podelu na materijalna i nematerijalna kulturna dobra. Otuda postoji jedino klasifikacija materijalnih kulturnih dobra spram njihovih fizičkih, umetničkih, kulturnih i istorijskih karakteristika na *nepokretna* i *pokretna*.[60] Sva kulturna dobra upisuje se u odgovarajući Registar kulturnih dobara čiji podaci su javni.

U *nepokretna* kulturna dobra, prema odredbama ovog Zakona, spadaju spomenici kulture, prostorne kulturno-istorijske celine, arheološka nalazišta i znamenita mesta. *Pokretna* kulturna dobra čine umetničko-istorijska dela, arhivska građa, filmska građa i stare i retke knjige. Zakonska podela kulturnih dobara je egzemplifikativno-enumerativnog karaktera. To znači da se pri utvrđivanju kulturnih dobara nadležni organ kreće u okviru zakonom određenih vrsta, pri čemu su svojstva tih dobara navedena *exempli cause*.

Podela kulturnih dobara na *nepokretna* i *pokretna* uglavnom ne stvara značajne nedoumice. Ipak, postoje i situacije kada ovakva klasifikacija nije jednostavna. Tada se postavlja pitanje da li neku fresku ili skulpturu treba posmatrati kao pokretnu stvar ili ona i dalje predstavlja deo nepokretnosti na kojoj, odnosno, unutar koje se nalazi. Ova dilema rešena je zahvaljujući odredbe *Zakona kulturnim dobrima*, prema kojoj spomenik kulture predstavlja i delo monumentalnog i dekorativnog slikarstva, vajarstva, primenjenih umetnosti i tehničke kulture, kao i druga pokretna stvar, deo građevinsko-arhitektonskog objekta od posebnog kulturnog i istorijskog značaja.[61] Uz to, ovim Zakonom je propisano i da Vlada Republike Srbije utvrđuje listu nepokretnih kulturnih dobara aktom, koji između ostalog, sadrži i spisak pokretnih dobara od posebnog kulturnog i istorijskog značaja koja se nalazi u nepokretnom kulturnom dobru.[62]

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[60] Prema klasifikaciji organizacije UNESCO, koja se bazira na fizičkim, umetničkim, kulturnim, istorijskim svojstvima, ali i mogućnosti turističke prezentacije kulturne baštine, razlikujemo: *arheološka nalazišta*, *dela sa spomeničkim i umetničkim svojstvima* (arhitektonska dela, slike i vajarski radovi, ostvarenja muzičke i dramske umetnosti), *prostorne kulturno-istorijske celine* (stara jezgra gradova, značajnije seoske ambijentalne celine, sakralni objekti, etno parkovi, srednjovekovni gradovi i utvrđenja, manastirski kompleksi), *znamenita mesta i spomen-obeležja*, *folklorno nasleđe* (zgrade i prostori, nošnje, stari zanati, usmena tradicija, kulinarske tradicije, tradicionalni sportovi i igre), *verovanja*, *jezici*, *manifestacione vrednosti* (priredbe i festivali, sajmovi iz oblasti kulture, sportske manifestacije vezane za tradicionalne sportove, *ustanove kulture sa svojim aktivnostima* (muzeji, galerije, kulturni centri, biblioteke), *kulturni pejzaži* (vrtovi, parkovi), *kulturne ture*, *podvodno kulturno nasleđe*, *muzika* i *pesme*. O problemima klasifikacije kulturne baštine prema *Konvencijio zaštiti svetske kulturne i prirodnebaštine* videti više: Hua Sun, *World Heritage Classification and Related Issues—A Case Study of the "Convention Concerning the Protection of the World Cultural and Natural Heritage"*, *Procedia Social and Behavioral Sciences*, br. 2/2010., str. 6954–6961.

[61] Član 19 *Zakona kulturnim dobrima*.

[62] Član 47 *Zakona kulturnim dobrima*.

Podela kulturnih dobara na *nepokretna* i *pokretna*, pored teorijskog ima i određeni praktičan značaj, budući da se pojedina zakonska rešenja primenjuju samo na određenu vrstu kulturnih dobara. Tako, izvesna ograničenja prava svojine važe samo za *pokretna* kulturna dobra. Razmena kulturnih dobara između ustanova nadležnih za njihovu zaštitu, radi obrazovanja celovitijih fondova ili zbirki, logično, važi samo za *pokretna* kulturna dobara. Mogućnost eksproprijacije odnosi se samo na *nepokretna* kulturna dobra. *Nepokretna* kulturna dobra, kako je već pomenuto, kao takva, moraju biti utvrđena posebnim aktom Vlade.[63] Za razliku od toga, listu *pokretnih* dobara utvrđuje muzej, arhiv, kinoteka i biblioteka, čiji je osnivač Republika, autonomna pokrajina, grad ili opština, u skladu sa *Zakonom o kulturnim dobrima*.[64]

3.1 Nepokretna kulturna dobra

Uticaju klimatskih promena izloženija su nepokretna kulturna dobra, budući da se najčešće nalaze na otvorenom prostoru. Vremenski uslovi predstavljaju jedno od glavnih uzroka njihovog propadanja. Oni mogu izazvati direktna fizička oštećenja na objektima i narušiti njihov izgled i fizionomiju.[65]

Zbog boljeg razumevanja ovih pojava naredno izlaganje biće posvećeno pojedinim vrstama nepokretnih kulturnih dobara, koja su zajedno sa svojim prirodnim okruženjem sve češće izložena nepovoljnim vremenskim prilikama.[66] Takve okolnosti diktiraju i značajne promene, kada su u pitanju mere i uslovi zaštite nepokretne kulturne baštine u svetu, kako bi se sačuvali svi njeni umetnički, istorijski i turistički potencijali.

U nepokretna kulturna dobra spadaju *spomenik kulture*, *prostorno-istorijska celina*, *arheološko nalazište* i *znamenito mesto*.[67] Svakom od njih biće posvećena posebna pažnja.

3.1.1 Spomenik kulture

Spomenik kulture kao nepokretno kulturno dobro, predstavlja građevinsko-arhitektonski objekat od posebnog kulturnog ili istorijskog značaja, kao i njegova graditeljska celina, objekat narodnog graditeljstva, drugi nepokretni objekat, deo objekta i celine sa svojstvima vezanim za određenu sredinu, delo monumentalnog i dekorativnog slikarstva, vajarstva, primenjenih umetno-

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[63] Član 47, stav 1 *Zakona kulturnim dobrima*.

[64] Član 49 *Zakona kulturnim dobrima*.

[65] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *Klimatske promene i zaštita – novija iskustva u planiranju područja kulturnog i prirodnog nasleđa, Arhitektura i urbanizam*, br. 40/2015., str. 42.

[66] Na osnovu člana 3, stav 3 *Zakona kulturnim dobrima* predviđeno je da se zaštita nepokretnih kulturnih dobara proteže i na njihovu okolinu.

[67] Vidi članove 19, 20, 21, 22 *Zakona kulturnim dobrima*.

sti i tehničke kulture, kao i druga pokretna stvar u njima od posebnog kulturnog i istorijskog značaja.[68]

Prema podacima Republičkog zavoda za zaštitu spomenika kulture Srbije, u Centralni registar nepokretnih kulturnih dobara upisano je preko 2000 spomenika kulture. Na ovom spisku se nalaze veliki broj verskih objekata, pre svega crkava i manastira, tvrđava i kula, kuća znamenitih ličnosti, grobnica, grobalja, zgrada, vila, palata, ali i seoskih kuća, salaša i ambara. Kao spomenici kulture zaštićeni su pojedini hoteli, kao Metropol, kafane kao „Ruski car" u Beogradu, mehane kao Uzun Mirka Apostolovića u opštini Obrenovac, staro banjsko kupatilo u Sokobanji, klinike kao Univerzitetska dečija klinika u Tiršovoj u Beogradu, astronomska opservatorija na Zvezdari u Beogradu, vodenice, vetrenjače, kao „Obornjača" u opštini Ada. Na listi zaštićenih spomenika kulture se nalaze i enterijer lokala Papilon u Subotici, ikonostasi, ali i prirodne celine kao Đavolja Varoš na Radan planini, Bojčinska šuma, brdo Gradiš u okolini Orahovca i Brankovina kod Valjeva.[69]

3.1.2 Prostorno-istorijska celina

Prostorno kulturno-istorijska celina predstavlja urbano ili ruralno naselje ili njihove delove, odnosno prostor s više nepokretnih kulturnih dobara od posebnog kulturnog i istorijskog značaja.[70] Ovakva kulturna dobra predstavljaju značajne materijalne dokumente privrednog i urbanog razvoja. Zbog toga, u okviru definisanih granica zaštite nije dozvoljena nikakva gradnja jer bi se time narušila njihova prostorno-ambijentalna skladnost. Posebnim merama potrebno sprečiti nekontrolisane intervencije na objektima, u smislu menjanja njihovog prvobitnog izgleda u meri u kojoj bi oni izgubili svoje istorijske i estetske, pa samim tim i ambijentalne vrednosti.[71]

U Centralnom registru Republičkog zavoda za zaštitu spomenika kulture do sada je upisano preko 70 ovakvih nepokretnih kulturnih dobara. Na ovom spisku se nalaze pojedine ulice, kao Knez Mihajlova u Beogradu, Kneza Miloša u Valjevu, Gospodar Jevrema u Šapcu, trgovi, kao Trg Jovana Cvijića u Loznici, trg Svetog Stefana u Sremskoj Mitrovici. Prostorno kulturno-istorijske celine čine i stara jezgra pojedinih gradova i naselja, kao Novog Sada, Zrenjanina, Zemuna, Banatskog Novog Sela, Bečeja, Pančeva, Negotina, potom pojedini privredni kompleksi, kao duvanske industrije Niš, kompleks pivnica u Negotinu. U ovu grupu kulturnih dobara spadaju i šire celine nekih verskih objekata i istorijskih spomenika, kao kompleks Sinagoge, školske i opštinske zgrade jevrejske

[68] Član 19 *Zakona o kulturnim dobrima*.

[69] Spisak svih spomenika kulture nalazi se na sajtu Republičkog zavoda za zaštitu spomenika kulture: <http://www.heritage.gov.rs/latinica/nepokretna_kulturna_dobra.php posećeno>, 24.08.2016. godine.

[70] Član 20 *Zakona o kulturnim dobrima*.

[71] Marija Stamenković, *Analiza arhitektonskih vrednosti prostorno kulturno-istorijske celine "Stara čaršija" u Knjaževcu*, *Nauka + praksa*, Zbornik radova Građevinsko-arhitektonskog fakulteta u Nišu, br. 12.1. /2009., str. 194.

zajednice u Novom Sadu, dvorac Marcibanji-Karačonji i park u Sremskoj Kamenici, memorijalni kompleks Gazimestan kod Prištine, kompleks Banje Koviljače i sl.

3.1.3 Arheološko nalazište

Arheološko nalazište je deo zemljišta ili površine pod vodom koji sadrži ostatke građevina i drugih nepokretnih objekata, grobnih i drugih nalaza, kao i pokretne predmete iz ranijih istorijskih doba od posebnog su kulturnog i istorijskog značaja. Trenutno je u Centralni registar upisano preko 190 *arheoloških nalazišta*, pri čemu je njih 18 proglašeno za kulturna dobra od izuzetnog značaja, a 25 za dobra od velikog značaja.

Arheološka nalazišta ljudskih naseobina na tlu Srbije sežu od doba paleolita, odnosno 40 000 godina pre nove ere.[72]Arheološko nalazište Lepenski Vir nalazi se u Đerdapskoj klisuri, i predstavlja središte jedne od najznačajnijih praistorijskih kultura. Na lokalitetu Lepenskog Vira otkriveni su ostaci sakralne arhitekture iz vremena 6500. do 5500. godina pre nove ere.[73] Ipak, najbogatije je kulturno nasleđe, koje je za sobom ostavilo veliko Rimsko carstvo. Na teritoriji današnje Srbije rođeno je čak 17 rimskih imperatora, što čini petinu njihovog ukupnog broja. U rekama Srbije do sada su otkriveni ostaci dva čamca iz rimskog perioda. Jedno od prvih vojnih utvrđenja na Dunavu bio je Viminacijum kod Požarevca. U Đerdapskoj klisuri je sagrađen i najveći rimski most na Dunavu dug skoro kilometar i po. Sirmijum je predstavlja najstariji rimski grad na teritoriji Srbije, pored Sremske Mitrovice. Medijana kod Niša, Gamzigrad kod Zaječara, Caričin grad kod Leskovca, Singidunum ili današnji Beograd, takođe su mesta bogate rimske zaostavštine.[74]

3.1.4 Znamenito mesto

Prema odredbama *Zakona o kulturnim dobrima*, *znamenito mesto* je prostor vezan za događaj od posebnog značaja za istoriju, područje s izraženim elementima prirodnih i radom stvorenih vrednosti kao jedinstvena celina, kao i spomen grobovi ili groblja i druga spomen obeležja koja su podignuta radi trajnog očuvanja uspomene na značajne događaje, ličnosti i mesta iz nacionalne istorije (memorijali), od posebnog kulturnog i istorijskog značaja.[75]

U Centralnom registru nalazi se 80 znamenitih mesta od kojih je 16 proglašeno za kulturna dobra od izuzetnog značaja, a 17 za dobra od velikog značaja. Na listi znamenitih mesta nalazi se nekoliko memorijalnih spomenika,

[72] Arheološki materijal čine uglavnom oruđa, oružja, metalno posuđe, novac kao i delovi keramičkog posuđa.

[73] Izvor: Arheološka nalazišta Srbije: <http://www.dgt.uns.ac.rs/itut/arheologija/index.html>, posećeno 25.08.2016. godine.

[74] *Ibidem*.

[75] Član 22 *Zakona o kulturnim dobrima*.

spomeničkih kompleksa, grobnica, grobalja koji svedoče o značajnim istorijskim bitkama i njihovim učesnicima. Na listi znamenitih mesta nalaze se i grobovi i spomenici istaknutih ličnosti. Ovoj grupi kulturnih dobara pripada i grob pesnika Branka Radičevića na Stražilovu na Fruškoj gori, spomenik Filipu Višnjiću u opštini Šid ili pak, spomen kuća Vuka Karadžića u selu Tršić u opštini Loznica.

Sva pomenuta kulturna dobra su poslednjih decenija izložena uticaju nepovoljnih vremenskih uslova. U zavisnosti od položaja, materijala od kojeg je kulturno dobro sačinjeno, učestalosti i vrsti ekstremnih vremenskih prilika, pretnje su različitog stepena i intenziteta. Zbog toga je potrebno u periodu kada naša zemlja usklađuje svoju regulativu o zaštiti kulturnog nasleđa sa evropskim standardima, posebnu pažnju usmeriti i na istraživanja posvećena uticaju klimatskih promena na kulturna dobra i prilagođavanju mera zaštite novonastalim uslovima.[76] O tome će više reči biti u narednom poglavlju.

[76] Nađa Kurtović Folić, *The Impact of Climate Change on bulit Heritage in Serbia*, *Zbornik radova Građevinskog fakulteta u Subotici* (broj posvećen naučnom skupu *Contemporary achivements in civile engineering*, br. 25/2014.), str. 860.

Uticaj klimatskih promena na zaštitu nepokretnih kulturnih dobara

1 Novonastali klimatski uslovi i najznačajnije posledice klimatskih promena

Klimatske promene predstavljaju jedan o najvećih izazova današnjice. Rezultat su internih procesa u klimatskom sistemu, odnosno različitih antropogenih faktora. Još uvek se ne mogu sa potpunom izvesnošću predvideti sve posledice klimatskih promena. Bez obzira na to dovoljno se zna o rizicima koje sa sobom nose.[77]

O zagrevanju klimatskih sistema svedoči povećanje prosečne globalne temperature, smanjenje obima snega i leda na polovima, i povećanje nivoa mora. U svetu su primetne sve češće pojave obilnih kiša i poplava, suša, erozija tla i klizišta, kao i pojačano dejstvo tropskih ciklona. Kada je u pitanju živi svet, uočeno je postepeno pomeranje staništa pojedinih biljaka i životinja ka polovima, što je svakako posledica globalnog otopljavanja. Slično tome, u vodenim ekosistemima dolazi do promena mesta nastanjenja i brojnosti pojedinih algi, planktona i riba.[78]

Klimatske promene su uzroci i sve češćih migracija stanovništva u predele sa povoljnijim vremenskim uslovima.[79] Prema nekim procenama, do polovine ovog veka oko 200 miliona ljudi bi moglo da napusti svoje domove zbog ekstremnih vremenskih uslova. Ipak, međunarodno pravo još uvek ne poznaje kategoriju klimatskih izbeglica.[80]

Većina studija klimatske promene povezuje sa posledicama različitih ljudskih aktivnosti. Ipak, postoje i istraživanja koja ukazuju na činjenicu da se klima ciklično menja, nezavisno od čovekovog uticaja. Jedno od takvih je i *Kanon osunčanja* Milutina Milankovića koji je matematički dokazao da se u određenim vremenskim periodima smenjuju ledena (glacijalna) i međuledena (intergla-

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77 *Četvrti izveštaj o procenama IPCC: Klimatske promene 2007: Sažeti izveštaj* u: Klimatske promene, studije i analize, Evropski pokret u Srbiji, ur: Milan Simurdić, Beograd, 2010., str. 51.

78 *Četvrti izveštaj o procenama IPCC: Klimatske promene 2007...* str. 53.

79 Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op.cit.*, str. 37.

80 Gavrilo Ostojić, *Ekološke izbeglice – direktan ili indirektan put do konflikta, Vojno delo*, br. 1/2014., str. 54. Autor razmatra okolnosti koje otežavaju definisanje pojma ekoloških izbeglica, i između ostalog smatra da bi priznavanje ove vrste izbeglica stvorilo „nerešive međunarodne probleme vezane za korišćenje velikih novčanih sredstava za pomoć. U *Konvenciji o statusu izbeglica iz 1951. godine* (*Convention Relating to the Status of Refugees*) (revidirana 1967. godine) izbeglički status imaju samo ona lica koja su napustila zemlju svog državljanstva zbog političkih i socijalnih razloga. Prema definiciji, izbeglica je svako ono lice koje se nalazi van svoje zemlje – države, dok se ekološke izbeglice, mogu nalaziti u okviru iste zemlje, odnosno izbeći iz jednog dela države u drugi. U skladu sa ovim, Vrhovni sud Novog Zelanda odbio je zahtev za azil tridesetosmogodišnjeg Ioana Teitiota koji se u potrazi za poslom i boljim životom tamo preselio sa suprugom i troje dece 2007. godine iz male ostrvske zemlje Kiribati kojoj preti potonuće usled povećanja nivoa mora. Više o ovome: AF (Kiribati) [2013] NZIPT 800413 (25 June 2013) <https://forms.justice.govt.nz/search/IPT/Documents/RefugeeProtection/pdf/ref_20130625_800413.pdf>. Videti isto: Kelly Buchanan, *New Zeland: „Climate Change Refugee" Case Overview*, The Law Library of Congress, Global Legal Research Center, 2015.

cijalna) doba.[81] Do promene prosečnih temperaturnih vrednosti dolazi usled cikličnih promena Zemljinog položaja u odnosu na Sunce,[82] jer ona u različitim epohama prima različitu količinu sunčeve energije.[83]

2 Međunarodni i regionalni regulatorni okviri prilagođavanja na klimatske promene

Bez obzira na konkretne uzroke klimatskih promena društvo je primorano da što pre suzbije štetne ljudske uticaje, uz istovremeno prilagođavanje novonastalim okolnostima.[84] Sa tim ciljem, pored opštih pravnih akata,[85] doneti su i brojni strateški dokumenti. Njima su utvrđene mere kojim bi se smanjila ranjivost na klimatske promene, kako na globalnom planu, tako i u regionalnim i nacionalnim okvirima.

Počev od 1988. godine *Međunarodni panel o klimatskim promenama*[86] objavljuje redovne izveštaje na osnovu kojih se sagledava stanje u ovoj oblasti, odnosno utvrđuju akcije i mere za ublažavanje posledica promene klime.[87] Pored toga, Organizacija Ujedinjenih nacija (u daljem tekstu: UN) usvojila je 2000. godine *Međunarodnu strategiju za smanjenje rizika od katastrofa*,[88] a 2004. godine i *Okvirni strateški dokument o prilagođavanju na klimatske promene*[89] u okviru Razvojnog programa UNPD (*United Nations Development Programme*). Veliki značaj borbi protiv klimatskih promena na globalnom nivou dala je i Konferencija UN održana u Montrealu 2005. godine.[90] Nakon toga je 2007. godine donet *Akcioni plan Okvirne konvencija UN o klimatskim promenama* (tzv. *Akcioni plan iz Balija*) kojim je u globalne pregovore uveden koncept nacionalno primerenih akcija za prilagođavanje (*Nationally appropriate mitigation actions* – NAMA's).

Još 1994. godine održana je prva svetska konferencija vezana za pitanja smanjenja prirodnih katastrofa u japanskom gradu Jokohami, na kojoj su donete *Smernice za prevenciju prirodnih katastrofa, pripremljenosti za ublažavanje* sa Akcionim planom (*Jokohama strategija*).[91] Odukom Generalne skupštine UN nakon

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[81] Dušan Nikolić, *Klimatske promene i građansko pravo – Elementi za strategiju prilagođavanja, Zbornik radova Pravnog fakulteta u Novom Sadu*, br. 4/2013., str. 65.

[82] *Ibidem*.

[83] *Ibidem*.

[84] Dušan Nikolić, *op.cit*., str. 66.

[85] Među njima najvažnija je *Okvirna konvencija UN o klimatskim promenama* iz 1992. godine (*The United Nations framework Convention on Climate Change*).

[86] *Intergovernmental Panel on Climate Change*.

[87] Objedinjeni Izveštaj za 2014. godinu dostupan na sajtu:IntergovernmentalPanel on Climate Change: <http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf>.

[88] *United Nations International Strategy for Disater Reduction*.

[89] *Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures.*

[90] *Montreal UN Climate Change Conference*.

[91] *Yokohama Strategy and Plan of Action for a Safer World: guidelines for natural disaster prevention, preparedness and mitigation*.

9 godina, sazvana je i druga konferencija sa sličnom tematikom na kojoj je usvojen *Hjogo okvir za delovanje 2005-2015: Razvoj otpornosti nacija i zajednica na katastrofe*.[92] Osnovni ciljevi ovog Dokumenta jesu smanjenje rizika od prirodnih katastrofa na međunarodnom, regionalnom i nacionalnom nivou. Kao ciljevi za naredni desetogodišnji period postavljeni su: poboljšanje sistema ranog upozorenja, korišćenje znanja, inovacija i obrazovanja radi izgradnje „kulture" bezbednosti i otpornosti na svim nivoima, smanjenje faktora rizika, kao i povećanje spremnosti na katastrofe, radi efikasnijeg reagovanja.

Sa ciljem ostvarivanja još efikasnijih rezultata u budućnosti donet je *Sendai okvir za smanjenje rizika od katastrofa za period 2015-2030*.[93] U njemu su kao ciljevi navedeni: značajno smanjenje smrtnosti od prirodnih katastrofa i ugroženosti ljudi, smanjenje direktnih ekonomskih gubitaka od štete nastale kao posledica prirodnih katastrofa, smanjenje štete po kritičnu infrastrukturu, potom povećanje broja zemalja sa izrađenom nacionalnom i lokalnim strategijama za smanjenje rizika od katastrofa, unapređenje saradnje u ovoj oblasti, kao i povećanje dostupnosti informacija i sistema za rano upozorenje.[94] Prioriteti za akciju na globalnom nivou, prema *Sendai okviru za smanjenje rizika od katastrofa za period 2015-2030* su, pre svega, razumevanje rizika i bolje ovladavanje njima, radi kontrole. Ovo se nastoji ostvariti kroz različitu praksu i politike delovanja koje podrazumevaju institucionalnu saradnju, jačanje kompetentnosti i koordinaciju unutar svih relevantnih sektora. Pored toga, naglašena je potreba za većim investiranjem u oblast upravljanja rizicima, radi jačanja otpornosti i pripremljenosti za efikasan odgovor, oporavak, rehabilitaciju i rekonstrukciju u skladu sa filozofijom „izgradi ponovo bolje".[95]

Evropska komisija je 2007. godine donela tzv. Zeleni dokument pod nazivom *Prilagođavanje na klimatske promene u Evropi – opcije za delovanje EU*[96]. Nakon toga, 2009. godine usvojen je i Beli dokument – *Prilagođavanje na klimatske promene: ka evropskom okviru za delovanje*.[97] Važni akti Evropske unije u ovoj oblasti su i *Evropska platforma za prilagođavanje na klimatske promene*[98] iz 2012. godine koja je poslužila kao osnov za donošenje *Strategije prilagođavanja Evropske unije*[99] iz 2013. godine.

Prema kasnijoj *Strategiji Evropa 2020*,[100] u pogledu klimatskih promena definisana su tri jasna cilja EU, među kojima je prioritetno smanjenje emisija

[92] *The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA).*

[93] *Sendai Framework for Disaster Risk Reduction 2015-2030.*

[94] Videti o ovome više: Bogoljub Milosavljević, *Međunarodna saradnja u oblasti smanjenja rizika od katastrofa, Pravni zapisi* br. 1/2015., str. 52-84.

[95] Bogoljub Milosavljević, *Međunarodna saradnja u oblasti smanjenja rizika od katastrofa...* str. 69-70.

[96] Green Paper – *Adapting to climate change in Europe – options for EU Action.*

[97] White Paper – *Adapting to climate change: Towards a European framework for Action.*

[98] *European Climate Adaptation Platform.*

[99] *European Union Adaptation Strategy.*

[100] *Europe 2020: A strategy for smart, sustainable and inclusive growth.*

gasova sa efektom staklene bašte za najmanje 20%, u odnosu na nivo iz 1990. godine. Inače, projekcije u vezi sa smanjenjem do 2050. godine utvrđene su na nivou od 80-95%, sa krajnjim ciljem da se obezbede uslovi za povećanje prosečne temperature ispod 2%. „Drugi cilj EU odnosi se na ostvarivanje 20% učešća obnovljivih izvora energije u potrošnji električne energije, a treći predstavlja unapređivanje energetske efikasnosti smanjenjem primarne potrošnje energije za 20% (u poređenju sa projektovanim nivoima).“[101]

Pored međunarodnih i regionalnih planskih dokumenata, mnoge države su donele i svoje nacionalne strategije prilagođavanja. One omogućavaju sprovođenje javnih politika u vezi za klimatskim promenama radi ublažavanja njihovih posledica. Adaptivni kapaciteti Srbije se još uvek ocenjuju kao veoma skromni. Svakako, proces pridruživanja EU značajno je podstakao aktivnosti u oblasti prilagođavanja na klimatske promene.[102] Uz državnu pomoć i strane donacije unapređen je rad Republičkog hidrometeorološkog zavoda. Danas je on ugledna ustanova u Evropi, koji pored pružanja redovne vremenske prognoze, daje i hidrološku prognozu, indeks opasnosti od pojave šumskih požara, prognozu UV indeksa, najavu ekstremno toplih ili hladnih talasa i slično.[103]

Novembra 2014. godine formiran je *Nacionalni savet za klimatske promene* sa zadatkom da prati stanje, razvoj i sprovođenje nacionalne politike u ovoj oblasti, sektorskih politika i drugih planskih dokumenata.[104] Ipak, u Srbiji se još uvek čeka na jedinstveni strateški dokument za adaptaciju, iako je njegova izrada predviđena još u *Strategiji održivog razvoja* iz 2008. godine.[105]

U nedavno objavljenom *Izveštaju Evropske komisije o proširenju u 2016. godini za Srbiju*, naša zemlja je dobila određene pohvale za napredak u usaglašavanju politika i zakonodavstva sa pravnim tekovinama EU kada su u pitanju oblasti upravljanja otpadom, zaštita prirode i prilagođavanje na klimatske promene. U ovom Dokumentu pozitivno je ocenjeno stanje u oblasti strateškog planiranja, kao i osnivanje Zelenog fonda, što su bile ključne preporuke iz 2015. godine. Konkretno, kada su u pitanju klimatske promene, u narednom periodu se od Srbije očekuje ratifikacija *Pariskog sporazuma*[106] i početak njegovog sprovođenja. To uključuje pripremu i donošenje sveobuhvatne strategije za prilagođavanje na

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[101] Dragoljub Todić, *Propisi Evropske unije u oblasti klimatskih promena i neka otvorena pitanja*, u: *Klimatske promene – Pravni i ekonomski izazovi*, (ur. Stevan Lilić), Pravni fakultet Univerziteta u Beogradu, 2011. str. 88.

[102] Goran Sekulić, *et. al.*, *Procena ranjivosti na klimatske promene – Srbija*, WWF (Svetski fond za prirodu), Centar za unapređenje životne sredine, Beograd, 2012., str. 23.

[103] Goran Sekulić, *et. al.*, *op.cit.*, str. 24.

[104] Izvor: Ministarstvo poljoprivrede i zaštite životne sredine: <http://www.eko.minpolj.gov.rs/osnovan-nacionalni-savet-za-klimatske-promene/>, posećen dana 02.09.2016. godine.

[105] *Strategiji održivog razvoja* (*Službeni glasnik Republike Srbije* br. 57/2008.).

[106] *Paris Agreement.*

klimatske promene. Ona će biti u skladu sa *Okvirom EU za period do 2030. za klimatsku i energetsku politiku*[107] i integrisana u sve relevantne sektore.[108]

3 Klimatski uticaji i nepokretna kulturna dobra

Klimatski uslovi su jedan od glavnih uzročnika oštećenja i propadanja nepokretnih kulturnih dobara. Ekstremni vremenski uslovi, kao posledica klimatskih promena su globalnog karaktera. Ipak, rizici su različiti u pojedinim regionima i užim lokalnim područjima. U nekim oblastima izraženije su drastične promene temperature, u nekima česte poplave, klizišta i suše, dok se pojedina priobalna područja bore sa povećanjem nivoa mora i okeana.

Na listi ugroženih kulturnih dobara koji bi u narednim decenijama mogla biti poplavljena nalaze se Kip Slobode, Londonski toranj, Sidnejska opera. Sa druge strane, Stounhedž gubi bitku sa erozijama tla. U sličnoj situaciji je 5000 godina staro neolitsko naselje Skara Bra koje se nalazi na obali Škotske. Mnoga kulturna dobra izložena su uticaju kiselih kiša. Naročito ona napravljena od mermera i krečnjaka, kao brojni antički grčki i rimski spomenici.[109] Centralni delovi Italije poslednjih godina pogodilo je nekoliko snažnih zemljotresa u kojima je stradalo bogato kulturno nasleđe.

Aktivnosti organizacije UNESCO ukazuju na klimatske promene kao jedan od globalnih problema i na potrebu ublažavanja njihovog uticaja. Radi se na umrežavanju lokaliteta svetskog nasleđa, „što omogućava razmenu informacija i promociju dobre prakse, kao i jačanje svesti o uticajima klimatskih promena".[110] Kulturna dobra moraju se posmatrati kao vulnerabilna kategorija kojoj prete ekstremni vremenski uslovi. Iz tog razloga UNESCO sve više podržava međunarodnu saradnju i istraživanja posvećena proučavanju uticaja klimatskih promena na kulturno nasleđe. Dobijeni rezultati služe smanjenu rizika od ovakvih pojava, budući da ih najčešće nije moguće u potpunosti otkloniti.[111]

U okviru *UNESCO Centra svetske baštine* (*World heritage centre*) obavljena je publikacija pod nazivom *Studija slučaja o uticaju klimatskih promena na svetsku kulturnu baštinu* u kojoj je dat niz primera uticaja klimatskih promena na prirodno i kulturno nasleđe uz pregled aktivnosti i mera prilagođavanja i ublažavanja ovakvih pojava. Brojni primeri navode na zaključak da nema jedinstvenog odgovora na identifikovane klimatske rizike.[112] Ipak, postoje određeni principi i mere koji se mogu primeniti na područja istih ili sličnih odlika.

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[107] *The EU Climate and Energy Framework 2030.*

[108] Radmilo Marković, *Poglavlje 27: najteže, najskuplje, i – nije prioritet*, izvor: Vreme: <http://www.vreme.com/cms/view.php?id=1445373>, od 24.11. 2016. godine.

[109] Ana Batrićević, *Pravna zaštita materijalnih kulturnih dobara od posledica zagađivanja životne sredine, Zbornik instituta za kriminološka i sociološka istraživanja*, br. 1/2016., str. 35.

[110] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op.cit.*, str. 41.

[111] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op.cit.*, str. 40.

[112] Tijana Crnčević, Omiljena Dželebdžić, Igor Marić, *op.cit.*, str. 42.

Takve aktivnosti služe „ublažavanju uticaja klimatskih promena i prilagođavanju, a baziraju se na monitoringu i proceni rizika, uz preduzimanje mera za povećanje otpornosti i adaptabilnosti zajednice."[113] Pored toga, potrebno je stvoriti i adekvatne baze podataka, radi boljeg uvida u potencijalne opasnosti i rizike. Zato se intenzivno radi na mapiranju svih ugroženih oblasti i konkretnih spomenika kulture.

Naredno izlaganje biće posvećeno pojedinim klimatskim uticajima na stanje nepokretnih kulturnih dobara.

3.1 Uticaj emisija štetnih gasova i kiselih kiša

Prekomerne emisije različitih štetnih gasova u vazduhu prouzrokuju pojavu kiselih kiša. One predstavljaju smešu vode, sumpor dioksida, azotnih oksida i drugih hemijskih jedinjenja. Kiselost ovakvih kiša je otprilike 40 puta veća od uobičajenih padavina.

Kisele kiše i druga atmosferska zagađenja prouzrokovana prekomernim emisijama štetnih gasova posebno ugrožavaju nepokretna kulturna dobra napravljena od kamena, mermera, krečnjaka, granita.[114] Usled štetnog dejstva dolazi do rastvaranja površine spomenika i fasada uz trajna oštećenja. Opasnost postoji i za kulturna dobra sačinjena od zlata, srebra, bakra, bronze i gvožđa. Usled atmosferskih zagađenja dolazi do korozije, promene boje i postepenog propadanja.

Grčki Partenon izgrađen u V veku pre nove ere na Akropolju u Atini simbol je stare antičke civilizacije, demokratije i jedan od najpoznatijih spomenika kulture ugrožen dejstvom emisija štetnih gasova i kiselih kiša.[115] Partenon[116] predstavlja dorski hram sa jonskim karakteristikama izgrađen od kvalitetnog mermera. Ipak, visok procenat karbon dioksida, azotnih oksida i prašine u vazduhu, kao posledica intenzivnog razvoja industrije, povećali su kiselost sredine poslednjih nekoliko decenija. Kiselina iz vazduha postepeno nagriza površinu mermernih stubova i statua Partenona, kao i dekoracije u kamenu.[117] Na svetloj boji mermera su se usled toga pojavile tamne mrlje.

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[113] *Ibidem*.

[114] Nishiyama Yoichi, *Effects of Air Pollution on Cultural Properties: The Measuring of Air Pollution and the Protection of Cultural, Properties in the Historic City of Nara, Japan*, 2004., str. 2, dostupno na: <http://www.nara.accu.or.jp/elearning/2004/pollution.pdf>, posećeno 07.09.2016.

[115] O kiselim kišama i pravnoj regulativi vezanoj za ovu pojavu videti više: Jutta Brunnée, *Acid Rain and Ozone Layer Depletion: International Law and Regulation, Transnational Publishers*, Inc. Dobbs Ferry, New York, 1988.

[116] Partenon je posvećen Grčkoj boginji Atini. Kao i većina grčkih hramova, Partenon je korišćen kao trezor, a jedno vreme je bio i trezor Delskog saveza. U VI veku Partenon je bio hrišćanska crkva posvećena Bogorodici. Nakon što su Turci osvojili Grčku, korišćen je kao džamija i u to vreme je imao i minaret. Pred kraj XVII veka, 28. septembra 1687. godine, tursko skladište municije koje se nalazilo unutar zdanja, pogođeno je granatama u sukobu sa Mlečanima. Usled eksplozija došlo je do značajnog oštećenja Partenona i njegovih skulptura.

[117] Yoichi Nishiyama, *op.cit.*, str. 4.

Sedamdesetih godina korišćen je poseban metod čišćenja stubova, kako bi im se povratila stara boja i izgled. Ipak, takav metod se više ne koristi jer je njime uklonjen originalan površinski sloj ovog zdanja. Zato su trenutno originali skulptura i stubovi hrama Erehteon zamenjeni replikama, dok su originali smešteni u muzej. Trenutno su u toku istraživanja radi pronalaženja najefikasnijeg metoda čišćenja i restauracije.

Atmosferska zagađenja narušavaju izgled i Katedrale u Kelnu,[118] koja predstavlja simbol ovog nemačkog grada na Rajni. Katedrala je građena u više navrata počev od 1248. godine, pa sve do 1880. Sadašnja masivna gotska kontrakcija potiče iz XIV veka sa tornjem visokim čak 157 metara. Prilikom gradnje korišćene su različite vrste kamena. Tokom vremena, smeša sumpora, hlora, fluora, smoga pomešana sa kišnicom oštetili su kamenu površinu Katedrale. Usled kristalizacije dolazi do struganja i ljuštenja fasade do dubine od oko 1 cm, kao i pojave rupa širine od 15-20 cm u prečniku. Posebno su oštećeni oni delovi građevine izloženi udarima vetra.[119]

Restauracija i konzervacija *Kelnske katedrale* počela je 1972. godine. Kontaminirana tamna površina je rastvorena pomoću posebne prirodne supstance dobijene iz drveta i očišćena destilovanom vodom. Pojedine statue koje su pretrpele najveću štetu su zamenjene replikama. Najmanje oštećene statue, kao i pojedini delovi fasade, koji su u lošem stanju, su presvučeni slojem smole, kako bi se zaštitile i sačuvale od daljih oštećenja. Krajnji cilj restauratorskih radova je da se čitava konstrukcija očisti pomoću prirodnih supstanci i destilovane vode i da joj se tradicionalnim graditeljskim tehnikama vrati prvobitni izgled.[120]

Stanje i vizuelni identitet i brojnih drugih spomenika kulture je u svetu narušen uticajem prekomernih emisija štetnih gasova. Mermer Tadž Mahala[121] u Indiji postepeno menja boju. Delovi kipa Slobode na ostrvu Menheten u Njujorku[122] značajno su korodirali, kao posledica zagađenja vazduha. Površina velikog bronzanog zvona kralja Seondeoka od Sile, koje predstavlja veliku turističku atrakciju, i nalazi se u centralnom parku nacionalnog muzeja u korejskom gradu Kjongžu, je korodirala pod uticajem visoke koncentracija

[118] Ova Katedrala predstavlja izuzetnu harmoniju postignutu u srednjovekovno-gotičkoj arhitekturi. Projektovana je u obliku latinskog krsta. U Katedrali se čuvaju mošti Sveta tri mudraca koja su u Keln stigle 1164. godine.

[119] Yoichi Nishiyama, *op.cit.*, str. 6.

[120] *Ibidem*.

[121] Tadž Mahal izgrađen je u periodu između 1631. i 1654. godine i predstavlja vrhunsko ostvarenje mogulske arhitekture, kombinacije persijskih, indijskih i islamskih arhitektonskih stilova u čijoj gradnji je učestvovalo na hiljade umetnika i građevinskih radnika.

[122] Kip Slobode predstavlja poklon Francuske SAD u znak prijateljstva. Skulptor spomenika je Frederik Bartoldi, a unutrašnju konstrukciju je izradio čuveni inženjer Gistav Ajfel (projektant Ajfelove kule). Kip Slobode postavljen je na ostrvo ispred Njujorka 1886. godine. Visok je 46 m, sa 47- metarskim postoljem, tako da se vrh nalazi na visini od 93 metara. Kip je težak 205 tona. Kruna sa sedam zrakova je simbol slobode koja treba da „žari" kroz sedam mora u sedam kontinenata.

štetnih gasova u vazduhu.[123] U Bugarskoj je u okviru projekta *Beautiful Bulgaria II* izdvojeno oko 4500 000 evra na čišćenje fasada i krovova čak 1350 najznačajnijih kulturno-istorijskih zdanja. Zahvaljujući pomoći organizacije UNESCO, veliki kameni reljef isklesan na platou Madara, poznat kao Madarski konjanik, u severoistočnoj Bugarskoj, ojačan je i zaštićen transparentnim premazom otpornim na različite štetne atmosferske uticaje. Zahvaljujući drenažnom sistemu izvršeno je i uklanjanje površinske vode.

Brojna istraživanja su pokazala da štetne materije u vazduhu izazivaju oštećenja i postepeno propadanje kulturnih dobara više stotina puta brže u odnosu na redovne prirodne okolnosti. U cilju sprečavanja ovog procesa, pored generalnih težnji za smanjenjem nivoa štetnih gasova u vazduhu, praktikuje se i premeštanje pojedinih kulturno-istorijskih spomenika manjeg formata, van izvora štetnih uticaja. Efikasna zaštita postiže se izgradnjom nadstrešnica i konstrukcija, radi zaklona od kiša i vetra, potom pošumljavanje koje bi ublažilo uticaj atmosferskih zagađenja, kao i primena odgovarajućih mera restauracije[124] i konzervacije.[125]

3.2 Uticaj poplava

Poslednjih decenija svedoci smo sve češće pojave poplava. Za procenu tačnog uticaja klimatskih promena na ovakve pojave potrebno je prikupiti pouzdanije podatke, nastale na osnovu dugoročnog praćenja stanja na rekama sa režimom prirodnog toka. U svakom slučaju, već je jasno da će globalno zagrevanje pojačati hidrološki ciklus, izazivajući sve češće izlivanje reka u mnogim oblastima. Prema nekim statistikama u Evropi oko dve trećine materijalne štete prouzrokovane prirodnim katastrofa potiče od poplava, oluja i drugih hidrometeoroloških pojava.[126] Uz to, ne treba zanemariti ni činjenicu da sve više ljudi živi u plavnim područjima. Samim tim će i materijalne štete od posledica poplava biti u narednim decenijama drastično veće.

Prema evropskoj *Direktivi o poplavama*[127] od država članica EU se zahteva izrada mapa plavnih područja, kao i priprema planova za upravljanje rizicima koji su usmereni na prevenciju i zaštitu. U izveštajima *Evropske agencija za*

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[123] Yoichi Nishiyama, *op.cit.*, str. 10.

[124] Termin *restauracija* podrazumeva postupak vraćanja originalnog formata predmeta koji se štiti od propadanja.

[125] Termin *restauracija* se koristi uz termin *konzervacija*. Ipak, ova dva pojma nemaju isto značenje. *Konzervacija* obuhvata znatno složeniji skup radnji, odnosno zbir fizičkih i hemijskih postupaka kojima se produžava životni vek nekog kulturnog dobra. Pomoću toga se otklanjaju postojeća oštećenja biološke, hemijske i druge prirode, radi usporavanja prirodnog procesa starenja materijala, uništavanja i propadanja.

[126] Izvor: Euroaktiv.rs, *Poplave delom rezultat klimatskih promena*: <http://www.euractiv.rs/odrzivi-razvoj/5920-poplave-delom-rezultat-klimatskih-promena->.

[127] *Directive 2007/60/EC on the assessment and management of flood*.

zaštitu životne sredine (EEA)[128] se kao moguće mere za ublažavanje posledica poplava pominje koncept „većeg prostora za reke". To podrazumeva ostavljanje šire teritorije za plavljenje na određenim lokacijama, i to spuštanjem nivoa plavnih područja ili premeštanjem brana. Pored toga, stvaraju se i močvarna područja koja mogu da apsorbuju višak vode, potom se primenjuju različite mere održavanja stabilnosti obala i korita vodotoka, uz kontrolu njihove propusne moći za vodu, led, nanos i sl.

Poplave predstavljaju glavnu pretnju kulturnom nasleđu. Tokom nedavnih poplava na našim prostorima, uragana Sendi u Nju Jorku 2012. godine, potom poplava na Tajlandu 2011. godine, u Pakistanu 2010. godine, Rimu i gradu Beverli u Engleskoj 2007. godine, pričinjena je ogromna šteta brojnim kulturno-istorijskim objektima.

U Londonu je nakon izlivanja reke Temze 1953. reke godine izgrađen sistem odbrane od poplava po najvišim standardima. Ipak, prilikom njegovog projektovanja uzeti su u obzir podaci o kretanju vodostaja u prethodna dva veka, što svakako ne odgovara novonastalim okolnostima i porastu rizika od poplava narednih decenija.[129] Zbog rizika od ovih pojava neposredno je ugrožena 80 biliona funti vredna imovina koja leži u plavnom ravničarskom području na obalama Temze.[130] Tu se nalaze i Nacionalni pomorski muzej, Londonski toranj (engl. *Tower of London*)[131], opservatorija Grinič[132] i Vestmisterska palata, ujedno sedište Britanskog parlamenta.[133]

Veliku štetu uzrokovanu poplavama leta 2002. godine pretrpelo je staro gradsko jezgro Praga sa velelepnim zdanjima iz XIV veka, kao što su zamak *Hradčani*, *Katedrala Svetog Vida* i *Karlov most* na Vltavi.[134] Tada je poplavljen i Češki Krumlov, jedan od najbolje očuvanih gradova u Češkoj, sa zdanjima nastalim u periodu od XIV do XVII veka u stilu gotike, renesanse i baroka. Voda je ušla u centar grada i bila visoka preko 4 metra. Srećom, srednjovekovni objekti

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[128] *European Environment Agency.*

[129] Augustin Colette, *at al.*, *Case Studies on Climate Change and World Heritage*, UNESCO World Heritage Centre, Paris, 2009. (Second Edition), str. 68.

[130] Augustin Colette, *at al.*, *op.cit.*, str. 69.

[131] *Tower of London* je srednjovekovna tvrđava koji predstavlja jednu od čuvenih znamenitosti ovog grada, uvrštena na listu Svetske kulturne baštine 1988. godine. Sve do sredine XX veka korišćena je u vojne svrhe i kao zatvor za pojedine važne zatvorenike. Poznata je bila i kao mučilište i gubilište za kraljevske protivnike. Danas se u Tornju čuva kruna kraljice Elizabete II. Poznat je i po gavranima koji su vekovima smešteni u njemu. Trenutno ih ima 8 i svaki ima svoje ime.

[132] Griničkи meridijan se uzima za „nulti meridijan", odnosno meridijan koji se definiše kao nula stepeni geografske dužine. On prolazi kroz Griničku opservatoriju u istoimenom mestu kod Londona.

[133] Westminsterska palata ili (engl. *Houses of Parliament*) sedište je Parlamenta Ujedinjenog Kraljevstva Velike Britanije i Severne Irske. U Vestmisterskoj palati sednice održava gornji dom —Dom lordova (engl. *House of Lords*) i donji dom —Dom komuna (engl. *House of Commons*).

[134] Staro jezgro grada Praga nalazi se na listi Svetske kulturne baštine od 1992. godine. Smešteno na obali reke Vltave i predstavlja prelepu arhitektonsku celinu.

ovog Regiona sagrađeni su od kamena i opeke koji su otporniji na vlagu, u odnosu na drvo i sirovu ciglu. U suprotnom, šteta bi bila mnogo veća.

U otklanjanju štetnih posledica poplava u Češkoj glavni izazov je bilo sušenje vlažnih zidova i objekata pre mraza, koji bi ih dodatno oštetio. Češka Vlada je nakon svega, uložila značajna sredstva u unapređenje mera zaštite od poplava, koje podrazumevaju najpre prevenciju, detaljne analize i upravljanje svim potencijalnim rizicima od ponavljanje ovih nemilih događaja.

Tokom katastrofalnih poplava koje su pogodile Srbiju i naš Region 2014. godine bilo je značajno ugroženo brojno pokretno, a naročito nepokretno kulturno nasleđe. U skladu sa tada donetom Odlukom o proglašenju vanredne situacije, uspostavljena su dežurstva stručnih ekipa i sprovedene brojne mere zaštite kulturnih dobara. Na spisku najugroženijih spomenika kulture bili su Crkva Svetog Đorđa na Oplencu, prostorno kulturno-istorijske celine u Valjevu, Čačku, Kraljevu, Obrenovcu, manastir sveti Nikola u Šatornji, zgrade muzeja u Čačku, Jagodini, Leskovcu, znamenita mesta, kao što su pećina Risovača, Senjski rudnik i najznačajnije spomeničko nasleđe na prostoru Grada Beograda.[135]

Prema *Izveštaju Vlade* sačinjenom nakon poplava u Srbiji 2014. godine, najviše štete pretrpeo je Obrenovac.[136] Čitav istorijski kvart ove opštine bio je potopljen do nivoa od 1 metra, a na nekim mestima i više. Poplavljeno je i oko 220 privatnih kuća, koje se nalaze u okolini ulice Miloša Obilića i predstavljaju sastavni deo istorijsko-arhitektonske celine, ili imaju urbano-kulturni, odnosno ambijentalno-kulturni značaj.[137] Materijali od kojih su ovi objekti izgrađeni su prilično osetljivi, jer su im temelji od drvenih ramova, popunjeni ciglama.[138] To je slučaj sa porodičnom kućom Mihajlovića i Obrenovačkom bibliotekom. Pored Obrenovca, stradali su i istorijski deo centra Paraćina, gde je voda dostigla čak 1 metar, kao i istorijski deo Valjeva. U drugim opštinama štetu su pretrpele mnogi objekti narodne arhitekture. Oštećeni su uglavnom krovovi i krovne konstrukcije. Fasada su se navlažile, a na mnogim mestima su se kasnije pojavila klizišta. Brojne crkve, kao i tvrđava u Šapcu, postale su statički nestabilne.

Potpuno poplavljeni objekti su privremeno bili nedostupni za javnu upotrebu, kao oni u Obrenovcu i Paraćinu. Ukupni gubici sektora kulture nakon poplava u Srbiji procenjuju se na 112,7 miliona dinara, od čega 98,1 miliona dinara odlazi na javni sektor, a 14,7 miliona na privatni.[139] Od toga oko 57,7 miliona dinara predstavlja štetu koju je pretrpelo nepokretno kulturno nasleđe, dok ostatak ove vrednosti čini šteta koja je zabeležena na prirodnoj baštini, nematerijalnoj baštini, kao i objektima u kojima je smeštena kulturna baština.[140]

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[135] Izvor: Portal Mondo: http://mondo.rs/a691890/Zabava/Kultura/Poplave-ugrozile-i-kulturna-dobra.html.

[136] *Poplave u Srbiji 2014*. (*Izveštaj Vlade Republike Srbije*), dostupan na: <http://www.obnova.gov.rs/uploads/useruploads/Documents/Izvestaj-o-proceni-potreba-za-oporavak-i-obnovu-posledica-poplava.pdf>.

[137] *Poplave u Srbiji 2014* (izveštaj Vlade Republike Srbije), str. 77-78.

[138] *Poplave u Srbiji 2014* (izveštaj Vlade Republike Srbije), str. 78.

[139] *Poplave u Srbiji 2014* (izveštaj Vlade Republike Srbije), str. 84.

[140] *Poplave u Srbiji 2014* (izveštaj Vlade Republike Srbije), str. 84-85.

Generalno, poplave predstavljaju veliku pretnju kulturnom nasleđu. Borba protiv ovakvih pojava podrazumeva usklađivanje razvojnih strategija, sistema upravljanja rizicima, kao i tehnika restauracije i konzervacije.[141] Ovakve tehnike treba da budu proaktivnije, sa ciljem prevencije rizika, a ne isključivo usmerene na otklanjanje štetnih posledica nakon poplava i drugih prirodnih katastrofa.

3.3 Pojava klizišta i erozije

Erozija[142] predstavlja prirodni proces spiranja i odnošenja najsitnijih i najplodnijih čestica iz rastresite podloge. Ovo se događa nakon jakih kiša ili zemljotresa. Sa druge strane, klizišta su tip erozije koje predstavlja kretanje zemlje, kamenja i drugih nanosa. Aktiviraju se i razvijaju brzo, kada se voda akumulira u zemljištu, kao posledica jakih i obilnih kiša, podzemnih voda, otapanja snega, zemljotresa, smrzavanja tla, kao i neadekvatne eksploatacije zemljišta. U slučaju klizišta obrušava se masa kamenja i zemlje.

Procenjuje se da u svetu na godišnjem nivou šteta izazvana klizištima prelazi više milijardi dolara. Takođe, svake godine od ove pojave strada na hiljade ljudi. Srbija spada u područja prilično ugrožena ovom pojavom. Oko 30% naše zemlje je podložno klizištima. Samo na teritoriji Beograda postoji više od 750 klizišta, a u Srbiji čak 36000.[143]

Klizišta prete da ugroze brojna kulturna dobra. Jedno od takvih je Maču-Pikču sveti grad Inka koji se nalazi na najvišem delu istočnih Anda i koji je od 2007. godine proglašen za jedno od sedam svetskih čuda. Sa sličnim problemima sreće se i *Ćavin*,[144] vrlo stari obredni centar 465 km severno od Lime, koji danas čine niz razrušenih ostataka okrnjenih piramida, građevina, terasa, trgova sa podzemnim prolazima, čija istorijska uloga još uvek nije otkrivena.[145] Topljenje lednika u ovoj oblasti stvara strahovita klizišta koja su 1945, 1962. i 1970. godine odnela hiljade života i prouzrokovala veliku materijalnu štetu samom nalazištu.[146] Velika klizišta u Venecueli su 1999. godine uništila mnoge objekte istorijskog i kulturnog značaja u gradu La Gvaira. Usled velikih klizišta nakon obilnih kiša u oktobru 2000. godine u mestu Gondo u Švajcarskoj,

[141] Rohit Jigyasu, *op.cit.*, str. 26.

[142] Postoji više tipova erozija kao što su *fluvijalna* erozija, kada voda prodire duboko u zemljište uskim kanalima. Usled ove vrste erozije dolazi do promene rečnog korita. *Eolska erozija* nastaje pod uticajem vetra, a *glacijalna* radom lednika. Za pojavu *kraške* erozije zaslužni su atmosferske, površinske i podzemne vode, dok *bujična* erozija nastaje usled mehaničkog rada atmosferskih voda.

[143] Izvor: Geologija:<http://www.geologija.org/articles/geo.php?t=2>, posećeno 18.09.2016.

[144] Ćavin predstavlja jednu od najstarijih kultura Južne Amerike. Postoje dve teorije o istorijskom značaju grada Ćavin de Uantar. Prema prvoj, ovaj grad je bio prestonica jednog teokratskog društva, koje je pokorilo sve narode u svojoj okolini. Pristalice druge teorije smatraju da se radi samo o ceremonijalnom centru.

[145] U njima je smeštena i monolitna statua božanstva visoka 4,53 metra, nazvana *Veliki nož* ili*Veliki idol koplje* zbog toga što ima oblik pravog noža uperenog ka zemlji.

[146] Augustin Colette, *at al.*, *op.cit.*, str. 61.

stradala je stara Stokalper kula, zdanje izgrađeno između 1666. i 1685. godine. Ovo mesto je bilo zaštićeno od klizišta specijalnim zidom od armiranog betona, međutim ona su bila jača od očekivanih. Pored velike materijalne štete, stradalo je i 14 ljudi.

Stonhedž[147], najpoznatiji praistorijski spomenik Engleske, izložen je dejstvu erozije. Slično je i sa čuvenim kamenim skulpturama u obliku ljudskih figura – Moai, koje se nalaze na Uskršnjim ostrvima u Pacifiku, i predstavljaju njihov zaštitni znak. Većina ih je smeštena na obali, pa porast nivoa mora i sve jači udari talasa prete da ih oštete. I naša Đavolja Varoš, izuzetan geomorfološki spomenik prirode, naučnog, kulturnog i turističkog značaja izložen je dejstvu ekcesivne erozije koja preti da ugrozi jedinstvene kamene piramide.[148]

Jedna od osnovnih mera zaštite od pojave klizišta i erozija je pošumljavanje. Tako su pri gradnji *Kineskog zida* napravljene terase od upletenog drveta tamarisa.[149] Pored toga, kao vid zaštite od klizišta koriste se i određene tehničke mere, kao što su uklanjanje nestabilnih delova terena, sidrenje nestabilnih slojeva, regulacija oticanja površinske vode. U slučaju erozija izrađuju se pregrada, pragovi i terase.

3.4 Zemljotresi i vulkanske erupcije

Otapanjem leda na polovima smanjuje se pritisak na kontinentalne ploče, pa dolazi do njihovog lakšeg i bržeg pomeranja. Naravno, ovakvi procesi su vrlo složeni, pa sve promene koje nastaju na površini Zemlje nisu nezavisne ni od onoga što se događa u celom Sunčevom sistemu. Zapravo, delovanje sila između planeta utiče na putanju Zemlje, njeno kretanje, nagib ose rotacije, kao i na položaj magnetnih polova. Sve to uzrokuje pomeranje kontinentalnih ploča na Zemlji, koje se zbog promene klime i globalnog otopljavanja sve više oslobađaju pritiska ledene mase. Upravo je to razlog sve učestalijih zemljotresa i vulkanskih erupcija na zemlji.

Ovakve pojave mogu prouzrokovati ogromnu materijalnu štetu. Vulkani su kroz istoriju izazivali katastrofe u kojima su stradale stare civilizacije. Poznate su erupcije vulkana Vezuv, kada je stradao antički grad Pompeja, potom erupcije Strombolija u Italiji, koji je uz Etnu jedini trenutno aktivan vulkan u Evropi, Pinatuba u Indoneziji i Fudžijame u Japanu, ili pak, Popokatepetla u Meksiku.

Kulturna dobra su u nedavnoj istoriji daleko manje stradala u vulkanskim erupcijama u poređenju sa zemljotresima koji su u stanju da unište čitave gradove i kulturno-istorijske lokalitete. Seizmička aktivnost ozbiljna je pretnja po stabilnost kulturnih dobara, naročito zidanih objekata. Izaziva pucanje

[147] Stounhedž je pravljen u tri faze između 3000. i 1600. godine pre nove ere. Arheolozi su saglasni da je reč o hramu, ali se ne zna kojim bogovima je posvećen, niti na koji način su vršeni obredi.

[148] Izvor: Planeta magazin <http://www.planeta.rs/47/13%20svetska%20bastina.htm>, posećeno 20.09.2016.

[149] Ana Kopčić, *Važnost i neophodnost bioinženjerskih metoda u rješavanju problema erozija i klizišta tla*, *Tehnički glasnik*, Zagreb, br. 2/2012., str. 199.

fasade, krovova i podova, što dovodi to delimičnih oštećenja, a često i do obrušavanja čitave konstrukcije. Tipična posledica zemljotresa su pojave likvifakcije (tečenja tla), klizišta i odrona.[150]

Samo tokom 2016. godine centralnu Italiju je pogodilo nekoliko snažnih zemljotresa. U avgustu mesecu iste godine potpuno je uništen gradić Amatriče, kada je stradalo čak 300 ljudi. Ovo naselje datira još iz stare ere, a posedovalo je vredne antičke zgrade i grobnice. U toj oblasti je i 1997. godine, tokom zemljotresa, poginulo desetak ljudi i teško je oštećen jedan od dragulja Umbrije, bazilika Svetog Franje Asiškog, sa Đotovim freskama.

Jak zemljotres je 1992. godine pogodio i Egipat, kada da je oštećeno čak 150 spomenika kulture iz doba faraona, islamskih i koptskih zdanja. Na našim prostorima, Crna Gora pamti katastrofalan zemljotres iz 1979. godine, kada je 101 osoba izgubila život. Tada su stradali Ulcinj, Bar, Petrovac, Budva, Tivat, Kotor, Risan i Herceg Novi. Posebno su oštećeni manastiri, crkve, muzeji, arhivi, koji su koncentrisani uglavnom u najugroženijem primorskom pojasu. Zemljotres jačine između 7 i 8 stepeni Rihterove skale je 2010. godine pogodio Kraljevo, a osetio se širom Srbije. Tada su štetu pretrpeli manastiri Žiča i Sopoćani.

U odnosu na neke druge prirodne katastrofe, zemljotresi i erupcije vulkana se teško mogu predvideti jer se događaju iznenada. Zbog toga su preventivne mere ovde veoma ograničenih mogućnosti. Iz tog razloga se pažnja usmerava na pomoć, evakuaciju i spašavanje, kao i rekonstrukciju oštećenih objekata i njihovo dodatno ojačanje, radi veće otpornosti. To podrazumeva primenu seizmičkih sidrara i veza, upotrebu ramova za učvršćivanje, horizontalnih strukturnih elemenata i sl.[151] Pri ovakvim postupcima uvek treba voditi računa da se ne naruši istorijski izgled i vrednost objekta kojem se pruža adekvatna seizmička zaštita.

3.5 Porast nivoa mora

Usled globalnog zagrevanja i topljenja polarnog leda nivo mora neprestano raste. To predstavlja veliku pretnju niskim priobalnim predelima gde žive milioni ljudi. Viši nivo mora i jače oluje mogu u potpunosti zbrisati neke plaže i ostrva. Za sada su najugroženiji Republika Kiribati u Tihom okeanu,[152] potom Maldivi u Indijskom okeanu, ostrva Toresovog moreuza, smeštena na krajnjem severu Australije. Pored toga, sa sličnim problemima se suočava i Ban-

[150] Zavod za hidrometeorologiju i seizmologiju Crne Gore: <http://www.seismo.co.me/questions/13.htm>.

[151] Nedeljko Stojnić, Duško Ostojić, *Predlog smanjenja dozvoljenog seizmičkog oštećenja na nepokretnim kulturnim dobrima visokogradnje*, *Građevinski materijali i konstrukcije*, br. 4/2016., str. 42.

[152] Čak i da se značajno smanji emisija štetnih gasova Republika Kiribati će u periodu između 30 i 50 godina biti potopljena. Zbog toga je predsednik Anote Tong doneo *Strategiju dostojanstvene migracije* koju su podržale vlasti Australije i Novog Zelanda, pa će tako državljani Kiribatija moći tamo da se obrazuju, pohađaju tamo različite obuke radi kasnijeg lakšeg zaposlenja. Inače, ova Republika je već kupila komad zemlje na ostrvu Fidži gde će uzgajati useve i odakle će dopremati svežu pitku vodu.

gladeš, gde masovne poplave često potope četvrtinu zemlje, usled porasta nivoa mora. U teškom položaju se nalaze i Majami, Vašington, Amsterdam, Šangaj, Venecija, čiji stanovnici će biti primorani na migracije u više kopnene predele.

Najnovije studije[153] pokazuju da bi u slučaju povećanja prosečne globalne temperature za samo jedan stepen Celzijusa više od 40 mesta na zemlji bilo direktno ugroženo mogućim potapanjem u narednih 2000 godina.[154] Sa povećanjem temperature od tri stepena bila bi u opasnosti jedna petina svetske kulturne baštine. U tom slučaju bi čak 136 lokaliteta ostalo ispod nivoa mora. Uz to, treba napomenuti da ovde nisu uzeti u obzir štetni uticaji plime i oluja.

Venecija[155] je sve češće pogođena poplavama na koje je lokalno stanovništvo već naviknuto. Poznate su kao *aqua alta* (visoka voda) i izazvane neobično velikom plimom u danima kada duva jak vetar i za vreme obilnih kišama. Ipak, to se sve češće događa usled porasta nivoa mora. Rešavanje ovog problema predmet je različitih debata. Italijanska vlada je kao krajnje rešenje izabrala primenu tzv. MOS sistema. On predstavlja svojevrsni eksperimentalni elektromehanički modul koji uključuje konstrukciju od 79 pokretnih brana i treba da razdvoji lagune od mora kad talasi narastu metar iznad dozvoljene granice. Ipak, mnogi smatraju da ovakav sistem neće uspeti da sačuva Veneciju od visokih voda i da će ona na kraju ipak biti potopljena. To bi bio strahovit udarac za Italiju, ali i celokupnu svetsku kulturnu baštinu.

Na listi kulturnih dobara kojima preti potapanje su i Kip slobode, Sidnejska opera, kao i Londonski toranj, Dvorana nezavisnosti (eng. *Indepedence Hall*) u Filadelfiji, gde je 1776. godine potpisana *Dekleracija o nezavisnosti* i *Ustav SAD* 1787.[156] Pod vodom bi se mogli naći i stari grad Dubrovnika, Bahai vrtovi u gradu Haifa u Izraelu, koji se ubrajaju u sedam svetskih čuda, delta Nila, Spomenik mira u Hirošimi, potom grad Istambul i brojna druga znamenita mesta. Ugroženi su i arheološka nalazišta u Pompeji i Herkulaneumu, kao i veliki deo Pize i Napulja u Italiji.

Brojne su mere za ublažavanje globalnog zagrevanja koje dovodi do postepenog porasta nivoa mora. Najvažnije su smanjenje upotrebe fosilnih goriva, racionalnije korišćenje energetskih resursa, kao i intenzivnija reciklaža sirovina. Kada je u pitanju zaštita kulturnog nasleđa, praktikuje je izgradnja brana, bedema i zaštitnih barijera. U slučaju da je moguće, pojedini spomenici manjeg formata mogli bi se izmestiti van domašaja talasa u više kopnene oblasti.

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[153] Jednu od najskorijih istraživanja obavili su Ben Marcajon sa Univerziteta u Inzbruku i Andreas Leverman sa Instituta za klimatska istraživanja u Posdamu.

[154] Izvor: Radio televizija Srbije: <http://www.rts.rs/page/magazine/sr/story/2523/nauka/2391737/klimatske-promene-prete-svetskom-kulturnom-nasledju-.html>, posećen 03.09.2016.

[155] Venecija je jedinstven grad na svetu. Izgrađena je na 118 malih ostrva na ušću reke Brente uVenecijansku lagunu, sa kanalima umesto ulica. Duž kanala nalazi se niz crkava i palata velike kulturno-istorijske vrednosti, koji čine jedinstven urbani sklop. Zbog svega toga Venecija i njeni kanali proglašeni su spomenikom Svetske baštineUNESCO.

[156] Videti o ovome više: Ben Marzeion, Anders Levermann, *Loss of cultural world Heritage and currently Inhabited Places to Sea-level Rise, Environmental Research Letters*, br. 9/2014., str. 1-7.

3.6 Ekstremne oluje

Usled klimatskih promena sve češće smo svedoci uragana,[157] tornada,[158] tajfuna[159] i cunamija sa katastrofalnim posledicama. Dok su uragani karakteristični za SAD i Karipske zemlje, tajfuni pogađaju severozapadni deo Tihog okeana.

Od početka XXI veka svet je pogodio veliki broj prirodnih nepogoda koje su odnele mnoge živote, dok je uz to pričinjena i ogromna materijalna šteta. Cunami u Indijskom okeanu 2004. godine usmrtio je blizu 275.000 ljudi. Štetu su pretrpela područja od Indonezije,pa sve do Somalije u Africi. Uragan Katrina je u avgustu 2005. godine pogodio južnu obalu SAD, pa je oko 80% grada Nju Orleansa potopljeno jer je nakon naleta uragana popustila brana koja je štitila grad. Tada je poginulo je blizu 1200 ljudi. Marta meseca 2011. godine severoistok Japana pogodio je podmorski zemljotres od 9 stepeni Rihtera koji je izazvao cunami strahovitih razmera, što je izazvalo i eksploziju tri nuklearna reaktora elektrane „Fukušima". Uragan Sendi je krajem oktobra 2012. godine odneo 200 života. Bujice su punile metro tunele i potpuno blokirale južni deo Menhetna, pri čemu je pričinjena šteta od oko 65 milijardi dolara. Supertajfun Haijan, praćen izuzetno snažnim vetrovima je 2013. godine pogodio Filipine, i praktično „progutao" priobalne gradove, kada je stradalo najmanje 10 000 ljudi.

U ovakvim prirodnim katastrofama veliku štetu trpi i kulturno nasleđe. Tokom uragana Martin 1999. godine u Francuskoj stradale su brojna arhitektonska zdanja i utvrđenja od Bretanje do Alzasa. Uragan je uništio 10 000 stabala u parku palate Versaj. Oštećene su crkve u Strazburu, Ruanu, Bordou, Rambujeu. Uragan Sendi značajno oštetio infrastrukturu Ostrva slobode, na kojem se nalazi čuveni Kip Slobode. Srećom, spomenik je preživeo strahovit udar uragana i nije bio oštećen, ali je ostrvo jedno vreme bilo zatvoreno za posetioce. Uragan Kiril je 2007. godine takođe oštetio brojne objekte u gradovima širom Evrope, među kojima i stari kameni most u češkom gradu Pisek sa koga je oborio monumentalni krst. Tokom uragana Mič 2008. godine stradale su mnoge istorijske znamenitosti glavnog i najvećeg grada Hondurasa – Tegusigalpe. Poplavljene su biblioteke, oštećen istorijski centar grada i uništena vredna arhivska građa.

Sve češće poplave, pojave klizišta i erozije, postepen porast nivoa mora, ekstremne oluje i zemljotresi dokaz su da se klima menja, i predstavlja veliku opasnost po svetsku populaciju i kulturno nasleđe u celini. Istovremeno,

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[157] Uragan je vetar, tropska oluja čija brzina prelazi 119 kilometara na čas. Uragani se formiraju u Meksičkom zalivu, a onda različitom jačinom pogađaju jugoistočni deo Sjedinjenih Američkih Država, kao i karipske zemlje.

[158] Tornado predstavlja rotirajuću akumulacija vazduha (vorteksa). Formirana je od kumulonimbus oblaka sa cirkulacijom koja dodiruje površinu zemlje.

[159] Tajfun je vrsta tropskih ciklona koji je tipičan za severozapadni deo Tihog okeana. Tajfuni se najčešće pojavljuju tokom leta i jeseni. Brzina vetra u unutrašnjosti tajfuna može dostići do 300 km/h. Tajfuni u sebi nose velike količine padavina i mogu izazvati ogromne štete.

jasan su znak da je potrebno preduzeti hitne mere prilagođavanja na aktuelne vremenske uslove.

Adaptacija na klimatske promene podrazumeva multidisciplinarna istraživanja. Globalne, regionalne i lokalne strategije prilagođavanja na novonastalu situaciju moraju da sadrže i plan zaštite kulturnog nasleđa i mere upravljanja rizicima kojim bi šteta na kulturnim dobrima bila sprečena ili svedena na minimum. O dosadašnjim dostignućima u ovoj oblasti biće reči u nastavku.

Pravno i strateški okvir prilagođavanja i pravci delovanja sa ciljem zaštite kulturnog nasleđa od posledica klimatskih promena

1 Suočavanje sa značajem pitanja zaštite kulturnog nasleđa u uslovima klimatskih promena na globalnom nivou

Pitanje uticaja klimatskih promena na kulturno nasleđe po prvi put je otvoreno na 29. zasedanju *Komiteta za svetsku kulturnu baštinu* održanom u Durbanu u Južnoafričkoj Republici 2005. godine. Tada je formirana i posebna radna grupa stručnjaka sa zadacima da razmotri prirodu i obim rizika, razvije odgovarajući strateški okvir za pomoć pojedinim državama članicama, kao i da pripremi izveštaj procene budućih uticaja klimatskih promena na kulturno nasleđe i mogućnostima za upravljanje rizicima.

Naredne godine održan je sastanak eksperata u sedištu UNESCA u Parizu na kojem su obavljene pripreme za donošenje *Izveštaja o proceni uticaja klimatskih promena na kulturno nasleđe* i *upravljanju rizicima* (*Report on Predicting and Managing the Effects of climate change on World Heritage*), kao i *Strategije za pružanje pomoći državama potpisnicama Konvencije o zaštiti svetske kulturne i prirodne baštine za primenu adekvatnih mera upravljanja rizicima koje sa sobom nose klimatske promene* (*Strategy to Assist States Parties to the Convention to Implement Appropriate Management Responses*) (u daljem tekstu: *Strategija o uticaju klimatskih promena na kulturno nasleđe*).[160] Na 30. zasedanju Komiteta za svetsku kulturnu baštinu u Vilnusu, u Litvaniji, jula meseca 2006. godine izvršena je analiza prethodno pripremljenih dokumenata i pozvane sve države potpisnice *Konvencije o zaštiti svetske kulturne i prirodne baštine* da izvrše njihovu implementaciju.

Strategijom o uticaju klimatskih promena na kulturno nasleđe definisano je pet ciljeva i mera, u skladu sa *Hjogo okvirom za delovanje 2005-2015*. To su najpre jačanje nacionalnih, regionalnih i globalnih inicijativa za smanjenje uticaja klimatskih promena na kulturno nasleđe, potom podsticanje razvoja inovacija i znanja u ovoj oblasti, radi razvoja adekvatnog sistema prevencije, kao i identifikovanje, procena i praćenja rizika od prirodnih katastrofa, smanjenje takvih rizika i na kraju jačanja spremnosti da se kroz zaštitu kulturne baštine odgovori na sve postojeće i buduće izazove.[161]Nakon usvajanja ove Strategije , u gradu Krajstčerč na Novom Zelandu je 2007. godine predstavljen je i *Priručnik o uticaju klimatskih promena na kulturno nasleđe* (*Policy Document on Climate Change and World Heritage*). Uz to su definisani i kriterijumi za utvrđivanje statusa najugroženijih prirodnih i kulturnih dobara. Oni neće isključivo služiti za izradu Liste najugroženije svetske baštine,[162] nego i kao osnova za uspostavljanje adekvatnih

[160] Oba dokumenta dostupna na sajtu UNESCO: <http://whc.unesco.org/uploads/activities/documents/activity-474-1.pdf>.

[161] Rohit Jigyasu, *op.cit.*, str. 26-27.

[162] Prema članu 11, tačka 4 *Konvencije o zaštiti svetske kulturne i prirodne baštine* na spisak dobara mogu biti uneta samo ona dobra kulturne i prirodne baštine kojima preti ozbiljna i konkretna opasnost, kao što su pretnja uništenjem usled ubrzanog propadanja, projekti velikih javnih i privatnih radova, nagli urbani i turistički razvoj, rušenje usled promena u korišćenju ili posedu zemljišta, duboke promene iz nepoznatih razloga, napuštanje iz bilo kojih razloga, izbijanje ili pretnja da će izbiti oružani sukobi,

mera zaštite i praćenja štetnih uticaja. Trenutno se na ovoj listi nalazi 55 dobara prirodne i kulturne baštine koja su izložena različitim rizicima, u skladu sa odredbama *Konvencije o zaštiti svetske kulturne i prirodne baštine*. Među njima su tu i ona kojima prete rizici od prirodnih nepogoda.

Radi promovisanja značaja zaštite kulturnih dobara u uslovima klimatskih promena UNESCO je 2008. godine izdao i publikaciju sa pojedinim studijama slučaja o uticaju ekstremnih vremenskih prilika na različita prirodna i kulturna dobra u svetu.[163]

2 Menadžment upravljanja rizicima po kulturno nasleđe

Uloga i cilj menadžmenta upravljanja rizicima po kulturno nasleđe (*Disaster Risk Management of Cultural Heritage*) jeste da spreči ili smanji uticaj negativnih prirodnih pojava na ova dobra, naročito na ona upisana na Listu svetske kulturne baštine. To podrazumeva sagledavanje svih rizika na konkretnoj lokaciji, ali i šire, planiranje i preduzimanje preventivnih mera, ali i aktivnosti u fazi oporavka nakon prirodnih nepogoda.

U slučaju pojave elementarne nepogode, uvek je potrebno angažovati unapred pripremljene i uvežbane timove. Obično su sastavljeni od lica zaduženih za koordinaciju, finansije, bezbednost, odnose sa medijima, popravke i rekonstrukciju kulturnog nasleđa. Sva angažovana lica moraju prethodno završiti određene obuke i simulacije, kako bi se proverila njihova operativnost i funkcionalnost. Ovakvi timovi moraju biti dobro povezani s lokalnom policijom, vatrogascima, zdravstvenim službama, organima vlasti.[164] Ključna okosnica svih aktivnosti pre, za vreme i nakon prirodne katastrofe jeste očuvanje autentičnosti i univerzalne vrednosti kulturnog dobara. Generalno, mere zaštita kulturnog nasleđa treba da omoguće aktivan pristup uz afirmaciju nekih tradicionalnih znanja i veština.

Plan upravljanja rizicima, koji ima obavezu da izradi svaka država potpisnica *Konvencije o zaštiti svetske kulturne i prirodnebaštine*, predstavlja jasno, fleksibilno i praktično uputstvo za lica koja upravljaju određenim kulturnim dobrom. Plan treba da se zasniva na identifikaciji i proceni ključnih rizika po kulturno dobro, kao i rizika po živote ljudi i njihovu imovinu.[165] U ovakvom dokumentu „potrebno je jasno naznačiti alate, tehnike i strategije za implementaciju preven-

katastrofe i kataklizme, požari, zemljotresi, kliženje tla, vulkanske erupcije, promene nivoa voda, poplave i veliki morski seizmički talasi. U slučaju nužde, Komitet će moći u svako doba da vrši dopune Spiska svetske baštine u opasnosti i o svakom novom upisu odmah izda saopštenje. Lista ugroženih dobara prirodne i kulturne baštine dostupna je na sajtu UNESCO i na njoj se trenutno nalazi 55 dobra. Videti: <http://whc.unesco.org/en/danger/>.

[163] Publikacija *Case Studies on Climate Change and World Heritage* dostupna je na sajtu organizacije UNESCO: <http://whc.unesco.org/en/activities/473/>

[164] Svetlana Dimitrijević Marković, Milica Grozdanić, *op.cit.*, 259.

[165] Svetlana Dimitrijević Marković, Milica Grozdanić, *op.cit.*, 257.

tivnih mera, način postupanja u slučaju opasnosti, kao i rešenja za oporavak kulturnog nasleđa od posledica katastrofa."[166] Sve pomenute mere moraju se uzeti u obzir pri kreiranju drugih pravnih, tehničkih i administrativnih aktivnosti na lokalnom, regionalnom i nacionalnom nivou. Sam plan upravljanja rizicima se izrađuje u različitim formama i sadržajima, u zavisnosti od toga kome je i u koju svrhu namenjen.[167] Sačinjava se u nekoliko istovetnih primeraka koji se čuvaju na više bezbednih i lako dostupnih lokacija.

Evaluacija preduzetih mera u periodu nakon katastrofe omogućava reviziju plana upravljanja rizicima sa ciljem njegovog unapređenja, izmene, ali i zadržavanja pojedinih predviđenih mera, kako bi se u slučaju nove katastrofe uklonili nedostaci postojećeg sistema. Popravke i rekonstrukcije kulturnih dobara mogu da traju godinama i prevazilaze sredstva kojima raspolažu lokalne zajednice. Samim tim ovakve aktivnosti moraju se integrisati u nacionalni sistem odbrane i oporavka i finansirati iz odgovarajućih namenskih fondova i donacija.[168]

3 Značajni međunarodni programi i aktivnosti u oblasti zaštite kulturnog nasleđa od posledica klimatskih promena

U oblasti zaštite kulturnog nasleđa paralelno se odvija niz aktivnosti, obuka i umrežavanja stručnjaka sa ciljem unapređenja znanja i metoda za što adekvatnije reagovanje na rizike koje sa sobom nose prirodne katastrofe.

Klimatske promene, kao velika pretnja čovečanstvu, prepoznate su još kroz *Okvirnu konvenciju UN o klimatskim promenama* iz 1992. godine, kasnije i kroz *Kjoto protokol* iz 1997. godine koji predstavlja važan korak u ograničavanju emisije šest gasova sa efektom staklene bašte.[169] Zbog toga, UNESCO sarađuje sa Sekretarijatom *Okvirne konvencije UN o klimatskim promenama* razmenjujući informacije na posebnoj Konferenciji, kao i u okviru zajedničkih tela koja su uključena u projekat SBSTA (*The Subsidiary Body for Scientific and Technological Advice*). Ovaj projekat podrazumeva razmenu stručnjaka i istraživanje uticaja klimatskih promena, osetljivosti kulturnih dobara i procesa prilagođavanja na novonastale okolnosti.

Januara 2005. godine u Kobeu u Japanu održana je Svetska konferencija posvećena zaštiti od katastrofa (*UN-WCDR – World Conference on DisasterReduction*). U okviru nje organizovana je i posebna sesija o kulturnom nasleđu i upravljanju rizicima u slučaju katastrofa (*Disaster Risk Management of Cultural Heritage*). „Tako je po prvi put na jednoj svetskoj konferenciji posvećenoj smanjenju

[166] *Ibidem*.

[167] *Ibidem*.

[168] Svetlana Dimitrijević Marković, Milica Grozdanić, *op.cit*., 260.

[169] Tamara Gajinov, *Građanskopravna odgovornost za imisije i zaštita životne sredine*, Dosije, Beograd, 2016. str. 100.

rizika i posledica usled dejstva elementarnih nepogoda, kulturno nasleđe bilo tema razmatranja i diskusije. Na Konferenciji je usvojena i deklaracija koja je potencirala blisku vezu između zaštite nasleđa, društveno-ekonomske stabilnosti i održivog razvoja društva."[170] Nakon toga, i u sklopu Međunarodne konferencije o rizicima i prirodnim katastrofama u Davosu izvršni sekretar Međuvladinog foruma za saradnju na prevenciji i zaštiti od prirodnih katastrofa i tehnoloških nesreća (*EUR-OPA Major Hazard Agreement*)[171] organizovao je prateći panel pod nazivom *Kulturno nasleđe i rizici – neka evropska iskustva*.

Jedan od osnovnih zaključaka ovakvih skupova bili su potreba za umrežavanjem stručnjaka koji se bave proučavanjem uticaja klimatskih promena na kulturno nasleđe, kroz održavanje edukativnih programa i obuku koji bi omogućili da briga o kulturnom nasleđu postane sastavna komponenta planova koji se bave upravljanjem rizicima u vanrednim situacijama.[172]

U cilju povezivanja stručnjaka koji se bave ovom problematikom UNESCO je zajedno sa *Institutom za ublažavanje uticaja katastrofa na urbano kulturno nasleđe* pri Ricumejken Univerzitetu u Kjotu (*Institute of Disaster Mitigation for Urban Cultural Heritage at Ritsumeikan University Kyoto*) u saradnji sa organizacijama ICCROM (*International Centre for the Study of the Preservation and Restoration of Cultural Property*), ICOMOS (*International Council on Monuments and Sites*) i UNISDR (*United Nations Office for Disaster Risk Reduction*) od 2006. godine počeo da organizuje međunarodni program obuke vezan za praćenje uticaja klimatskih promena na kulturno nasleđe i upravljanje rizicima od prirodnih katastrofa. Program je namenjen zaposlenima u vladinom, ali i nevladinom sektoru, na univerzitetima, kao i svim drugim stručnjacima u oblasti zaštite kulturnog nasleđa i kriznog menadžmenta.

Sam program predstavlja prikaz različitih aspekata vezanih za upravljanje rizicima kojima je izloženo kulturno nasleđe u slučaju prirodnih katastrofa. Cilj je da se polaznici međusobno povežu, formirajući međunarodnu mrežu stručnjaka iz ove oblasti, stiču određena znanja o sistemu prevencije. Polaznici se obučavaju za izradu plana upravljanja rizicima koji treba da budu kompatibilni sa opštim planovima za vanredne situacije. Uz to, cilj programa je i da učesnici steknu osnovna znanja o merama otklanjanju posledica velikih prirodnih kataklizmi. Čitav kurs obuhvata predavanja, kao i posete određenim lokacijama, radionice, diskusije i timsku izradu projekata na različite teme.[173]

Pored ovog, UNESCO zajedno sa organizacijom ICCROM, kao i brojnim drugim institucijama organizuje slične kurseve i programa, sa ciljem unapre-

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[170] Svetlana Dimitrijević Marković, Milica Grozdanić, *op.cit.*, 254.

[171] *EUR-OPA Major Hazard Agreement* predstavlja platformu (stvorenu na osnovu *Rezolucije br. 87/2* Komiteta ministara Saveta Evrope) koja pored istraživanja, razmene informacija i tehničkog dijaloga, podstiče razvoj i jačanje pravnih i institucionalnih okvira država članica za odgovor na velike katastrofe. Više o ovom Sporazumu na: <http://www.coe.int/en/web/europarisks/about-us>.

[172] Svetlana Dimitrijević Marković, Milica Grozdanić, *op.cit.*, 254.

[173] *Ibidem*.

đenja znanja i profilisanja stručnjaka iz ove oblasti. Oni su do sada održani u Italiji, Albaniji, Rumuniji, Meksiku, Mianmaru, Egiptu, Bugarskoj, i na Malti.

4 Pravni okvir delovanja na nivou Evropske unije

Od osamdesetih godina prošlog veka evropska politika zaštite kulturne baštine podržava načela održivog razvoja, pa se kulturno nasleđe sagledava u kontekstu šireg klimatskog i ekološkog okruženja. Od tada se podstiče povezivanje sektora konzervacije sa područjima ekonomije, ekologije, sociologije, urbanog i regionalnog razvoja.

Razmatrajući rizike koji prete kulturnom nasleđu usled ekstremnih vremenskih prilika, Savet Evrope je usvojio *Preporuku br. R (88) 5 o kontroli fizičkog pogoršanja arhitektonskog nasleđa ubrzanog zagađenjem*.[174]Ovim Dokumentom utvrđene su organizacione i programske mere za istraživanju procesa degradacije i zaštite materijala izloženog dejstvu različitih vremenskih prilika i zagađenja.

Problemi degradacije kulturnog nasleđa usled zagađenja ponovo su razmatrani deceniju kasnije. Ovog puta nisu uzete u obzir isključivo štetne posledice po arhitektonsko nasleđe, već je kulturno nasleđe posmatrano daleko šire i celovitije. Zahvaljujući *Preporuci br. R (97) 2 o održivoj brizi za kulturno nasleđe prema fizičkom pogoršanju usled zagađenja i drugih sličnih faktora*,[175] po prvi put je uveden koncept upravljanja rizicima, radi eliminisanja i umanjenja nepovoljnih klimatskih uticaja.[176]

U *Studiji Evropskog parlamenta* iz 2007. godine posvećenoj zaštiti kulturnog nasleđa u uslovima prirodnih nepogoda[177] definisano je nekoliko osnovnih ciljeva Unije, radi ublažavanja negativnih uticaja prirodnih pojava na kulturno nasleđe. Tako će se u narednim godinama vršiti stalni nadzor i praćenje stanja kulturnih dobara, raditi na unapređenju sistema planiranja i korišćenja zemljišta, jačati svest o značaju zaštite kulturnog nasleđa od posledica klimatskih promena, uz organizovanje obuka i radionica iz ove oblasti. Pored toga, kao cilj postavljeno je i afirmisanje saradnje između država, omogućavanje lakše dostupnosti evropskim fondovima iz kojih bi se finansirali projekti i programi namenjeni adaptaciji.

Ipak, treba imati u vidu i da različite elementarne nepogode imaju svoje specifičnosti. Razlike između njih mogu biti veoma značajne, u smislu primene

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[174] *Recommendation no. R (88) 5 of the Committee of Ministers to member states in control of physical deterioration of the architectural heritage accelerated by pollution.*

[175] *Recommendation no. R (97) 2 of the Committee of Ministers to member states n sustained care of the cultural heritage against physical deterioration due to pollution and other similar factors.*

[176] Zorica Civrić, *Određivanje prilaza u procesu revitalizacije objekta industrijskog nasleđa u muzej sa aktivnom ulogom širenja znanja i kulture održivog razvoja*, dostupno na:< https://bg.ac.rs/files/sr/studije/studije-uni/radovi/MasterRadZoricaCivric.pdf>.

[177] Studija je dostupna na: <http://www.europarl.europa.eu/activities/expert/eStudies.do?language=EN>.

preventivnih mera, predvidivosti nastanka i kasnijeg procesa oporavka. Primera radi, zemljotresi se teško mogu predvideti i predstavljaju prirodni fenomen koji se brzo i iznenada događa. Veličina teritorije na kojoj mogu nastati oštećenja na objektima ne može se unapred odrediti. Za razliku od toga, pojava poplava na velikim rekama se može utvrditi sa krajnjom preciznošću. Uz to se čak može odrediti i rast nivoa reke po časovima i danima, uz vrlo precizne prognoze zona plavljenja. Zbog toga se pojedine preventivne akcije mogu preduzeti u toku same poplave.

Različite karakteristike elementarnih nepogoda zahtevaju specifične reakcije, mere zaštite, uz adekvatne kadrovske kapacitete i infrastrukturu. Preduzete mere treba da se oslanjaju na dobru praksu i iskustva pojedinih neevropskih zemalja, pre svega, Amerike, Japana i Tajvana. Među evropskim zemljama najbolji sistem preventivnih mera zaštite kulturnog nasleđa od prirodnih katastrofa ima Švajcarska. Njen program zaštite uključuje detaljno mapiranje sa prikazom i opisom svih kulturnih dobara u urbanim i ruralnim sredinama.

U većini evropskih zemalja je oblast zaštite kulturnog i prirodnog nasleđa od posledica prirodnih nepogoda uglavnom marginalna. Ova pitanja su uglavnom u senci problema zaštite životne sredine. Značaj kulturne baštine je nedovoljno artikulisan u medijima. Ipak, u državama članicama EU postoje relativno dobri kapaciteti za odgovor na prirodne katastrofe. Oni se zasnivaju na bliskoj saradnji između policije, vojske i vatrogasnih službi, spremnih da deluju u vanrednim situacijama. Ovakav sistem je podržan adekvatnom pravnom regulativom na nacionalnom nivou, u skladu sa principom supsidijarnosti, budući da je oblast odbrane od prirodnih katastrofa u isključivoj nadležnosti država članica. I pored toga, one imaju pravo na pomoć od Evropske unije. U vanrednim situacijama dužne su da međusobno sarađuju i pružaju pomoć, ali da u određenim slučajevima omoguće pomoć i drugim državama koje nisu članice Unije.

Mape potencijalnih prirodnih opasnosti po kulturno nasleđe još uvek ne obuhvataju čitavu teritoriju EU. U skladu sa *Direktivom 2007/60 EZ o proceni i upravljanju rizicima od poplava*, postoji obaveza izrade mapa plavnih zona.[178] Potrebno je dovršiti mapiranje čitave teritorije Unije, jer je to od suštinskog značaja za utvrđivanje strategija i mera upravljanja rizicima koje prete kulturnom nasleđu. Uspostavljanje sistema daljinskog praćenja u značajnoj meri bi poboljšao primenu preventivnih mera i omogućio operativnije delovanje u slučaju prirodnih kataklizmi. *Direktiva 2007/60 EZ o proceni i upravljanju rizicima od poplava* je dobro struktuirana i treba da služi kao primer za pripremu i drugih akata Unije vezanih za zaštitu kulturne baštine od prirodnih katastrofa.[179]

Pristup zaštiti kulturnog nasleđa mora biti takav da se ono integriše u sistem odbrane od prirodnih katastrofa. Ova dva sistema zaštite se trenutno posmatraju odvojeno, bez uspostvaljene međusobne veze. Uz to je sistem odbrane od prirodnih katastrofa prilično heterogen, regulisan na različitim nivoima u

[178] *Directive 2007/60/EC on the Assessment and Management of Flood Risks.*

[179] *Studija Evropskog parlamenta*, str. 40.

okviru pravnih instrumenata Unije. Zaštita kulturnih dobara nije u dovoljnoj meri integrisana ni u bezbednosna istraživanja, iako su upravo spomenici kulture česta meta terorističkih napada. Rezultati ovakvih mera bile bi značajne za čitavu EU izvan njenih granica, kao i za zaštitu turista državljana zemalja EU. Ni pravni akti koji se odnose na prostorno-urbanistički razvoj uglavnom ne sadrže odredbe o zaštiti kulturne baštine, iako se većina spomenika kulture nalaze upravo u urbanim gradskim naseljima.

Mehanizam civilne zaštite na nivou Zajednice ustanovljen je na osnovu *Odluke Saveta 2001/792*[180] koja je preinačena *Odlukom 2007/779*.[181] Ovi pravni akti prestali su da važe usvajanjem *Odluke 1313/2013 o Mehanizmu Unije za civilnu zaštitu*.[182] Time je ustanovljen sistem mera radi poboljšanja koordinacije i mobilizacije hitnih službi radi pružanja pomoći državi koju je pogodila elementarna nepogoda. Uspostavljeni mehanizmi odnose se i na zaštitu životne sredine, pomoć stanovništvu i zaštitu njihove imovine. Predviđeni regulatorni okvir uključuje i zaštitu kulturne baštine u slučaju katastrofa uzrokovanih ljudskim delovanjem, uključujući tu prirodne nepogode i zagađenje mora.[183]

Uspeh i efikasnost delovanja u vanrednim situacijama u velikoj meri zavisi od iskustva i pouka iz prošlosti. Vanredni događaji se obično ne ponavljaju na istom mestu, pa čak ni u istoj državi u određenom kratkom vremenskom razdoblju. Upravo iz tog razloga su posebno značajne zajedničke intervencije preduzete od strane internacionalnih timova sastavljenih od ljudi koji poseduju znanje i iskustvo. To doprinosi donošenju pravovremenih i ispravnih odluka.

Uključivanje kompetentnog osoblja i nabavka opreme za reagovanje u vanrednim situacijama iziskuje velika novčana sredstva. Ipak, bez toga se ne mogu sprovesti kvalitetne i dobro koordinirane zajedničke akcije. Kroz različite evropske strukturne fondove planira se intenzivnije sprovođenje preventivnih mera na prekograničnom, transnacionalnom i međuregionalnom nivou. One se odnose na pribavljanje neophodne opreme, razvoj infrastrukture, transnacionalne planove pomoći i mapiranje potencijalnih rizika. Finansijska sredstva za ostvarivanje ovakvih aktivnosti određena su u iznosu od 368 428 000 EUR,

[180] *Council decision establishing a Community mechanism to facilitate reinforced cooperation in civil protection assistance interventions.*

[181] *Council decision establishing a Community Civil Protection Mechanism (recast).*

[182] *Decision 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism.* Mehanizam Unije trebao bi da olakša mobilizaciju i koordinaciju intervencija i pomoći. On podrazumeva rad Koordinacionog centra za odgovor na hitne situacije (ERCC) kao i Zajedničkog komunikacijskog i informacijskog sistema za hitne situacije (CECIS) kojim bi upravljala Komisija. *Mehanizam Unije* je usmeren na jačanje saradnje između država članica, radi prevencije i pripreme za eventualne katastrofe, poboljšanje pripravnosti država radi delotvornijeg delovanja, kao i podizanje svesti javnosti o značaju spremnosti na katastrofe i pravovremenoj reakciji. Uz to, predviđena je i razmena znanja, informacija, osoblja i stručnjaka, podsticanje različitih istraživanja, sprovođenje programa i projekata radi ukupnog ublažavanja posledica katastrofa izazvanih ljudskim delovanjem ili prirodnim činiocima u okvirima EU.

[183] Videti član 3 *Odluke 1313/2013 o Mehanizmu Unije za civilnu zaštitu.*

prema tekućim cenama, za razdoblje od 2014. do 2020. godine.[184] Godišnja odobrena sredstva određuju Evropski parlament i Veće u granicama višegodišnjeg finansijskog okvira.[185]

U narednim godinama treba posvetiti veću pažnju izmenama pojedinih pravnih akata Unije u cilju uključivanja pitanja zaštite kulturne baštine u postupak delovanja u vanrednim situacijama. Izrada mapa rizika na koje obavezuje *Direktiva 2007/60 EZ o proceni i upravljanju rizicima od poplava* treba da sadrži i popis svih kulturnih dobara, uključujući i arheološke lokalitete i kulturno-istorijske celine. Planovima za upravljanje u vanrednim situacijama moraju se predvideti i mere za tretman kulturnog nasleđa na ugroženim teritorijama. U skladu sa *Direktivom o uspostavljanju infrastrukture za prostorne informacije u Evropskoj zajednici* (*INSPIRE*)[186] države članice su u obavezi da učine sve dostupnim prostorne podatke i informacije. To uključuje i podatke o zaštićenim područjima i potencijalnim rizicima. Njima treba dodati i informacije o kulturnoj baštini na konkretnim mestima.

Prekogranična saradnja u ovoj oblasti nije podržana odgovarajućim pravnim aktima na nivou Unije. Pomoć u vanrednim situacijama se uglavnom temelji na režimu ustanovljenom kroz određene bilateralne i multilateralne sporazume između pojedinih država članica. Takve sporazume je, primera radi, potpisala Češka sa Mađarskom. Na osnovu njih, spasilački timovi jedne države imaju odobrenje za akcije na teritoriji druge, prema posebnom, pojednostavljenom režimu. Saradnja obuhvata i razmenu informacija, zajedničke obuke, treninge, korišćenje letelica i slično. Sličan sporazum potpisan je između država članica EU (Bugarske i Grčke), Makedonije i Turske koji se odnosi na saradnju u slučaju šumskih požara.[187]

Do danas države članice EU su donele brojne smernice i nacionalne akcione planove namenjene odbrani od ekstremnih prirodnih događaja ili ljudskih postupaka. To su uglavnom pravni akti koji se odnose na pitanja iz resora jednog od ministarstva.[188] Ipak, njima najčešće nije obuhvaćeno kulturno nasleđe. Grčka je 2003. godine usvojila *Nacionalni plan za borbu protiv disertifikacije*, u skladu sa *Konvencijom UN za borbu protiv disertifikacije*,[189] čiji Aneks IV se odnosi na Mediteranske zemlje. Ovim akcionim planom obuhvaćene su potrebe zaštite prirodne baštine, ali ne i kulturnih dobara. Slična situacija je i sa drugim državama EU, kao recimo Portugalijom, čiji Nacionalni akcioni plan takođe

[184] Član 19, stav 1 *Odluke 1313/2013 o Mehanizmu Unije za civilnu zaštitu*. Pri tome iznos od 22 3776 000 evra u tekućim cenama proizlazi iz naslova 3. „Sigurnost i građanstvo", a 144 652 000 evra u tekućim cenama iz naslova 4. „Globalna Evropa".

[185] Član 19, stav 1 *Odluke 1313/2013 o Mehanizmu Unije za civilnu zaštitu*.

[186] *Directive 2007/2/EC Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)*.

[187] *Studija Evropskog parlamenta*, str. 50.

[188] *Studija Evropskog parlamenta*, str. 11.

[189] *United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Droughtand/or Desertification, Particularly in Africa, (UNCCD)*.

ne sadrži mere zaštite kulturnog nasleđa. Za razliku od toga, Nacionalnim akcionim planom Italije namenjenom borbi protiv disertfikacije još iz 1999. godine uvedene su mere koje se odnose na zaštitu istorijskih celina. U njemu je istaknut značaj istraživanja u ovoj oblasti i finansijske podrške kroz različite projekte.

Pravni akti država članica EU koji se odnose na zaštitu od poplava uglavnom obuhvataju i pitanja zaštite kulturnog nasleđa. Italija, u poređenju sa ostalim evropskim državama, poseduje najkvalitetniji sistem mapiranja ugroženih područja koji su zajednički izradili stručnjaci odeljenja civilne zaštite i ministarstva kulture. Postupak mapiranja predstavlja dug proces, jer obuhvata sve istorijske lokalitete, kojih u ovoj državi ima mnogo. Iskustva Italije u ovoj oblasti treba da iskoriste i druge države članice EU. Takođe i u Slovačkoj su izrađene mape kojima je obuhvaćeno čitavo nacionalno kulturno blago, uključujući i 52 srednjovekovna dvorca.[190]

U državama EU postoji različit pristup osiguranju kulturne baštine od prirodnih katastrofa. Osiguranje od poplava nije popularno, a u nekim zemljama čak nije ni moguće osigurati imovinu u plavnim zonama. Pojedine studije pokazale su da je Američki sistem osiguranja daleko kvalitetniji, te je smanjio federalnu pomoć u slučaju prirodnih kataklizmi za čak 10 puta. Radi pomoći državama članica u borbi protiv elementarnih nepogoda osnovan je i poseban Fond solidarnosti. koji se pokazao kao brzo, efikasno i fleksibilno sredstvo. Ipak, pojedine administrativne barijere često otežavaju primenu ovakve vrste pomoći.

5 Značajni evropski projekti i aktivnosti

Iako oblast kulture spada u isključivu nadležnost država članica, Evropska unija i njeni organi podržavaju kulturnu razmenu. Oblast kulture se zato integriše u razvojne programe i projekte Unije. S tim u vezi sprovodi se niz aktivnosti sa ciljem efikasnijeg suočavanja sa posledicama sve češćih poplava, klizišta i drugih vremenskih neprilika koji predstavljaju pretnju, kako za živote ljudi i njihovu imovinu, tako i za kulturno nasleđe.

Evropska komisija u okviru šestog *Okvirnog programa za istraživanje i razvoj* podržala projekat *Noah's Ark* (*Nojeva barka*) (*Global Climate Change Impact on Built Heritage and Cultural Landscapes*)[191] za period od 2004. do 2007. godine

[190] *Studija Evropskog parlamenta* str. 10.

[191] Više o ovom projektu videti u *Izveštaju na:* <https://www.coe.int/t/dg4/majorhazards/activites/2009/Ravello15-16may09/Ravello_APCAT2008_44_Sabbioni-Jan09_EN.pdf>. U projektu su između ostalih učestvovali: Institut za atmosferska istraživanja i klimu iz Bolonje (*Institute of Atmospheric Sciences and Climate – ISAC*), Centar za održivo nasleđe, Univerzitetski koledž iz Londona (*Centre for Sustainable Heritage, University College London*), Institut istočne Anglije, škola za nauke o zaštiti životne sredine (*University of East Anglia, School of Environmental Sciences*) iz Norviča, Institut za istraživanje korozije i metala (*Corrosion and Metals Research Institute*) iz Stokholma i brojni drugi.

koji je udružio glavne evropske naučne centre koji se bave istraživanjem zaštite kulturnog nasleđa u uslovima klimatskih promena, osiguravajuće i druge privatne kompanije specijalizovane za naknadu štete prouzrokovane prirodnim kataklizmama. Svi učesnici u projektu bili su afirmisani stručnjaci koji se bave istraživanjima osobina materijala od kojih su spomenici kulture sačinjeni, ali i proučavanjem globalnih klimatskih uslova. Nakon završetka projekta nastavljena su dalja istraživanja u ovoj oblasti.

Savet Evrope je podržao i rad *Evropskog univerzitetskog centra za kulturnu baštinu* u gradu Ravelo u Italiji (*European University Centre for Cultural Heritage)* i organizovanje kurseva o uticaju klimatskih promena na kulturna dobra. U realizaciji ovog programa učestvovali i pojedini istaknuti stručnjaci angažovani na projektu *Nojeva barka*. Sličnim problemima su posvećene i studije u okviru *Centra za održivo nasleđe na Univerzitetskom koledžu u Londonu* (*Centre for Sustainable Heritage,University College London*).

Uz pomenuto, treba istaći i značaj rezultata sprovedenih radionica u okviru projekta ARCCHIP (*Advanced Research Centre for Cultural Heritage Interdisciplinary Projects*) koji predstavljaju niz primera dobre i loše prakse zaštite kulturnog nasleđa u uslovima klimatskih promena. Nekoliko projekata bilo je usmereno na zaštitu od poplava, kao što je projekat CHEF, potom nemački projekat DISFLOOD (*Disaster Information System for Large-scale Flood Events using Earth Observation*) posvećen posebno zaštiti gradskih područja, među kojima je veliki broj mesta sa bogatom kulturom i istorijom. Niz projekata u EU usmeren je na mapiranje područja u kojima vlada opasnost od prirodnih kataklizmi i razvoju prekogranične saradnje radi prevencije i otklanjanju njihovih posledica.

Pojedine međunarodne organizacije donele su smernice i akcione planove namenjene borbi protiv prirodnih katastrofa. Neki od najznačajnijih su dokumenti organizacija, kao što su Savet Evrope, ICCROM, ICOM, IFLA (*International Federation of Library Associations and Institutions*). Oni uglavnom ne doprinose direktno međunarodnim aktivnostima namenjenim zaštiti kulturnog nasleđa, ali utiču na jačanje svesti o značaju ovih pitanja i ostvarivanju što uspešnije međunarodne saradnje.

Kao deo međunarodne kampanje pod nazivom „Učinimo moj grad otpornim – Moj grad je spreman" u organizaciji UNISDR (*The United Nations Office for Disaster Risk Reduction*), u Veneciji je marta meseca 2012. godine održana Konferencija čije su glavna tema bila adaptacija gradova Evrope na klimatske promene. Na kraju Konferencije pod nazivom *Building Cities Resilience to Disasters in Europe: Protecting Cultural Heritage and Adapting to Climate Change* usvojena *Venecijanska dekleracija*[192] čiji osnovni cilj je povezivanje lokalnih vlasti unutar država članica EU radi smanjenja negativnih uticaja klimatskih promena na urbane gradske sredine, sa posebnim akcentom na očuvanje kulturne baštine.

[192] *Venice Declaration on Building Resilience at the Local Level towards Protected Cultural Heritage and Climate Change Adaptation Strategies*. Tekst Deklaracije dostupan je na: Sajtu organizacije UNESCO <http://whc.unesco.org/en/news/869>.

6 Prioriteti Evropske unije

U narednim godinama u okviru EU potrebno nastaviti sa kreiranjem zajedničke politike, pravnih i institucionalnih okvira delovanja u oblasti zaštite kulturnog nasleđa od posledica klimatskih promena. Pri tome, Vlade država članica moraju da pokažu veću spremnost za rešavanje ovih problema u okviru nacionalnih politika i programa. I prioritet Unije u narednim godinama mora biti i integrisanje mera zaštite kulturnog nasleđa u različite strategije i postojeće procedure, uz reformu važeće pravne regulative radi efikasnijeg delovanja u vanrednim okolnostima.

Nedostatak stručnog kadra u oblasti zaštite kulturnog nasleđa i civilne zaštite svakako je posledica nedostatka studijskih programa, obuka i treninga u okviru kojih bi se mogla steći adekvatna znanja iz ove oblasti. Naročito su retki oni koji se odnose na specifične probleme kojima je izloženo kulturno nasleđe određenog područja.[193] U pojedinim zemljama gde postoji visok stepen opasnosti od određenih vremenskih neprilika uvedene su obuke za evakuaciju i reagovanje u slučaju elementarnih nepogoda. Njih veoma uspešno može da preduzima i lokalno stanovništvo. U Italiji, na primer, u osnovnoj i srednjoj školi postoje obuke za reagovanje u slučaju zemljotresa. Sistem reagovanja u slučaju prirodnih nepogoda treba da bude deo obrazovnih programa na svim nivoima. Za dalji napredak neophodni su i dodatni stručni programi u oblasti građevinarstva, radi sticanja novih znanja vezanih za poboljšanje kvaliteta i otpornosti rekonstruisanih objekata nakon katastrofa. Dodatne obuke važne su i za restauratore i konzervatore.

Za programe i projekte namenjene naučno-tehnološkim istraživanjima u ovoj oblasti moraju se obezbediti dovoljna sredstva iz evropskih fondova. Ovakva istraživanja trebala bi da dovedu do novih saznanja o uticaju prirodnih katastrofa na različite materijale korišćene u gradnji. Na osnovu njih bi se unapredile mere praćenja i zaštite kulturno-istorijskih objekata i lokaliteta. Posebno je važno da ovakve studije budu multidisciplinarne i obuhvate znanja u oblasti klimatskih promena. Uz to je neophodno raditi i na podizanju javne svesti o značaju zaštite kulturnog nasleđa i uključivanju lokalnog stanovništva u edukativne programe i pripreme za reagovanje u vanrednim situacijama. U narednom periodu planira se rad na uspostavljanju savremenih baza podataka o prirodnim opasnostima i katastrofama, potom razvijanju sistema praćenja promena na kulturnom nasleđu, kao i formiranju jasnih standarda procene otpornosti nepokretnog graditeljskog nasleđa na različite štetne uticaje. Posebno je važno i da se dovrši započet proces mapiranja potencijalnih rizika i digitalizacije podataka o kulturnom nasleđu i potencijalnim rizicima.

[193] *Studija Evropskog parlamenta*, str. 46.

7 Pravni i strateški okviri zaštite kulturnog nasleđa od posledica klimatskih promena u Srbiji

Ekstremni vremenski uslovi sve češća su pojava u Srbiji. U narednih 100 godina, prema tvrdnjama stručnjaka za klimatske promene, na ovim prostorima očekuju nas manji porast temperature, češća pojava poplava, jakih vetrova i elementarnih nepogoda.

U Srbiji je 2008. godine doneta *Nacionalna strategija održivog razvoja* kojom su ustanovljeni ciljevi ekonomskog, socijalnog, ekološkog i institucionalnog razvoja do 2017. godine.[194] U okviru dela koji se odnosina životnu sredinu, predviđeno aktivnije sprovođenje politike zaštite klime i ispunjenje obaveza iz međunarodnih dokumenata, kao i izrada akcionog plana adaptacije različitih privrednih sektora.[195]

Pored *Nacionalne strategije održivog razvoja* usvojene su i pojedine sektorske strategije, kao i druga dokumenta koji se, između ostalog, odnose na korišćenje prirodnih resursa i dobara životne sredine.[196] Vlada Republike Srbije usvojila je *Predlog Strategije razvoja energetike do 2025. godine*[197] kojim je predviđeno povećanje proizvodnje struje iz obnovljivih izvora, smanjenje emisije štetnih gasova i povećanje energetske efikasnosti. Ipak, još uvek se čeka na donošenje strategije o prilagođavanju na klimatske promene, što je konstatovano kao važan zadatak i u *Izveštaju Evropske komisije* za 2016. godinu.[198]Krajnji cilj ove strategije je usmeravanje srpske privrede ka dugoročno održivom razvoju i smanjenju emisije štetnih gasova.[199]

Stanje u oblasti zaštite kulturnog nasleđa u velikoj meri nedefinisano, nepokriveno odgovarajućom zakonskom regulativom, neusaglašeno sa evropskim i međunarodnim konvencijama i poveljama, kao i savremenim standardima struke. U ovoj oblasti, samim tim, osnovni principi i mere zaštite ne odgovaraju savremenim izazovima, među kojima su svakako i klimatske promene.

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[194] Tamara Gajinov, *op.cit.*, str. 259.

[195] O stanju u oblasti pravne zaštite životne sredine u Srbiji videti više: Zoltan Vig, Tamara Gajinov, *Stanje i perspektive ekološkopravne regulative u Srbiji*, Fakultet za evropske pravno-političke studije, Novi Sad, 2011.

[196] Pored *Nacionalne strategije održivog razvoja*,donete su u pojedine sektorske strategije, kao što su *Strategija poljoprivrede i ruralnog razvoja (2014–2024)*, *Strategija razvoja šumarstva*i dr.

[197] Nova *Strategija razvoja energetike za period do 2025. godine* treba da zameni prethodnu *Strategiju za razvoj energetike do 2015. godine*.

[198] Tekst izveštaja dostupan na:<http://www.seio.gov.rs/upload/documents/eu_dokumenta/godisnji_izvestaji_ek_o_napretku/godisnji_izvestaj_16_eng.pdf>. Srbiji je preporučeno da preispita okvir za svoju politiku u oblasti energetike i klime do 2030. godine. Videti o ovome više: Dragoljub Todić, Aleksandar Macura, *Radna grupa, životna sredina, analize i preporuke*, Evropski pokret u Srbiji, Beograd, 2014.

[199] Videti o ovome više: Zoltan Vig, Tamara Gajinov, *Stanje i perspektive ekološkopravne regulative u Srbiji*... str. 128-138.

Važeći *Zakon o kulturnim dobrima* donet je pre više od 20 godina. Od tada je u međunarodnoj teoriji i praksi došlo do brojnih promena. Zato je potrebno je donošenje novog zakona, kao i posebnih propisa koji bi se odnosili na nepokretno kulturno nasleđe, muzejsko-umetničko-istorijska dela, arhivsku, kinotečku građu, kao i na nematerijalno kulturno nasleđe. Naravno, donošenje ovih pravnih akata moralo bi da prati i donošenje strategije očuvanja, zaštite i održivog korišćenja kulturnog nasleđa. Važeći zakoni koji se odnose na planiranje i izgradnju takođe moraju biti u skladu sa novodonetim propisima iz oblasti zaštite kulturnog nasleđa.

U Srbiji se *Zakonom o vanrednim situacijama*[200] uređuje proglašavanje i upravljanje vanrednim situacijama, sistem zaštite i spasavanja ljudi, materijalnih i kulturnih dobara i životne sredine od elementarnih nepogoda, tehničko-tehnoloških nesreća – udesa i katastrofa, terorizma, ratnih i drugih većih nesreća. Ovim Propisom se predviđa obaveza izrade planova zaštite i spasavanja u vanrednim situacijama. Planovi[201] se sačinjavaju na osnovu prethodne procene ugroženosti, što podrazumeva identifikovanje izvora rizika, sagledavaje mogućih posledica, potreba i mogućnosti sprovođenja zaštite i spasavanja od elementarnih nepogoda i drugih nesreća. U svakom slučaju, procena ugroženosti mora da sadrži i mere za zaštitu kako ljudi, materijalnih dobara i životne sredine, tako i kulturnih dobara, što nije izričito predviđeno odredbama *Zakona o vanrednim situacijama*.[202]

Na osnovu *Zakona o vanrednim situacijama* doneta je i *Nacionalna strategija zaštite i spasavanja u vanrednim situacijama*.[203] U ovom Dokumentu su predočeni osnovni nedostaci sistema zaštite i spasavanja u Srbiji. To su najpre neodgovarajuće sprovođenje preventivnih mera, kao i nepostojanje uslova za doslednu primenu propisa. U sistemu zaštite i spasavanja Srbije postoje i brojni materijalno-tehnički nedostaci, zastarela i nepouzdana oprema, sredstva i vozila za reagovanje. U ovom sektoru potrebno je unaprediti koordinacija između subjekata, saradnju sa nevladinim i privatnim sektorom, ojačati kapacitete lokalne samouprave, naročito u domenu prevencije. Kao ciljevi za naredni desetogodišnji period je postavljena izgradnja snažne institucionalne osnove i olakšavanje

[200] *Zakon o vanrednim situacijama* (*Službeni glasnik Republike Srbije*,br. 111/2009, 92/2011, 93/2012.).

[201] Pored Nacionalnog plana zaštite i spasavanja u vanrednim situacijama, predviđeno je i donošenje plana za teritoriju autonomne pokrajine i lokalnih samouprava koji moraju biti usklađeni sa Nacionalnim planom. Vlada, na osnovu Procene ugroženosti Republike Srbije, utvrđuje za koje se vrste elementarnih nepogoda i tehničko-tehnoloških nesreća – udesa i opasnosti izrađuju planovi i određuje koji državni organi učestvuju u njihovoj izradi. Bliže propise o sadržaju i načinu izrade planova zaštite i spasavanja u vanrednim situacijama donosi Vlada.U izradi Nacionalnog plana zaštite i spasavanja u vanrednim situacijama učestvuju Ministarstva i drugi organi, u delu koji se odnosi na njihov delokrug rada, koji svoje predloge dostavljaju Ministarstvu, radi pripreme predloga Nacionalnog plana zaštite i spasavanja u vanrednim situacijama Republike Srbije.

[202] Videti član 46 *Zakona o vanrednim situacijama*.

[203] *Nacionalna strategija zaštite i spasavanja u vanrednim situacijama*(*Službeni glasnik Republike Srbije*, br.86/2011).

protoka informacija. Strategija treba da obezbedi i efikasan i efektivan sistem zaštite i spasavanja kroz strateške oblasti koje su usklađene sa *Hjogo okvirom za delovanje*.

Dugoročna vizija prostornog razvoja u našoj zemlji definisana je *Prostornim planom Republike Srbije* (u daljem tekstu: *Prostorni plan*)[204] koji ujedno predstavlja i sastavni deo *Zakona o planiranju i izgradnji*.[205] *Prostornim planom* je postavljeno pet osnovnih ciljeva među kojima je zaštita i održivo korišćenje kulturnog nasleđa i prirodnih resursa. To će predstavljati osnov identiteta Srbije i njenih regionalnih celina, ali i budućeg privrednog, odnosno turističkog razvoja. U *Prostornom planu* do 2020. godine je istaknuto da će prirodno i kulturno nasleđe biti štićeno, uređivano i korišćeno prema evropskim standardima. To podrazumeva implementaciju *Firentinske konvencije o predelu*,[206] evropskih i svetskih konvencija o zaštiti kulturnog nasleđa, konvencija i deklaracija koje se odnose na biodiverzitet i prirodne podsisteme.

Raznovrsnost, kvalitet i stalni porast kategorisanih i prethodno zaštićenih prirodnih i kulturnih dobara, kao i onih na Listi svetskog kulturnog nasleđa, u Srbiji nisu prepoznati kao razvojni resurs. U *Prostornom planu* je istaknuta potreba za donošenjem strategije koja bi bila isključivo namenjena zaštiti kulturnog nasleđa. Kao glavni problemi u ovoj oblasti navedeni su: bespravna gradnja, odsustvo međuregionalnog povezivanja, prevaziđena regulativa, međusektorska neusklađenost pristupa planiranju i zaštiti kulturnog nasleđa, nerešen status Kosova i ugroženost najvrednijih spomenika kulture na tom prostoru.

Kao jedan od ciljeva održivog prostornog razvoja Srbije postavljeno je uvođenje normi i standarda EU kojima se obezbeđuje kvalitet i savremeni pristup upravljanju rizicima od prirodnih nepogoda. Adaptacija na klimatske promene predstavlja važan faktor održivog razvoja pojedinih sektora privrede i ukupnog ekonomskog razvoja. Ipak, konstatovano je da jačanje institucionalnih kapaciteta u ovoj oblasti teče sporo. Za opsežne multidisciplinarne studije o uticaju klimatskih promena na pojedine sektore privrede nedostaju dovoljna novčana sredstva.

Posebno značajni koraci na putu unapređenja sistema zaštite kulturne baštine u uslovima klimatskih promenama jeste prevencija. Srbija je uključena u poseban Program preventivne konzervacije za muzeje Jugoistočne Evrope, kao deo šireg projekta pod nazivom *Revitalizacija kulturnog i prirodnog nasleđa u Jugoistočnoj Evropi*.[207] Ovaj Program zamišljen je kao serija radionica preventivne

[204] *Zakon o prostornom planu* (*Službeni glasnik Republike Srbije*,br. 88/2010.).

[205] *Zakona o planiranju i izgradnji* (*Službeni glasnik Republike Srbije* br. 72/2009, 81/2009 – ispravka, 64/2010 -US, 24/2011, 121/2012, 42/2013 – odluka US, 50/2013– odluka US, 98/2013– odluka US, 132/2014 i 145/2014.)

[206] *European Landscape Convention*. Ova Konvencija usvojena je 2000. godine u Firenci, a počela da se primenjuje od 2004. godine. Tekst Konvencije za odgovarajućim pratećim dokumentima dostupan je na: <https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=090000168o2f80c6>.

[207] Organizatori ovog Programa su: Regionalna alijansa ICOM za Jugoistočnu Evropu NK ICOM Bosne i Hercegovine, Centralni institut za konzervaciju iz Beograda i Muzej savremene umetnosti Republike Srpske.

konzervacije i njene primene u muzejskoj praksi. Prva u nizu radionica posvećena upravo zaštiti kulturnog nasleđa u vanrednim situacijama održana je u Banja Luci. Njena osnovna svrha bila je da doprinese boljem razumevanju rizika koji sa sobom nose prirodne katastrofe i doprinese razmeni znanja o efikasnijim modelima upravljanja kulturnim nasleđem.

Program stručne prakse na slične teme organizovan je i u Republičkom zavodu za zaštitu spomenika kulture za studente četvrte godine Fakulteta za bezbednost maja meseca 2016. godine. Tokom ovog programa održana su predavanja na različite teme, među kojima su bile i one posvećene zaštiti nepokretnih kulturnih dobara u trusnim područjima u uslovima požara i poplava.

Uz ove programe, treba pomenuti i pilot projekat B-Care (*Balkan Cultural Aid Response for Emergencies*)[208] koji sprovode Centar za urbani razvoj u saradnji sa organizacijom *Cultural Heritage Without Borders* iz Albanije. Projekat je finansiran od strane *Prince Claus* fondacije iz Holandije sa ciljem da se skrene pažnja na probleme zaštite kulturnog nasleđa u vanrednim situacijama, poput poplava, zemljotresa, klizišta i sl. Kroz projekat će biti izrađena digitalna mapa rizika, a već je pripremljena i kratka Brošura za reagovanje u vanrednim situacijama. U okviru ovog Projekta organizovan je i trening za volontere. Lista obučenih lica, koja mogu biti kontaktirani za pomoć, nalazi se na sajtu organizacije B-care.

Digitalna mapa obuhvatiće nepokretna kulturna dobra od izuzetnog značaja Srbije i Albanije kojima prete poplave, zemljotresi, klizišta, požari i snežne lavine. Ovakva Mapa služiće svim institucijama koja se bave zaštitom kulturnih dobrima, kao i drugim ustanovama i pojedincima. Uz to, mapiranje će pomoći i planiranju i sprovođenju preventivnih mera zaštite.

Kratka Brošura[209] izrađena u sklopu projekta sadrži korisne savete za preduzimanje preventivnih radnji radi efikasnije zaštite. Neki od njih su: izrada kontakt liste institucija od pomoći u vanrednim situacijama na određenom području, potom izrada liste inventara, ukoliko već ne postoji zapis o inventaru, odnosno lokalitetu, prikupljanje i čuvanje fotografija određenog lokaliteta ili spomenika kulture. Uz to je poželjno sačiniti i listu prioriteta koja će biti bazirana na značaju kulturnih dobara, odnosno na njegovoj umetničkoj, istorijskoj vrednosti, kao i izloženosti rizicima. Ovakva lista olakšaće određivanje prioriteta prilikom evakuacije, spašavanja ili kasnije restauracije. U Brošuri se takođe navodi da je korisno napraviti i listu opreme koja je na raspolaganju u određenoj instituciji, odnosno na lokalitetu tokom vanredne situacije.

Upravljanje vanrednim situacijama u Srbiji zahteva savremeniji pristup. Politika borbe protiv klimatskih promena predstavljala je dugo zanemarenu javnu politiku. U nedostatku strateških dokumenata[210] teško je pronaći odgo-

[208] Više o ovom Projektu dostupno na sajtu Centara za urbani razvoj:<http://centarzaurbanirazvoj.com/b-care/>.

[209] Brošura je dostupna na: <http://sinergija.me/wp-content/uploads/2016/03/B-CARE-Quick-Reference-Brochure-SRB.pdf>.

[210] „Izrada strategije borbe protiv klimatskih promena inicirana je 2012. godine kada je Odsek za klimatske promene resornog ministarstva izradio dokumentaciju za projekat „Izrada Strategije borbe protiv

vore na izazove klimatskih promena i kreirati dugoročnu javnu politiku u ovoj oblasti. Slična situacija je i sa zaštitom kulturnog nasleđa. U ovoj oblasti takođe nedostaje važan strateški dokument kojim bi se odredili dalji pravci njegovog održivog korišćenja i zaštite od sve češćih prirodnih nepogoda.

Izuzev par pomenutih projekata i aktivnosti, u našoj zemlji još uvek nije prepoznata veza između sektora za vanredne situacije i potrebe zaštite kulturnih dobara, pa je u narednom periodu prioritet uspostavljanje institucionalne saradnje i utvrđivanje ciljeva za dalje zajedničko delovanje.

klimatskih promena sa akcionim planom" koji je trebalo da bude finansiran iz sredstava IPA 2012. Na zahtev Delegacije EU dogovoreno je da se projekat prebaci u budžetska sredstva za 2014. godinu, te je definisano da će početak projekta biti u septembru 2015. godine. Konačno, javnost je obaveštena da je realizacija projekta izrade Strategije borbe protiv klimatskih promena sa akcionim planom započeta u septembru 2016. godine i da je nosilac projekta nemačka konsultantska kuća GFA Consulting Group. Za realizaciju ovog projekta ispred Republike Srbije odgovorno je Ministarstvo poljoprivrede i zaštite životne sredine, a projekat finansira Evropska unija. Realizacija projekta započeta je inicijalnom konferencijom koja je održana u Privrednoj komori Srbije, 13. septembra 2016. godine." (Mirko Popović, *Može li Strategija borbe protiv klimatskih promena da doprinese ustanovljavanju politike niske emisije ugljen-dioksida u Srbiji?* Izvor: Beogradska otvorena škola, Pregovori o pregovorima:<http://eupregovori.bos.rs/progovori-o-pregovorima/analize/1463/2016/10/11/moze-li-strategija-borbe-protiv-klimatskih-promena-da-doprinese-ustanovljavanju-politike-niske-emisije-ugljen-dioksida-u-srbiji.html>, posećeno 20.11.2016. godine.

Budućnost zaštite kulturnog nasleđa i urbanih sredina u uslovima klimatskih promena

1 Izazovi zaštite kulturnog nasleđa u uslovima klimatskih promena

Generalno, zaštita kulturnog nasleđa zahteva savremen i integralan pristup. To podrazumeva i prilagođavanje mera zaštite ekstremnim vremenskim uslovima, odnosno sve češćim vremenskim nepogodama. Adaptacija zahteva delovanje na nacionalnom, regionalnom i globalnom nivou. Pristup zaštiti kulturnog nasleđa mora biti takav da se ona integriše u sistem odbrane od prirodnih katastrofa. Ova dva sistema zaštite se trenutno posmatraju odvojeno.

U okviru Evropske unije potrebno je dodatno osnažiti sistem reagovanja u vanrednim situacijama. Trenutno je on prilično heterogen, regulisan različitim pravnim aktima.Uz to, buduće javne politike adaptacije države članica, ali i same Evropske unije, potrebno je da daju veći prostor pitanjima zaštite kulturnih dobara u slučaju elementarnih nepogoda.

Inicijativa za istraživanja o uticaju klimatskih promena na kulturno nasleđe potekla je iz Velike Britanije, da bi se interesovanje za ova pitanja proširilo i u druge zemlje Evrope. Projekat *Nojeva barka* (*Noah's Ark*) koji ujedno predstavlja i prvi značajniji istraživački poduhvat iz ove oblasti dao je značajne rezultate i prognoze o uticaju klimatskih faktora i zagađenja na istorijske materijale i konstrukcije u Evropi. Istraživanje je takođe pomoglo u poboljšanju prakse, kroz razvoj i korišćenje kompjuterskih modela u ispitivanju uticaja toplote i vlage na istorijske građevine. Predviđanja razvijena kroz ovaj model omogućila su upoređivanje sa realnim podacima. Pored ovog, finansirani su i drugi projekti usmereni na razumevanje uticaja klimatskih promena na kulturnu baštinu. Oni objedinjuju zahtevna naučna istraživanja, znanja u oblasti kriznog menadžmenta, treninge i obuke, političke inicijative, ali i potrebu za odgovornim ponašanjem svakog pojedinca koje poboljšavaju adaptabilne sposobnosti čitavog društva. Samo ovakav intersektorski pristup omogućava postizanje značajnijih rezultata u procesu adaptacije.

U narednim godinama potrebno je nastaviti sa kreiranjem zajedničke politike, uz izgradnju čvrstih institucionalnih i pravnih okvira Unije radi efikasnijeg delovanja u oblasti zaštite kulturnog nasleđa od posledica klimatskih promena. Ovo zahteva i značajna sredstva kojima bi se podržali različiti programi i projekti, saradnja između država, radi afirmacije naučno-tehnoloških istraživanja.

Dosadašnje vanredni događaji uglavnom pokazuju da su „kulturni aspekti" javnih politika često neodgovarajući i neprimereni.[211] Interese zaštite kulturnog identiteta i baština veoma je teško pomiriti sa principima adaptacije, jer su neki gubici nenadoknadivi. Ponekad je pojedina kulturna dobra, kada to dozvoljavaju okolnosti, potrebno premestiti, izmeniti njihov vizualni identitet, kako bi se zaštitila od rizika. U nekim slučajevima je veoma teško predvideti sve poten-

[211] W. Neil Adger, Jon Barnett, Katrina Brown, Nadine Marshall, Karen O'Brien, *Cultural dimensions of climate change impacts and adaptation, Nature climate change*, vol 3, February 2013., str. 115.

cijalne rizike, ekonomski i racionalno odrediti ciljeve adaptacije, uvažavajući značaj kulturnog identiteta.

Kulturni aspekti politike prilagođavanja na klimatske promene ne smeju da se zanemare, kako bi adaptacija dala očekivane rezultate, i na pravi način omogućila zaštitu kulturnog identiteta i nasleđa ugroženog područja. Preporuke organizacija, kao što su UNESCO ili Savet Evrope, pokazale su da identifikovane pojedinačne klimatske parametre i sa njima povezane određene rizike treba posmatrati u međusobnoj zavisnosti.[212] Kulturno nasleđe predstavlja odraz društvenog identiteta i socijalne kohezije. Zbog toga, odgovor na izazove klimatskih promena treba da objedini fizičke, kulturne, socijalne, finansijske, turističke i druge potencijale kulturnog nasleđa, kao i sve rizične faktore.

Adaptacija zahteva multidimenzijalno razumevanje uticaja klimatskih promena na kulturno nasleđe. Zato sve odluke i mere koje se preduzimaju u cilju ublažavanja njihovih efekata, zavise, kako od znanja iz oblasti društvenih nauka, umetnosti, tako i od dobrog poznavanja tehnoloških dostignuća i inženjeringa. Uz to, mere zaštite uvek uključuju i određena praktična, zanatska znanja i veštine.

2 Klimatske promene i novi koncept arhitekture urbanih sredina

Arhitektura se oduvek suočavala sa urbanim problemima, pa je tako savremeno projektovanje i gradnju potrebno prilagoditi konceptu održivog razvoja.[213] To znači da je potrebno pronaći „nove forme koje ne samo što će poštedeti stanovništvo klimatskog egzodusa, već i nastaviti da čuvaju krhku ravnotežu više gradova."[214] Arhitektonsko projektovanje je posebnu pažnju poklanjalo premisama koje se tiču globalnog zagrevanja, klimatskih promena i održivog razvoja. Ipak, ono je u nekoliko poslednjih decenija evoluiralo od projektovanja radi očuvanja energije, ka održivom arhitektonskom projektovanju.[215]

Jedno od mogućih rešenja, kao odgovor na porast nivoa mora, je plutajući grad. Ovakav koncept urbanizma XXI veka predstavljaju alternativu tradicionalnom životu u slučaju klimatskih promena.[216] Druga, takođe prilično nerealno rešenje su tzv. *plutajuće kupole*. Tu je i *Green Float*, rešenje japanske kompanije

[212] May Cassar, *Impact of Climate Change on Cultural Heritage, from International Policy to Action*,Izvor: <http://www.getty.edu/conservation/publications_resources/newsletters/26_1/impact.html>, posećeno 01.12.2016.

[213] Ljiljana Blagojević, Dragana Ćorović, *Klimatske promene i estetika savremene arhitekture, u: Uticaj klimatskih promena na planiranje i projektovanje* (ur. Vladan Đokić, Zoran Lazović), Arhitektonski fakultet, Beograd, 2011., str. 25.

[214] Predrag Mihajlović, *Uticaj klimatskih promena na arhitekturu gradova, Zbornik radova sa 4. međunarodne konferencije savremena dostignuća u građevinarstvu 2016*, Građevinski fakultet, Subotica, 2016., str. 950.

[215] Ljiljana Blagojević, Dragana Ćorović, *op.cit.*, str. 25.

[216] *Ibidem*.

Šimicu koji predstavlja grad, čiji bi svaki modul mogao samostalno da primi oko 50 000 stanovnika i razvijao se na okeanu. Module čine osnova od 2 km u prečniku i kula nazvana *City in the sky* (Grad na nebu). Inače, „projekat *Green Float* vizija je grada sa negativnom emisijom ugljen-dioksida – umreženih serija nepreglednih plutajućih ćelija koje ne proizvode CO2 i čije stanovništvo je u potpunosti samodovoljno."[217] Pored ovih rešenja, treba pomenuti i *Lilypad*, projekat arhitekte Vensana Kalba, koji predstavalja ekološko ostrvo spremno da primi oko 50 000 klimatskih izbeglica.[218] U Holandiji, u kojoj je skoro polovina teritorije ispod nivoa mora, projektuju se kuće na vodi. Dovoljno su fleksibilne i mogu podneti podizanje nivoa mora i do 5 m.

Nova arhitektura gradova u značajnoj meri razlikuje od tradicionalnih modela. Ona je u potpunosti inspirisana ekološkim procesima, teži ekonomičnosti, efikasnosti, minimalnoj potrošnji i održivosti, u skladu sa izazovima klimatskih promena. Istovremeno, ekološka pitanja su i duboko etička i filozofska, pa se rešenje problema, sa ciljem opstanka i adaptacije, odnose i na neizbežnu promenu kulture življenja. Tako se stvara tzv. „visoka civilizacija" koja podrazumeva sve neophodno za fizičko, estetsko i kreativno zadovoljstvo ljudi, uz dovoljnu fleksibilnost, radi nužnog prilagođavanja nepredvidivim vremenskim uslovima.[219]

Interesi zaštite životne sredine presudno su uticali na transformaciju urbanog pejzaža i ljudskih naselja. U ovom procesu neophodna je saradnja između arhitekata i inženjera pejzažne arhitekture, kao i stalno učešće zajednice u generisanju i implementaciji projekta. To svakako vodi ka formiranju „novih urbanih iskustava, funkcija i aktivnosti".[220] Međuzavisnost prirode i arhitekture rezultira stvaranju nove urbane sredine i suštinski drugačijeg koncepta življenja, prilagođenog novim ekološkim izazovima.

3 Budućnost prostornog razvoja, upravljanja elementarnim nepogodama i održivog korišćenje kulturnog nasleđa u Srbiji

Prostorni plan Srbije zasniva se na usklađenom ekološkom, ekonomskom, socijalnom i institucionalnom razvoju. To podrazumeva da se u svim oblastima dugoročno na bolji i održiv način iskoriste teritorijalni kapital i njegove komparativne prednosti. Njih čine biodiverzitet, bogato i vredno kulturno i prirodno nasleđe, kao i raznovrsni i atraktivni predeli naše zemlje.

Srbija je pristupila projektu *Evropske kulturne rute* koji je otpočeo još 1987. godine, na inicijativu parlamentarne skupštine Saveta Evrope. Cilj ovog projekta je, između ostalog, i oživljavanje lokalne i regionalne kulturne baštine u cilju

[217] *Ibidem*.

[218] Predrag Mihajlović, *op.cit.*, str. 943.

[219] Ljiljana Blagojević, Dragana Ćorović, *op.cit.*, str. 30.

[220] Predrag Mihajlović, *op.cit.*, str. 945.

daljeg razvoja kulturnog turizma. Na ovaj način se stimulišu nove ekonomski isplative aktivnosti.

Prema *Programu implementacije Prostornog plana za period od 2011-2015. godine* predviđena je revizija i donošenje odluka o kategorizaciji pojedinih kulturnih dobara po ubrzanom postupku. Potrebno je raditi i na novim nominacijama za Listu svetske kulturne baštine. Jula meseca 2016. godine na ovu Listu su uvršteni srednjovekovni nadgrobni spomenici stećci.[221] Nominacioni dosije *Stećci – medieval tombstones*, izradili su stručnjaci iz Bosne i Hercegovine, Hrvatske, Crne Gore i Srbije u okviru međudržavnog projekta, serijske nominacije 30 *nekropola*, odnosno 4100 *stećaka*. U toku rasprave UNESCO-vog komiteta za svetsku baštinu održane u Istambulu prihvaćeni su amandmani koji se odnose na preporuke državama članicama vezanim za zaštitu stećaka od klimatskih promena, urbanizacije i drugih uticaja. Takođe, date su i preporuke o održavaju zone zaštite (tampon zone) i sl.[222] Septembra meseca 2016. godine održan je prvi radni sastanak Međudržavnog koordinacionog odbora (MKO) za implementaciju *Plana upravljanja stećcima*. Ovo telo formirano je sa ciljem očuvanja *stećaka*, razvoja partnerstva sa organizacijama kao što su UNESCO, WHC (*World Heritage Centre*), ICOMOS, ICCROM, ICOM, radi razmene znanja, obavljanja monitoringa konzervatorskih postupaka, utvrđivanja potrebe, pristupa i ciljeva arheoloških istraživanja, kao i način prezentacije nalaza.

Do danas je sastavljena i posebna, odnosno preliminarna lista kulturno-istorijskih spomenika, na kojoj su manastir Manasija, rimsko arheološko nalazište Caričin grad, Smederevska tvrđava, Bač sa okolinom, Negotinske pivnice. Ovome je 2015. godine dodat i Rimski limes u Srbiji.[223] Budući da su na Listu

[221] Stećci se sreću u zapadnim delovima Srbije i Crne Gore, ali i u središnjim i južnim delovima Hrvatske i području Bosne i Hercegovine. Pretpostavlja se da su se pojavili u drugoj polovini XII veka, a najviše su bili izrađivani tokom XIV i XV veka. Dosad je evidentirano oko 70.000 stećaka na 3.300 lokaliteta na teritoriji koja je obuhvaćena Listom svetske baštine UNESCO. Stećci su izrađeni od krečnjaka, najzastupljenije vrste kamena u ovim krajevima. Prema oblicima, stećci se dele na pet osnovnih tipova s varijacijama. To su: ploča, sanduk, slemenjak, krst i stub. Ukrasne motive čine: socijalni i religiozni simboli (različiti oblici krstova, oruđe, oružje, mlad mesec i zvezde, antropomorfni ljiljani, solarni motivi...), figuralne predstave (prikazi muškaraca i žena, životinja, borbe, turnira, lova, povorke ljudi – posmrtna kola) i raznovrsni biljni i geometrijski ornamenti. Izvor: Politika: <http://www.politika.rs/scc/clanak/367432/Marke-sa-motivima-muzejskih-eksponata>.

[222] Izvor: Seecult <http://www.seecult.org/vest/stecci-na-listi-svetske-bastine posećeno>, 06.12. 2016.

[223] Dokumentacija za dunavski Limes u Srbiji pripremljena je u okviru projekta *Danube Limes Brand* koji je podržala Evropska komisija, u cilju da se postojeća dobra rimskog Limesa na teritoriji država u Podunavlju dopune na Listi svetske baštine. Od oktobra 2012. godine partneri u projektu *Danube Limes Brand* započeli su saradnju. Nosilac ovog projekta bio je Institut za istoriju, Univerziteta u Beču u Austriji, koji je koordinirao rad partnera u 8 država. Pored Austrije, u projekat su bili uključeni Slovačka, Mađarska, Italija, Rumunija, Bugarska, Hrvatska. Srbiju je predstavljao Arheološki institut iz Beograda. Projekat je završen krajem 2014. godine. U trogodišnjoj realizaciji u Republici Srbiji učestvovali su i stručnjaci iz Republičkog zavoda za zaštitu spomenika kulture – Beograd i teritorijalno nadležnih zavoda za zaštitu spomenika kulture i muzeja. Videti o ovom projektu više na sajtu Republičkog zavoda za zaštitu

svetske kulturne baštine već upisani Limes u Velikoj Britaniji i Nemačkoj, pokrenuta je inicijativa da se na ovoj Listi nađu sva dobra pod nazivom *Granice rimskog Carstva od Švarcvalda do Crnog mora*. Ovo je praktično našu zemlju uključilo u međudržavnu akciju za serijsku nominaciju Granice Rimskog carstva.

Uz pomenute aktivnosti u *Programu implementacije Prostornog plana za period od 2011-2015. godine,* kao strateški cilj određeno je definisanje i uređenje infrastrukture i saobraćajnica za rašku i moravsku stazu srpske srednjevekovne kulture, kao i uređenje, prezentacija i upravljanje rimskim nalazištima u Nišu i Medijani. Planirano je i da se teritoriji Srbije, pored postojećih 25 prostornih planova, za područja sa posebnim namena, u koja spadaju i one teritorije na kojima se nalaze zaštićena prirodna[224] i kulturna dobra, počev od 2011. godine, izrade i dodatni.

Kada je u pitanju zaštita nepokretnog kulturnog nasleđa od uticaja ekstremnih vremenskih prilika posebno je značajna izrada i usvajanje menadžment planova za spomenike kulture koji se nalaze na Listi svetske kulturne baštine. Glavni cilj ovakvih planova je osiguranje delotvorne zaštite i poboljšanje značaja područja Svetske baštine, putem sveobuhvatnog mehanizma upravljanja. Menadžment planovi identifikuju sve što je značajno za jedan spomenik kulture, pa i izazove koji ugrožavaju njegov kvalitet, kao i mere zaštite i očuvanja. Tu spadaju sve radnje kojima se smanjuju rizici o prirodnih kataklizmi. U našoj zemlji najizraženiji su poplave, seizmički rizici ili pak prekomerne emisije štetnih gasova na određenim područjima.

U *Programu implementacije Prostornog plana za period od 2011-2015. godine* kao prioritet pomenuto je uspostavljanje operativnih, istraživačkih i komunikaciono-informacionih funkcija *Nacionalnog centra za klimatske promene* koji izvršava funkcije *Podregionalnog centra za klimatske promene*[225] za Jugoistočnu Evropu i učešće u implementaciji projekata u okviru Podregionalnog okvirnog plana za adaptaciju za Jugoistočnu Evropu. Srbija je 2011. godine usvojila *Nacionalnu strategiju zaštite i spasavanja u vanrednim situacijama*, ali se čeka na usvajanje sistemskog zakona o zaštiti od prirodnih nepogoda u skladu sa evropskim

spomenika kulture: <http://www.heritage.gov.rs/latinica/radovi_i_aktivnosti_rimski_limes_u_srbiji_na_preliminarnoj_listi_svetske_bastine.php>, posećeno 07.12.2016.

[224] O zaštićenim prirodnim područjima videti više: Zoltan Vig, Tamara Gajinov, *Legal regulation of protected areas according to the law on protection of nature*, u: Aleksić N. (ur.) *Enviromental protection of urban and suburban settlements*, Ecological movement of the city of Novi Sad, Ekološki pokret grada Novog Sada, Novi Sad 2009. str. 367-375. Videti isto: Zoltan Vig, Tamara Gajinov *Pravni koncept zaštićenih područja, postupak njihovog proglašavanja i zaštite prema novomZakonu o zaštiti prirode, Pravo, teorija i praksa*, br. 1/2009., str. 56-67.

[225] Ovaj Centar formiran je na 6. Ministarskoj konferencije „Životna sredina za Evropu." Čine ga ministri i šefovi delegacija 51 zemlje iz UNECE regiona (koji obuhvata zemlje Evrope, kavkaske zemlje, SAD i Kanadu).Formiranjem Podregionalnog virtuelnog centra za klimatske promene, odnosno prihvatanje tzv. Beogradske inicijative za jačanje regionalne saradnje u jugoistočnoj Evropi u oblasti klimatskih promena, odato je priznanje Srbiji i našem naučniku Milutinu Milankoviću.

standardima. Na tom putu svakako je važno i jačanje administrativnih, institucionalnih, tehničkih i stručnih kapaciteta u ovoj oblasti. U očekivanom propisu o zaštiti od prirodnih nepogoda [226] akcenat bi bio stavljen na preventivne mere i aktivnosti, radi smanjenja rizika od elementarnih i drugih nepogoda, efikasno reagovanje i otklanjanje posledica, kako bi se što pre obezbedili uslovi za oporavak i normalizaciju života na pogođenom području. Prema oceni stručne javnosti, upravo se na preventivnim akcijama i zakazalo u vreme velikih poplava u Srbiji 2014. godine, počev od lokalnog, pokrajinskog, pa sve do republičkog nivoa.[227]

Nacrtom Zakona o smanjenju rizika od elementarnih i drugih nepogoda i upravljanju vanrednim situacijama predviđeno je osnivanje Direkcija za smanjenje rizika od katastrofa i upravljanja vanrednim situacijama koja bi trebalo da nastane objedinjavanjem *Kancelarije za pomoć i obnovu poplavljenih područja* Vlade Srbije i *Sektora za vanredne situacije* MUP-a. Usvajanje ovog Nacrta Srbiju bi uvrstilo Srbiju u vodeće zemlje u Evropi, kada je u pitanju kvalitet i usklađenost regulative sa najvišim međunarodnim standardima, odnosno sa *Okvirom za smanjenje rizika od katastrofa iz Sendaja*.

Uz ovo, važno je i podizanje svesti javnosti o značaju korišćenja obnovljivih izvora energije. Kao strateški prioritet u narednim godinama postavljen je i razvoj klimatskog monitoringa, sistema i baza prostornih podataka i informacija o lokalnim i regionalnim promenama klime, uključujući informacije o ekstremnim pojavama i nepogodama, kao i ranjivosti pojedinih područja.

Nakon velikih poplava u Srbiji 2014. godine *Sektor za vanredne situacije* Ministarstva odbrane izradio je kartu rizika od poplava, šumskih požara, klizišta i zemljotresa. Ipak, potrebno je da se izradi i karta područja ugroženih vodnom i eolskom erozijom, koja je poslednji put rađena pre više od 40 godina.

Generalno, održivo korišćenje kulturnog nasleđa i njegova zaštita u Srbiji zahteva značajna finansijska ulaganja. Mnoge države rade na podsticanju razvoja privatno-javnog partnerstva u ovoj oblasti, čime bi se značajno smanjili troškovi. Ustanove i organizacije iz oblasti kulture se podstiču na tržišno ponašanje i kreiranje atraktivnih programe sa dobrim biznis planom. S druge strane, pravna i fizička lica se motivišu da pomognu ovakve programe i ulažu u kulturu.[228]

Vrednost i značaj kulturnog nasleđa nisu u dovoljnoj meri prepoznati u našem društvu. Pri integrisanju međunarodnih akata koji se odnose na kulturno nasleđe u nacionalno zakonodavstvo potrebno je pratiti razvijene evropske države koje su u ovoj oblasti ostvarile i zavidan stepen međunarodne

[226] Videti: *Nacrt Zakona o smanjenju rizika od elementarnih i drugih nepogoda i upravljanju vanrednim situacijama*:<http://www.policijskisindikatsrbije.org.rs/izdvajamo/1180-zakon-o-smanjenju-rizika-od-elementarnih-i-drugih-nepogoda-i-upravljanju-vanrednim-situacijama>, posećeno 09.12.2016.

[227] Marić: *Akcenat na preventivi elementarnih nepogoda*: <http://rs.n1info.com/a135806/Vesti/Vesti/Akcenat-na-preventivi-elementarnih-nepogoda.html>, posećeno 09.12.2016.

[228] Maša Vukanović, *Pogled na kulturu, Zakoni i praske u Srbiji i pet država članica Evropske unije*, Zavod za proučavanje kulturnog razvitka, Beograd, 2011., str. 31.

saradnje. Prioriteti su donošenje nacionalne strategije o razvoju kulture, kao i niza novih propisa iz ove oblasti.

U postojećim strategijama zaštita kulturnog nasleđa se nalazi na marginama. Tako u nacionalnoj *Strategiji održivog razvoja Republike Srbije za period 2007-2017*,[229] zaštita kulturnog nasleđa nije svrstana u osnovne ciljeve. Takođe, ni u *Strategiji regionalnog razvoja Republike Srbije* kulturno nasleđe nije uvršteno u resurse regionalnog razvoja. To ukazuje na činjenicu da važnosti kulturnog nasleđa nije u dovoljnoj meri prepoznata od strane drugih sektora, pa je samim tim nedovoljno zastupljena u strateškim dokumentima koji se odnose ostvarivanje principa održivog razvoja u Srbiji.

Zaštita kulturnog nasleđa zahteva istrajan multidisciplinaran rad na upravljanju složenim procesima. Adekvatna zakonska regulativa i strateški akti potrebno je da omoguće planski pristup, obezbede značajnije mesto kulture u društvu, uz decentralizaciju, ravnomeran kulturni razvitak svih krajeva Srbije, digitalizaciju i stalnu edukaciju u ovoj oblasti. Potrebno je podsticati razvoj menadžmenta kulturnih dobara i unaprediti međunarodnu saradnju. Ovim se stvaraju uslovi u kojima zaštita kulturnog nasleđa može da odgovori mnogobrojnim izazovima savremenog doba, od kojih posebnu pretnju predstavljaju sve češći ekstremni vremenski uslovi kao posledica klimatskih promena.

[229] *Strategija održivog razvoja Republike Srbije za period 2007-2017.* (*Službeni glasnik Republike Srbije* br. 57/2008.).

Appendices

The list of World Cultural properties affected by impacts of climate change[1]

Cultural heritage site	State	Type of climate change impact
The Statute of Liberty	United States of America	Air pollution
The Tower of London	The United Kingdom	Floods
The Sydney Opera House	Australia	Sea level rise
The Parthenon	Greece	Air pollution Acid rains
The Cologne Cathedral	Germany	Air pollution Acid rains
Stonehenge	The United Kingdom	Erosion Floods
Greenwich	The United Kingdom	Floods
The Westminster Palace	The United Kingdom	Floods
The city of Venice	Italy	Sea level rise
The Taj Mahal	India	Air pollution Acid rains
The Indepedence Hall	United States of America	Sea level rise
The city of Dubrovnik	Croatia	Sea level rise
Moai	Easter Islans (Chile)	Sea level rise Coastal erosion
The archaeological site of Chavin	Peru	Land slides Earthquakes Floods
The Old Walled City of Shibam	Yemen	Floods
Birthplace of Jesus: Church of the Nativity and the Pilgrimage Route, Bethlehem	Palestine	Air pollution
The Historic Centre of Shakhrisyabz	Uzbekistan	Rising ground water level

[1] This list has not an official character and represents the result of conducted research of the authors. However, some cultural properties from the list are also on the official List of World Heritage in danger in accordance with Article11(4)of the *Convention concerning the Protection of the World Cultural and Natural Heritage*.

Tombs of Buganda Kings at Kasubi in Kampala	Uganda	The great fire destroyed the main tomb building in 2010.
The Ancient City of Aleppo	Syria	Urbanization, the lack of buffer zone
The Chan Chan Archaeological Zone	Peru	Erosion, Extreme climatic conditions caused by El Niño phenomenon
Chinguetti Mosque	Islamic Republic of Mauritania	Drougt Desertification Seasonal flooding Erosion caused by the water run-off
Seondeoka od Sile Bronze bell of Songdok-dea wang-sin Jong (Emile Jong)	South Korea	Air pollution Acid rains
The national maritime museum in London	The United Kingdom	Sea level rise
Bahai gardens in Haifa	Izrael	Sea level rise

Lista kulturnih dobara u svetu koja su ugrožena klimatskim promenama[2]

Kulturno dobro	Država	Klimatski činioci kao faktor delovanja
Kip Slobode	Sjedinjene Američke Države	Porast nivoa mora Zagađenje vazduha
Londonski toranj	Velika Britanija	Poplave
Sidnejska opera	Australija	Porast nivoa mora
Partenon	Grčka	Zagađenje vazduha Kisele kiše
Katedrala u Kelnu	Nemačka	Zagađenje vazduha Kisele kiše
Stounhedž	Velika Britanija	Erozija Poplave
Grinvič	Velika Britanija	Poplave
Vestminsterska palata	Velika Britanija	Poplave
Venecija	Italija	Porast nivoa mora
Tadž Mahal	Indija	Zagađenje vazduha Kisele kiše
Dvorana nezavisnosti	Sjedinjene Američke Države	Porast nivoa mora
Dubrovnik	Hrvatska	Porast nivoa mora
Moai	Uskršnja ostrva (Čile)	Porast nivoa mora Morska erozija (abrazija)
Arheološko nalazište Ćavin	Peru	Klizišta Zemljotresi Poplave
Stari grad Šibam	Jemen	Poplave
Crkva rođenjanja Hristovog u Vitlejemu	Palestina	Zagađenje vazduha
Stari grad Šahrisabz	Uzbekistan	Porast nivoa podzemnih voda
Kasubi grobnice kraljeva Buganda na brdu Kasubi u glavnom gradu Kampali	Uganda	U velikom požaru 2010. godine izgorela je centralna građevina

[2] Sačinjena lista je rezultat istraživanja autora i nema zvaničan karakter. Ipak, pojedina kulturna dobra nalaze se na zvaničnoj UNESCO listi ugroženih kulturnih dobara, u skladu sa članom 11, tačka 4 *Konvencije o zaštiti svetske kulturne i prirodne baštine*.

Stari grad Alep	Sirija	Preterana urbanizacija, odsustvo zaštitne zone
Arheološki lokalitet Čan Čan	Peru	Erozija, ekstremni vremenski uslovi kao posledica fenomena El Ninjo
Činkveti džamija	Islamska republika Mauritanija	Suša Dezertifikacija Sezonkse poplave Erozija kao posledica promene količine vode
Bronzano zvono kralja	Južna Koreja	Zagađenje vazduha Kisele kiše
Nacionalni pomorski muzej u Londonu	Velika Britanija	Porast nivoa mora
Bahai vrtovi u Haifi	Izrael	Porast nivoa mora

Results of survey launched by the World Heritage Centre on the impacts of climate change on world heritage properties worldwide

A questionnaire survey was launched by the World Heritage Centre among all State Parties to the Convention Concerning the Protection of the World Cultural and Natural Heritage to assess the extent and nature of the impacts of Climate Change on World Heritage properties and action taken to deal with such impacts. Of the 110 responses received from 83 States Parties, 72% acknowledged that Climate Change had an impact on their natural and cultural heritage.

- 46 countries mentioned that they were undertaking specific actions to deal with the issue although most of these actions were limited to the monitoring of the impacts of Climate Change.
- 39 countries reported dedicated research was underway.
- 49 countries mentioned that political support was being mobilized, although this concerned mostly awareness raising actions.
- 71 countries declared themselves to be interested in participating in programs and initiatives aimed to address Climate Change impact on World Heritage sites.
- 50 of those specifically offered pilot sites and 11 co-financing opportunities.

A total of 125 World Heritage sites were mentioned specifically as threatened by Climate Change.

Climate change threats on 46 Cultural World Heritage sites were reported. Almost all cultural sites mentioned were "human built structures" such as archeological ruins, churches, mosque, temples, fortress, etc. Only 4 sites referred to cultural landscapes (among which 2 are traditional agricultural systems).

The climate threats raised for cultural world heritage sites were:

- Hurricane, storms, lightening (11 sites)
- Sea level rise (9 sites)
- Erosion (both wind and water driven) (8 sites)
- Flooding (7 sites)
- Rainfall increase (4 sites)
- Drought (3 sites)
- Desertification (2 sites)
- Rise in temperature (1 site)

Rezultati sprovedene ankete u okviru Centra za svetsku baštinu o uticaju klimatskih promena na kulturna dobra širom sveta

Upitnik je sproveden u okviru Centra za svetsku baštinu među svim državama potpisnicima Svetske konvencije o zaštiti svetske kulturne i prirodne baštine, u vezi sa procenom uticaja klimatskih promena na kulturna dobra u svetu i sprovedenim merama. Od ukupno 110 primljenih odgovora, 83 država, odnosno 72%, je ocenilo da klimatske promene imaju određen uticaj na njihovo prirodno i kulturno nasleđe

- U 46 država su preduzete specifične mere, kao odgovor na ovakve probleme. Većina njih se ipak svela na odgovarajuće mere praćenja uticaja klimatskih promena.
- U 39 država istraživanja su u toku.
- U 49 država uz političku podršku preduzete su mere koje su se uglavnom odnosile na podizanje svesti javnosti o značaja ovakvih problema.
- 71 država se izjasnila kao zainteresovana za učešće u programima i inicijativama koje bave uticajem klimatskih promena na kulturnu i prirodnu baštinu.
- 50 država je ponudilo mesta za početna istraživanja, a 11 priliku za kofinansiranje različitih akcija.

Ukupno 125 prirodnih i kulturnih dobara je proglašeno kao ugroženo klimatskim promenama.

Od ukupno 125 dobara obuhvaćenih istraživanjem, 46 kulturnih dobara je ugroženo klimatskim promenama. Većina zdanja nastala su zahvaljujući ljudskom radu, kao crvke, džamije, hramovi i trvđave i sl. Samo 4 dobra spadaju u grupu tzv. prostorne kulturno-istorijske celine, od kojih su dva kategorisna kao seosko- ambijentalne celine.

Klimatski činioci koji ugrožavaju kutura dobra bili su:

- Uragani, oluje, gromovi (11 objekata)
- Porast nivoa mora (9 objekata)
- Erozija (eolska i rečna, odnosno morska) (8 objekata)
- Poplava (7 objekata)
- Velika količina padavina (4 objekta)
- Suša (3 objekta)
- Dezertifikacija (2 objekta)
- Porast temperature (1 objekat).

The table of principal climate change risks and impacts on cultural heritage

Climate indicator	Climate change risk	Physical, social and cultural impacts on cultural heritage
Atmospheric moisture change	Flooding (sea, river) Intense rainfall Changes in water table levels Changes in soil chemistry Ground water changes Changes in humidity cycles	pH changes to buried archaeological evidence Loss of stratigraphic integrity due to cracking and heaving from changes in sediment moisture Eutrophication accelerating microbial decomposition of organics Physical changes to porous building materials and finishes due to rising damp Damage due to faulty or inadequate water disposal systems; historic rainwater goods not capable of handling heavy rain and often difficult to access, maintain, and adjust Crystallisation Erosion of inorganic and organic materials due to flood waters Biological attack of organic materials by insects, moulds, fungi, invasive species such as termites Subsoil instability, ground heave and subsidence Relative humidity cycles/ shock causing splitting, cracking, flaking and dusting of materials and surfaces Corrosion of metals
Temperature change	Extreme events	Deterioration of facades due to thermal stress Freeze-thaw/frost damage Damage inside brick, stone, ceramics that has got wet and frozen within material before drying Biochemical deterioration

Sea level rises	Coastal flooding Sea water incursion	Coastal erosion/loss Intermittent introduction of large masses of 'strange' water to the site, which may disturb the metastable equilibrium between artefacts and soil Permanent submersion of low lying areas Population migration
Wind	Wind-driven rain Wind-transported salt Wind-driven sand Winds, gusts and changes in direction	Penetrative moisture into porous cultural heritage materials Static and dynamic loading of historic or archaeological structures Structural damage and collapse Deterioration of surfaces due to erosion
Desertification	Drought Heat waves Fall in water table	Erosion Salt weathering Abandonment and collapse
Climate and pollution acting together	pH precipitation Changes in deposition of pollutants	Stone recession by dissolution of carbonates Blackening of materials Corrosion of metals Influence of bio-colonialisation
Climate and biological effects	Proliferation of invasive species Spread of existing and new species of insects (eg. termites) Increase in mould growth Changes to lichen colonies on buildings	Collapse of structural timber and timber finishes Changes in the natural heritage values of cultural heritage sites Changes in appearance of landscapes Changes the livelihood of traditional settlements

Tabela glavnih rizika i uticaja koji prete kulturnom nasleđu kao posledica klimatskih promena

Klimatski faktori	Rizici od klimatskih promena	Fizički, društveni i kulturni uticaji na kulturno nasleđe
Vlažnost	Poplave Prevelike količine padavina Promene u nivou podzemnih voda Promene u hemijskom sastavu zemljišta Prevelika vlažnost vazduha	Promena PH sastava materijala Pucanje materijala Ubrana razgradnja pojedinih materijala Fizičke promene na građevinskim materijalima Kristalizacija Erozija neorganskih i organskih materija zbog viška vode Pojava insekata plesni, gljivica, invazivnih vrsta, kao što su termiti Sleganje materijala i nestabilnost Cepanje, pucanje, ljuštenje, Korozija
Promene u temperature vazduha	Ekstremne vremenske prilike	-Pogoršanje stanja fasada -Oštćenje od mraza usled smrzavanja i odmrzavanja -Oštećenje cigle, kamena i keramike usled kvašenja i smrzavanja materijala -Biohemijska oštećenja
Porast nivoa mora	Plavljenje obale Prodor morske vode	Morska erozija (abrazija) Nastabilnost koje izaziva prodor vode koja remeti vezu između objekata i podloge Stalna plavljenja Migracije stanovništva
Vetar	Snažni udari kiše praćene vetrom Prodor soli i peska praćen vetrom Udari i promene pravca vetra	Prodor vlage u porozne građevinske materijale Statički i dinamički pritisci na istorijske i arheološke objekte Strukturna oštećenja i rušenje Pogoršanje stanja površine objekta usled razaranja

Dezertifikacija	Suša Toplotni talasi	Pustošenje Fizičko raspadanje materijala Iseljavanja stanovništva
Klimatski činioci i zagađenja	Promena u PH vrednosti padavina Taloženje zagađujućih materija u vazduhu	Raspadanje materijala od kamena Tamnjenje površine materijala Korozija metala
Klimatski i biološki uticaji	Širenje invazivnih vrsta Širenje postojećih i novih vrsta insekata Povećanje količine plesni Promene količine lišajeva na objektima	Razaranje drvenih površina Promene u prirodnim karakteristikama objekata Promena u izgledu predela Promena načina življenja u tradicionalnim naseljima

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