Disaster Risk Management of Cultural Heritage in Urban Areas: The Case of Turkey


Assoc. Prof. Dr. Meltem VATAN, Hande YARAŞAN
Bahçeşehir University
Department of Architecture
https://orcid.org/0000-0003-2738-0907
https://orcid.org/0000-0002-4707-7633
meltem.vatan@arc.bau.edu.tr, hyarasan@gmail.com
Received: 25.09.2020
Accepted: 03.11.2020

Abstract: *Within the scope of this paper, a new initial-scale data infrastructure to communicate with 'Disaster Risk Management' and 'Disaster Risk Management of Cultural Heritage in Urban Areas' is aimed to construct the particular major issues based on selected literature resources (such as the basic terminologies, the main principles, the general development process both in worldwide and Turkey and also the general scaled recommendations, etc.). Thus, this initial theoretical information background prepared for this paper will provide construction of the framework for both the 'Comprehensive Theoretical Data Infrastructure Perspectives' and the 'Pilot Proposal Field Application Study will be selected in The Historical Peninsula' as a basis for a 'Ph.D. Study'.*

Keywords: *Disaster risk management, terminology, cultural heritage, historical environments, cultural heritage properties, Turkey.*

Kentsel Alanlarda Kültürel Mirasın Afet Risk Yönetimi: Türkiye Yönetimi

Özet: *Bu makale kapsamında; seçilen literatür kaynakları temel alınarak; belirli teorik ölçekli yaklaşımlar aracılığıyla (terminolojiler, ilkeler, genel olarak dünyadaki ve Türkiye'deki gelişim süreçleri ve genel ölçekli öneriler vb.), 'Afet Risk Yönetimi' ile 'Kentsel Alanlarda Kültürel Miras'ın Afet Risk Yönetimi arasında, temel ölçekli yeni bir veri altyapı bağlantısının kurulması hedeflenmektedir. Böylece, bu makale için hazırlanan bu ön teorik bilgi içeriği; bu makale yazarının 'Doktora Tezi' kapsamındaki, 'Kapsamlı Teorik Altyapısal Bilgi Perspektifleri'nin ve 'Tarihi Yarımada'da Seçilecek Pilot Öneri Alan Uygulama Çalışması'nın ana çatkılarının oluşturulmasına katkı sağlayacaktır.*

Anahtar Kelimeler: *Afet risk yönetimi, terminoloji, kültürel miras, tarihi çevreler, kültürel miras arlıkları, Türkiye.*

1. INTRODUCTION

The main purpose of this study is to evaluate the phenomenon of 'Disaster Risk Management' in general and also to investigate the current relationship with the phenomenon of 'Disaster Risk Management in Cultural Heritage in Urban Areas', which are the major subjects of this paper. Within this regard, this paper aims to bring together the current documents related to literature review sources, after searching among various approaches of relevant experts to construct 'a general scaled infrastructure data source in order to access an integrative guideline system for new inferences'.

2. RESEARCH METHODOLOGY

This paper is based on a research about disaster risk management of cultural heritage in urban areas to be applied on a case study. The method has chosen is a descriptive study and field application.

3. TERMINOLOGY AND PHENOMENA IN THE FIELD OF DISASTER RISK MANAGEMENT

The main aim of this section is to explain the basic concepts of disaster risk management and also to provide the general information database for the readers about these terminologies and phenomena, which constitute the main basis of this paper, before moving on to the main issues being presented within the scope of this paper.

- Hazard (Danger): is defined as a hazardous event or substance or human activity which may cause loss of life, injury or other health problems, loss or damage to property, loss of the environment or services necessary for life, social, economic or environmental damage. This situation can be called as a pre-disaster situation. It involves disaster risk, especially where the human community positions itself in a way which increases vulnerability [1, 2, 3].

- Vulnerability: In terms of vulnerability of any danger, proximity to a high area, the society in this region and the material and moral values of a society (residential areas, production and agricultural areas, natural and historical cultural heritage, technological, social facilities, educational facilities, etc.), poses the concept of 'risk'. An 'event' which occurs in an area with high risk is also likely to turn into a 'disaster'. This possibility increases in direct proportion to the vulnerability of a society [1, 2].

- Risk: is defined as the combination of the likelihood of an event happening and its adverse effects. On the other hand, 'disaster risk', is defined as potential disaster losses such as life, property, service and social life which may occur at a certain time in a certain community or society. Disaster risk reflects the outcome of the constantly present risk situation [2, 3].

- Disaster: is defined as a function of the risk process. This state arise from the combination of hazards, vulnerability and the inability to take measures to mitigate the negative effects of risk. The disasters may have negative effects such as loss of life, injury and illness on the physical and mental social conditions of human beings, as well as damage to property, destruction of assets, interruption or cessation of services, destruction of the natural environment as a result of social and economic turmoil. Furthermore, main disasters which cause damage and also loss within multiple areas, settlements, villages, districts or provinces and affect the physical, economic and social structure within these areas are called as 'regional disasters' [2, 3, 4].

When it comes to the factors affecting the magnitude of disaster can be listed as; the physical size of incident, the distance to residential areas, the economic situation of region or state where being occurred, the strength of legal and administrative system, whether the urbanization is controlled or not (licensed housing, distance from industrial areas, whether the environment is utilized correctly), whether the administrative level is informed in advance about the disaster and also its capacity to take precautions [2].

- Disaster Risk is defined as the potential disaster losses such as life, livestock, service and social life which may occur in a certain community or society at a certain time. 'Physical vulnerability', on the other hand, refers to the measurable damages and losses which the danger can cause in humans, the environment and the economy. Vulnerability is defined as the characteristics of a

community, system or entity which make it vulnerable to the damaging effects of a hazard and the concerning conditions which cause it. There are several situations of vulnerability arising from the various physical, economic and environmental factors. The main examples related to this context are such as the building design errors, the construction errors, the failure to inform the public, the lack of awareness, the lack of official recognition of risks and the preparation for them, the lack of rational management [2, 3].

- Assessment of Risk is defined as a method of analyzing the nature of the risk or potential hazards of the spreading area, evaluating and determining the current vulnerability situation. Hazard and vulnerability together have the potential to damage the exposed persons and the goods, services, living space and the environment on which they depend. The risk assessment consists of reviewing technical features such as location, intensity, frequency and probability of the hazard, analysis of exposure and vulnerability levels, evaluation of the effectiveness of dominant and alternative coping capacity due to the possible risk scenarios [2, 3].

- Disaster Risk Reduction is defined as the systematic analysis and management of the factors which can cause disasters and the providing reduction of disaster risk factors. Within the scope of the United Nations Hyogo Framework adopted in 2005, a comprehensive approach was put forward to reduce the disaster risks. What expected from this framework is to significantly reduce the loss of life and the property caused by the disaster, at the same time the social, economic and environmental losses experienced in the communities or countries. Within the scope of the International Disaster Reduction Strategy (ISDR) System, a tool was provided to ensure the coordination between the governments, organizations and non-governmental actors to assist in the implementation of this framework [2, 3].

- Disaster Risk Reduction Plan is defined as a document prepared by the authorities, a sector or an organization which sets goals and sets goals to reduce disaster risk. These concerning plans are required to be prepared under the guidance of the Hyogo Framework, taking into account the relevant development plans, the resources allocated and the activities about this program. The national level plans are needed to be clear about the hierarchy of administrative responsibilities and are required to be in harmony with the diverse social and geographical situations. The timeframe, responsibilities and funding sources required for its implementation are needed to be fully specified within the scope of these plans [2, 3].

- Integrated Disaster Risk Management is defined as the management process which takes into account all dangers to create a society which can cope with disasters and which can carry out the studies and measures to be taken in the mitigation, preparedness, response and recovery phases of the disaster risk management by benefiting from the whole power and resources of a society [2, 4].

- Crisis Management is defined as the process starting after the disaster begins, continues in the most severe period of the disaster and ends after the impact of the disaster decreases. In this context, crisis management can be defined as all the work to be realized before and during disasters to get out of possible dangers and risks with the least damage. Although the crisis management is actually a part of disaster risk management, it can be wide enough to include disaster management, especially in the first moments of the disaster. In order to prevent the crisis which will occur after a disaster, the managers who will be in the region during the disaster should have the initiative skills [5].

- Disaster Cycle

This phenomenon is called as 'disaster continuum' in Latin, refers to all phases that follow a disaster event and follow each other until the next disaster. The major three phases of disaster risk management plans are as follows [2, 4]:

- Pre-Disaster: Preparation (Risk Reduction) Phase
- During Disaster: Intervention and Search & Rescue (First Aid) Phases,
- Post-Disaster: Recovery and Rebuilding (Humanitarian Aid, Damage Assessment, Remediation and Reconstruction) Phases [2, 4].

The main purpose of the 'Pre-Disaster: Preparation (Risk Reduction) Phase' is to keep the damages which will arise from the negative effects to a minimum with a very fast and healthy intervention. The training activities, which are the most important factor of this phase, should have a wide scope including the training personnel who will perform in disaster management or prepare disaster management plans, the training personnel of public, the non-governmental organizations and public [5].

The 'During Disaster: Intervention Phase' consists of these following issues as [5]:

- first news and transportation to the region [5],
- ensuring security, extinguishing fires if available,
- determining the requirements,
- engaging the medical teams, working of search and rescue teams,
- providing communication, evacuation,
- conservation of temporary shelter areas,
- providing food, beverage, clothing and fuel,
- environmental health regulation,
- damage assessment,
- rapid removal of hazardous debris [5].

The distinction between 'During Disaster: Intervention Phase' which aims to provide the emergency services and the public aid and 'During Disaster: Search & Rescue Phase' which follows this phase isn't clearly defined. The intervention activities such as providing the temporary housing and the clean water can also overflow during the rescue phase [2].

The main purpose of 'Post-Disaster: Recovery Phase' in which the chaotic effects of the disaster are reduced, but the crisis management continues, is to carry out the activities to return life to normal, including such as communication, transportation, water, electricity, long-term shelter and education within the disaster area. As the most complex last stage, the main purpose of of 'Post-Disaster: Rebuilding Phase', beginning from the disaster survivors return to their normal life and starting to determine their priorities, is in order to bring the living standards of the disaster victims at least to their pre-disaster conditions [5].

- Disaster Types

In terms of the countries' sustainable development and social security, disasters are the most significant factor among the other obstacles [6]. The disasters are divided into two main groups as 'nature-induced' and 'human-induced'.

The 'Nature-Induced Disasters' are based on natural events. These disaster types are listed as follows [6]:

- the sudden-developing 'nature-induced disasters' (earthquake, flood, landslide, rock fall, avalanche, storm, tornado, volcano, fire, etc.),

- the slow-developing nature-induced disasters' (erosion and desertification, drought, global warming and climate change, famine, hunger, severe cold, etc.) [6].

The 'Human-Induced Disasters', which aren't based on the power of nature itself, occur as a result of the human interaction with nature such as lack of education, ignorance, carelessness and insufficient precautions. These disaster types are listed as follows [6]:

- the nuclear, biological, chemical accidents [6],
- the information technologies / informatics attacked,
- the transport accidents,
- the industrial accidents,
- the accidents caused by overcrowding,
- the immigrants and displaced people [6].

Due to the natural events which caused loss of life and livestock in Turkey, the most likely disasters to occur are earthquakes, floods, storms, landslides, fires and avalanches. Among these disasters, the ones which are most effective in Turkey on the urban scale are 'earthquakes', 'fires' and 'floods'. Furthermore, due to Turkey's geopolitical position in which, together with terrorism, especially in Turkey's close neighbours of the turmoil and conflict, can affect Turkey's cultural heritage in diverse dimensions [2].

4. INITIAL APPROACHES ABOUT DISASTER RISK MANAGEMENT

The main policy decisions in the international community which address the disaster risk reduction and the development activities together. In this context, through these concerning documents, the significant steps taken for reducing the damages of nature-induced disasters, are as follows [6]:

- Declaring the duration between '1990 - 2000' as the International Decade of Natural Disasters Reduction (IDNDR) accepted by the United Nations (UN) General Assembly (UN 42/169, 1987 numbered resolution) in 1987 [6],
- Yokohama Strategy and Action Plan for a Safer World (1994),
- Millennium Declaration (2000),
- Preparation of the International Strategy for Disaster Reduction (ISDR) (2000),
- Global Report on Disaster Risk Reduction (2004) prepared by the United Nations Development Program (UNDP),
- Disaster Risk Reduction Conference and Hyogo Declaration (2005)
- Preparation of Hyogo Framework Action Plan (2005 - 2015),
- Global Platform for Risk Reduction by Increasing the Resilience of Nations and Communities to Disasters (2007) [6].

4.1. Effective Disaster Risk Management

In fact, this phenomenon can be defined as the realization of the works to be realized at central and local levels and the results obtained at every phase of disaster risk management (risk reduction, preparedness, response and recovery activities) in accordance with the predetermined performances and targets [6].

In line with this approach, the 'effective disaster risk management' is required to be applied through these following principles as [6]:

Integrated is required to be consisted all phases of disaster prevention, mitigation, preparedness, intervention and recovery [6],

Contemporary is needed to be collected all opportunities and resources at one point, adopting total quality management and seeing disaster as a whole [6],

Community Based:

- is required to be implemented with an understanding that ensures the participation of public institutions, non-governmental organizations and volunteers in all phases of the disasters [6],
- is needed to be prevented injuries and loss of life,
- is required to be protected livestock, socio-economic structure, natural environment, cultural and natural properties,
- is needed to be ensured the continuity of business and services, also the sustainable development [6].

4.2. Principles of a Contemporary and Effective Disaster Risk Management System

Pre-Disaster Phase: All the necessary technical, administrative and legal measures are required to be taken within the pre-disaster phase in order for the society to suffer the least harm and physical loss for potential disasters in future. Thus, the disaster mitigation efforts are needed to be included in all stages of the development. In this regard, the raise about existing risk is required to be prevented and a sustainable development is needed to be provided as well. Furthermore, in order for every segment of the society to survive the effects of events with the least damage, the training programs are required to be implemented to provide the necessary information and to train the sufficient personnel as well [6].

During Disaster and Post-Disaster Phases

As many people as possible are required to be rescued and restored to their health. In this regard, The lives and property of people are needed to be protected from the additional dangers and risks which may be caused by the disasters. Moreover, the vital necessities of communities affected by disasters are required to be as soon as possible and also ensure which life becomes normal rapidly. Therefore, the economic, social, environmental and psychological losses for potential disasters in the future should be ensured at the lowest level [6].

4.3. Role of Citizens, Non-Governmental Organizations and Other Non-State Actors in Disaster Risk Management System

The institutions and organizations involved in the disaster risk management are as follows [6]:

- Central Institutions (Ministries etc.) [6],
- Turkish Armed Forces,
- Universities,
- Professional Chambers,
- Civil Society Organizations,
- Turkish Red Crescent Association,
- Media [6].

One of the most significant consequences of the Marmara Earthquake (1999) is that citizens acted spontaneously to deliver aid to the earthquake area, either individually or through informal groups or under the umbrella of a non-governmental organization. As a major development since 1999 that, the citizens increasingly have taken part in various phases of disaster risk management, especially through organizing under the umbrella of foundations and associations as well. In fact, this situation can be described as a reflection of an ongoing change not only in the national context but also in the international context [6].

Disaster risk management is a duty, which can't be transferred by a state whose social state is a constitutional principle, has 'protective' and 'guarding characteristics' in itself. However, disaster risk management is also a day-to-day complex service which requires constant large investments in terms of both the personnel and materials for the disaster events of unknown time. Because of these features, this reality can be mentioned that disaster risk management is an ideal field for the cooperation between non-governmental organizations, public and private sectors. The participation of civil society is also critical for disaster risk reduction. The organizations which perform without expecting financial rewards make can put forward the main contribution in areas such as 'disaster preparedness', 'education-awareness', 'search and rescue', 'emergency logistics services', 'temporary housing', 'nutrition, health' and 'psychological rehabilitation' [6].

5. DISASTER RISK MANAGEMENT SYSTEM OF CULTURAL HERITAGE IN URBAN AREAS

The memory of humanity and settlements, which has been lost beyond the material losses due to the damage of the historical environments as the symbol of the continuity of civilization created by mankind and the values being carried from the past to the present, constitute the terminology of 'cultural heritage'**.** However, worldwide problems haven't yet been fully overcome in an effective and holistic disaster risk management system about the cultural heritage. That is, the documentation and conservation studies are carried out for historical environments are generally not integrated with the disaster risk management plans and the regarding legal and administrative regulations. In this context, the main reasons about the vulnerability of cultural heritage, the failure to keep a systematic record stating that the risks faced by them differing from the other building stock and the awareness which may develop accordingly haven't yet been established [2].

The major factors about the vulnerability of cultural heritage, which raise the frequency and severity of the disasters, are as follows [2]:

- urban spreading beyond the limits of 'habitability' in a safe and healthy way due to uncontrollable population growth [2],
- increasing population in certain regions,
- changing water flood boundaries as a result of faulty urbanization,
- air pollution,
- global warming,
- climate changes,
- inter-country and inter-communal conflicts [2].

In order to protect the irreversible cultural heritage when it is lost, it has become a necessity to put forward a new perspective to reduce the risks about both the nature-induced and the human-induced disasters and the damage in case of occurrence. In this regard, the diverse measures and also practices are required to be defined specifically to manage the risk factors which threaten the cultural heritage [2].

5.1. Terminology in The Field of Cultural Heritage

Cultural Property: 'The terminology of monument with extended content' within the scope of the Venice Charter was kneaded in a different terminology by UNESCO in 1976 and the term 'cultural property' was introduced to cover all material assets about the cultural traditions. This terminology, which was included in 'the Law on the Conservation of Cultural and Natural Assets numbered 2863' assigned in 1983, involves the objects and the antiquities which provide the tangible data about the artistic understanding, the science

and technological level, the social life of diverse civilizations which are the public interest of their conservation [7].

According to the acceptances current in Turkey, the values being protected in the world is gathered in the terminology of 'natural and cultural properties'. In this regard, this terminology being divided into two main groups as 'movable cultural properties' and 'immovable cultural properties', when it comes to 'immovable cultural and natural properties' divided into as 'monuments' and 'sites' within itself [7].

Site: The areas which are natural or man-made or the common product of both are called 'sites'. Due to their characteristics, sites are classified as 'natural', 'historical', 'archaeological', 'urban', 'rural' and 'complex' [7].

Urban Site and Complex Site: The streets, neighborhoods and areas which have preserved the harmonious order, architectural integrity and urban equipment of the old cities are defined as 'urban sites'. Areas which have at least two site features are defined as 'complex sites' [7].

Historical Environment: While the terminology of historical environment mostly refers to 'urban sites', also 'rural', 'historical' and 'archaeological sites' are considered in this regard. The historical environments, which are considered as open-air museums concerning past life styles, are an indication of the creativity of societies with their admirable general appearances and rich arrangements with various styles and forms, also elaborate craftsmanship [7].

5.2. Development in Recent Decades About Disaster Risk Management System of Cultural Heritage in Urban Areas

UNESCO's Convention on the Conservation of the World Cultural and Natural Heritage (1972) emerged as a result of the increasing threat of extinction of a wide variety of the cultural and natural heritage items located in a wide geography. Until the 1990s, many natural and human-induced phenomena caused the expression of the terminologies about the preparation for potential risks about the historical environments and cultural heritage. In this context, the emphasis on risk preparedness was highlighted within the scope of report involving the years of 1972-1992, in which UNESCO's work related to the World Heritage Convention was evaluated [8].

In 1992, with the call of ICOMOS, Inter-Institutional Task Force (IATF - UNESCO, ICOMOS, ICOM, ICCROM, ICA and other relevant institutions) meetings were realized. Within these meetings held with the participation of experts on the subject, these following subtitles as [8, 9]:

- financing of disaster risk management in cultural properties and historical environments [8, 9],
- emergency response,
- documentation,
- training and guidance,
- awareness

were discussed for each phase defined as 'pre-disaster', 'during disaster' and 'post-disaster'. The necessity of coordination with the preparation studies for the general disaster risks on an international scale was emphasized [8, 9].

After these meetings held by IATF, the following issues are as:

- Within the scope of 'Operational Guidelines' adopted at the World Heritage Committee's meeting held in Phuket in 1994, the concept of risk was comprehensively discussed for the first time [8, 10].
- In 1996, as a result of the Canadian Blue Shield meeting held in Quebec, Canada, a declaration titled as 'Cultural Heritage and Risk Preparedness' was issued [8, 11].
- In 1997, with the call of Japan, Kobe / Tokyo Conference was held under the title of 'Preparing Cultural Heritage for Risk' and a declaration text was produced as a result of this conference [8, 12].
- In 1998, referring to the training and the guidance title of IATF, ICCROM published 'Risk Preparedness: Management Guide for World Cultural Heritage' [8, 9].
- After the great earthquake that took place in Kobe in 2005, the 'Kobe Disaster Risk Reduction Conference', which was held in the same year with wide participation, also included the title of 'Risk Management in Cultural Heritage'. Due to the increased sensitivity on this subject, 'Risk and Risk Management Concepts' have been reflected in the decisions and the practices of the World Heritage Committee since 2005 [8].

In this context, the following issues about World Heritage Committee are as:

- At the 29th meeting actualized in Dubran in 2005, the proposals resulting from the Kobe / Tokyo Conference were accepted [8, 13].
- In accordance with the decision taken for the preparation of thematic guides at the 30th meeting held in Vilnius in 2006, 'Disaster Risk Management Guide' was published in 2010 [8, 14].
- 'Risk', 'Risk Management', 'Risk Management Plan' were discussed within the scope of all 'Application Guides' published in 2005, 2008, 2011 and 2013 [8, 10].

6. MAIN UNIVERSAL APPROACHES ABOUT DISASTER RISK MANAGEMENT SYSTEM OF CULTURAL HERITAGE IN URBAN AREAS

Disaster risk management of cultural heritage in urban areas being shaped towards the conservation of properties involved in the World Heritage List. One of the significant goals of the World Heritage Convention is to make it a compulsory for the authorities responsible about the conservation of cultural heritage within the list to establish the sufficient legal, administrative, technical infrastructure and to ensure that the states attain the similar developments for the national cultural heritage as well [8].

Although the 'cultural heritage properties' are considered belonging to the geography they are physically related to, belonging to a place where they can't be limited due to their universal belonging, in other words can be described as the 'common memory of humanity'. This belonging is measured by 'Outstanding Universal Value', which is defined as 'cultural and / or natural significance which is extraordinary enough to transcend national boundaries and have common significance for all humanity's present and future generations'. Many actions such as the detection, conservation, preservation and promotion of the cultural heritage, which are defined as 'World Heritage', have the characteristics of 'Outstanding Universal Value' being carried out in accordance with the 'World Cultural and Natural Heritage Conservation Convention' signed by UNESCO (United Nations Educational / Scientific and Cultural Organization)'s Member States in 1972 [15, 16].

6.1. Identification of Disaster Risks to Cultural Heritage

Various studies are carried out by experts to prevent the loss of value of cultural properties, especially the heritage sites being accepted to the 'World Heritage List' with their outstanding universal values and in order to keep the value-risk balance under surveillance. The World Heritage Center developed two

processes for the effective conservation of cultural properties in accordance with this contract and these concerning studies [15, 16].

According to the conservation status reports and the periodic reporting of cultural heritage properties, the 'World Heritage Committee' considers a list of factors utilized as a standard in heritage studies. Within this list, which consists more comprehensive titles under fourteen primary threat titles and was organized as a result of a two-year study by experts within the field of conservation in 2008, are as follows [15, 17]:

- construction and development [15, 17],
- transport infrastructure,
- public services and service infrastructure,
- pollution,
- biological resource use / modification,
- physical resource extraction,
- local conditions affecting physical tissue,
- social and cultural uses of heritage,
- other human activities,
- climate change and severe weather events,
- sudden ecological and geological events,
- invasive / alien species or extremely abundant species,
- management and corporate factors,
- other factors [15, 17].

6.2. Risk Preparedness and Risk Management Framework of Cultural Heritage

The plans which involve everyone who may be affected, whose deficiencies are identified through the exercises and where risks are balanced against the cultural heritage values, are required to be specific to the region in which the cultural heritage is located in line with the physical and cultural conditions [9, 15].

Based on the major approaches set out within the scope of 'Quebec Declaration', 'Kobe / Tokyo Declaration', 'ICCROM's Risk Preparedness-Management Guidelines for World Heritage', and 'UNESCO's Guidelines for Disaster Risk Management for World Heritage Sites', the major principles, which have been adopted in cultural heritage disaster risk management, are as follows [8]:

- the advanced preparation and planning [8],
- while the planning, handling cultural properties as a whole with all their tangible and intangible dimensions [8],
- taking measures which will have the least impact on the values of cultural heritage [8],
- the priority of the heritage at risk in maintenance and repair programs [8],
- the direct involvement of the local citizens in emergency action plans [8],
- the priority of the conservation of cultural properties in emergencies [8],
- taking all necessary measures to improve and restore cultural properties after disasters [8],
- the conservation principles at all phases which are integrated with risk planning, response and recovery efforts [8],
- passing through the development, testing, reorganization and retesting phases in order for the plan to mature [9, 15],
- raising the awareness among the authorities and the society about the value of cultural heritage properties [9, 15].

The preparation for the risks in terms of 'cultural heritage values' requires a realistic approach and detailed planning framework [15].

'Initial Principles of Pre-Disaster: Preparation Phase' involves reducing primary factors and risk, increasing the asset's resistance to risks, activating detection and early warning systems, developing emergency response plans, (experts, response teams, local residents), creating awareness and the awareness of people directly associated with cultural heritage properties [9, 15]. The basic principles of this phase are as follows:

- evaluating and mapping risk [8],
- reduce risk sources,
- documenting all cultural properties, especially those at risk and strengthening them against the predicted consequences of the disaster,
- developing insurance systems,
- developing and implementing early warning systems,
- preparing action plans for emergencies and making exercises [8].

'Initial Principles of During Disaster: Intervention Phase' involves ensuring the applicability of the response plan and bringing rescue teams to the disaster area right after the disaster. The significance of effective field and simulation studies are required to be emphasized to ensure that the regarding response plan is simple to perceive and familiar to all involved [9, 15]. The basic principles of this phase are as follows [8]:

- implement emergency plans
- mobilizing conservation professionals [8].

'Initial Principles of Post-Disaster: Recovery and Rebuilding Phase' involves 'reducing the negative impact of the disaster', 'reconstruction of common physical structures to provide the images of stability and well-being in the minds of the victims', 'evaluating and developing the competence of actions within the preparatory phase' [9, 15]. The basic principles of this phase are as follows [8]:

- destroying / removing the negative elements of the disaster (removing the flood water, stabilizing the moving parts, etc.),
- doing all the necessary work to recreate the physical and social components,
- reviewing preparedness and response efforts and creating a better risk management model [8].

In the context of these regarding phases, underlined the fact that the scale (single building, historical environment, cultural landscape, archaeological site etc.) are needed to be defined and implemented with the responsible actors (local residents and society, local administration, also regional, national and international institutions and organizations) for these three phases. Rather than just designing buildings, focusing on the human-oriented investments, ensuring that people perceive their values, the necessities and opportunities, emphasizing the vulnerability of the heritage and a good perception about the dangers determine the 'framework of disaster risk management' [8, 9, 15].

7. INTERNATIONAL ORGANIZATIONS AND MODELS FOR DISASTER RISK MANAGEMENT OF CULTURAL HERITAGE IN URBAN AREAS

The first and most important publication which draws attention to the issue of disaster risk management in historical environments is 'Risk Preparedness: A Management Manual for World Cultural Heritage' prepared by Herb Stovel and published by ICCROM in 1998. This study is a valuable guide in terms of 'risk reduction', 'monitoring / prevention mechanisms' and 'what to do during disasters', through considering the potential hazard factors in terms of cultural heritage [2, 9, 18].

Although the first studies which include the historical environment in disaster risk management are mostly related to 'risk reduction and preparedness in the pre-disaster phase', the management system proposal doesn't include it. For instance, 'Integrating Historical Property and Cultural Resource Considerations into Hazard Mitigation Planning' and 'The Risk Management Handbook prepared for the 'Petra-Jordan World Heritage Site' are the other comprehensive studies within this field [2, 18, 19].

7.1. Blue Shield (ICBS)

The International Blue Shield Organization, which was founded in 1996, consists of organizations related to museums, archives, audio-visual supports, libraries, monuments and sites. The International Blue Shield Committee consists of representatives of five non-governmental organizations working in this field. These institutions are listed as 'the International Council on Archives (ICA)', 'the International Council of Museums (ICOM)', 'the International Council on Monuments and Sites (ICOMOS)', 'the International Federation of Library Associations and Institutions (IFLA), Coordinating Council of Audiovisual Archives Associations (CCAAA). Furthermore, Association of National Committees of Blue Shield (ANCBS) was established in many countries [2, 20].

7.2. ICOMOS & ICOMOS-ICORP

ICOMOS (International Council on Monuments and Sites), which is a non-governmental organization affiliated with UNESCO working on a worldwide scale, is a network of experts, founded on the basis of the Venice Charter of 1964, working towards the application of theory, method and scientific techniques about the conservation of architectural and archaeological heritage [2, 21].

ICOMOS-ICORP (International Committee on Risk Preparedness) is a sub-committee of ICOMOS established to work on 'preparedness', 'risk reduction' and 'management of disaster risks for disaster risks' in historical environments [2, 22].

7.3. ICCROM

ICCROM (International Center for the Study of the Preservation and Restoration of Cultural Property), which is an intergovernmental organization, was founded in Rome in 1959, following a proposal presented at the 1956 UNESCO New Delhi Conference. There are various training programs on disaster risk reduction, such as 'first aid to cultural heritage in crisis situations', 'heritage impact assessment' and 'disaster risk management in cultural heritage' [2].

7.4. UNISDR & ISDR

UNISDR (United Nations International Disaster Reduction Strategy) is a strategic framework adopted by the member states of the United Nations in 2000. The objectives are listed as 'to direct and coordinate the efforts of a wide range of partners', 'to reduce disaster losses significantly' and 'to create resilient nations and communities which are essential for sustainable development'. UNISDR brings together all parties involved in disaster risk reduction every two years [2, 23, 24].

Established as the successor of the United Nations Decade of Natural Disaster Reduction Secretariat, ISDR (International Disaster Reduction Secretariat) system consists of 'various organizations working together and sharing information to reduce disaster risks', 'country, intergovernmental organizations', 'non-governmental organizations', 'financial institutions', 'technical structures' and 'non-governmental organizations' [2, 24].

7.5. INSARAG

INSARAG, which was established in 1991 with the initiatives of international SAR teams, is an International Search and Rescue Advisory group**.** Furthermore, INSARAG is a network for the countries and organizations which are likely to be exposed to disasters and where search and rescue activities are carried out against the disasters. The study area deals with 'Urban Search and Rescue (USAR)' and the 'operational field coordination'. The United Nations was chosen as the secretariat of INSARAG to ensure the international participation and coordination [2, 25].

8. DISCUSSION: DISASTER RISK MANAGEMENT SYSTEM OF CULTURAL HERITAGE IN URBAN AREAS IN TURKEY

According to JICA (Japan International Cooperation Organization) Report, four main periods regarding disaster risk management were mentioned as follows [2]:

- before 1944: Post-Event Intervention Period,
- between 1944 - 1958: Period of Partially Mitigating Measures,
- between 1959 - 1999: Period of Ministry Responsible for Disasters and Structuring,
- 1999 and after: The period after the Marmara Earthquake (JICA-İBB, 2002) [2].

Since the early 1960s, the implementation arrangements and the regulations covering all phases in the disaster risk management chain which concern disaster risk management have been actualized. However, Marmara Earthquake of 17 August 1999 revealed the deficiency of current arrangements and also regulations. Due to the disaster analyzes in the previous years occurred in Turkey, the effectively intervene with disasters at the desired level was failed and also disaster risks couldn't be reduced [6].

8.1. Major Role of AFAD About Disaster Risk Management in Turkey

After the Marmara Earthquake, disaster risk management organizations of the various countries, especially the USA, were examined and an effort was carried out to form Turkey's organizations and legislations**.** New legal arrangements were actualized as a result of the efforts to assess the deficiencies and also to create a new system for them. The Law No. 5902 was accepted by the Turkish Grand National Assembly on 29.05.2009, published in the Official Gazette on 17.06.2009 (numbered 27261), entered into force. Through this law, the Disaster and Emergency Management Presidency (AFAD) under the Prime Ministry was established to carry out services related to disasters, emergencies and civil defense [2, 6].
AFAD was activated on 17.12.2009 with the decision of the High Council of Disaster and Emergency. After the decision, Disaster Affairs, Civil Defense and Emergency Management General Directorates of Turkey's duties, AFAD began to be carried out by the Presidency and the Provincial Disaster and Emergency Directorate. Furthermore, through this law, Provincial Disaster and Emergency Directorates were established under the Special Provincial Administration in terms of the governor in the provinces [6].

The responsibilities of AFAD, which was established to provide the services about the disasters, the emergencies and the civil defense, are as follows [6]:

- taking the necessary measures to ensure that the services to be provided are effectively realized at the country level [6],

- preparedness and mitigation before events occur
- ensuring the coordination between the institutions and organizations which carry out the intervention to be performed during the incident and the recovery works to be carried out after the incident,
- producing and implementing the policies on these issues [6].

AFAD is authorized to cooperate and coordinate with the public institutions and organizations, universities, local governments, Turkey Kızılay Association and other relevant civil society organizations, private sector and international organizations. AFAD performs its own tasks through the following service units [6]:

- Planning and Mitigation Department [6],
- Intervention Department,
- Department of Improvement,
- Civil Defense Department,
- Earthquake Department,
- Directorate of Management Services,
- Strategy Development Department,
- Information Systems and Communication Department,
- Legal Consultancy [6].

8.2. Particular Laws and Regulations in Turkey About Disaster Risk Management of Cultural Heritage in Urban Areas

The conservation status of cultural heritage in Turkey, are noteworthy elements in the 'international' and 'national' dimensions when evaluated in the context of disaster risk management. The international dimension is determined by the World Heritage Convention. The conservation status of the World Heritage Sites in accordance with this contract has been determined by the Area Management Plans which have to be made. Within the scope of these plans, a Disaster Risk Management Plan is required. The principles regarding the Area Management and Site Management Plans covering World Heritage Sites and Sites were regulated by Law No. 2863, Law No. 5226, Law No. 3386 dated 1987 and Decree No. 648 dated 2011 [2, 26].

8.2.1. Law No. 2863

The Law on Conservation of Cultural and Natural Properties No. 2863 assigned in 1983 and underwent various alterations over time, constitutes the basic legal text within the field of conservation today. The conservation terminologies and practices about the immovable and movable cultural properties and also the responsible organizations operating within this field were defined by this law. The conservation procedures are carried out within the framework assigned by the law and sub-legislation**.** However, due to this law, there are no concepts such as 'risk', 'risk management' and 'disaster' about both the historical environments and the immovable cultural heritage properties [8].
Considering the conservation processes defined by the Law No. 2863 and its sub-legislation, the most significant factors are as follows [8]:

- Disaster risk management isn't considered as a criterion in the phase of legally determining conservation status (determination / registration procedures). However, data on disasters are included within the scope of the reports in which the board experts have information about the field and this board can be partially effective in the decision process [8].

- Although the engineering services are included in the decisions of the board or being produced by the initiative of the administration during the phase of documentation and project design, the regulations, specifications and guides which determine the principles and procedures for the preparation of these projects are inadequate.
- Although the obligation to take out 'All-Risk Insurance', which is considered as a risk measure in implementation tenders, is aimed at compensation as a result of the loss of cultural heritage properties, preventive enforcements are inadequate.
- Although the terminology of risk management isn't included within the scope of 'Conservation Development Plan' and 'Management Plan' definitions in this law, there are regulations and conventions to influence planning decisions by analyzing the factors which may pose risks.
- In the regulation about the preparation of the management area and the management plans developed for the World Heritage Sites, although there is no direct reference to the risk elements, the 'Disaster Risk Management Guide' prepared by the UNESCO Center for World Heritage Sites is taken into consideration while preparing the management plans. Within the scope of the management plans, the risks are determined, the strategies are prepared against risks and the risk management projects are produced and also 'objectives', 'scope', 'actions' and 'actors' are defined for each disaster risk management project [8].

8.2.2. Law No. 5366

Within the scope of the purposes of Law No. 5366: 'Renewal and Conservation of Deteriorated Historical and Cultural Immovable Properties', there are precautions for natural disaster risks in historical environments. Through this law and implementation regulation, making the necessary arrangements in the areas identified as having natural disaster risk in the renewal project implementations is considered among the authorities of the administration and also assigned to be based on disaster-related studies. Furthermore, if the disaster risk blocks the implementation of these projects completely, assigned within this law that the implementations can be partially or completely liquidated. On the other hand, this law and regulation don't clarify the fact unfortunately that how the disaster risks will be taken into account for the determination of the renewal area [8].

As a result, the intervention and the liquidation procedures related to the disasters can be taken into consideration during the implementation phase, not at the renewal stage of the area and also the issues about the indication of only nature-induced disasters within this law, demonstrates that 'Law No. 5366' wasn't prepared due to the disaster risk management priorities [8].

8.2.3. Law No. 5902

'Risk Management', which is defined as the process of identifying and analyzing hazards and risks at country, region, city or settlement scale, determining opportunities, resources and priorities to reduce risk, preparing and implementing policy / strategic plan / action plans (Law No. 5902 dated 2009: 'the Law on the Organization and Duties of the Disaster and Emergency Management Presidency (AFAD)', Art.2i - Art.8) is based on the relationship of strategic plans such as the management plans for cultural heritage with the components of the risk management process [15].

'Risk' is defined through the definition of 'Hazard x Vulnerability' (the regarding definition in this law as: 'a measure of the values to be lost due to the probability of danger in a particular area') within the scope of the Law No. 5902 Article 2 h. On the other hand, the emphasis on devaluation about the definitions of 'risk' and 'danger' raises anxiety, considering the value of cultural heritage properties. With its evaluation in direct proportion to the loss of value, 'risk level' has transformed from a terminological term to a real evaluation of cultural heritage [15, 27].

8.2.4. Law No. 6305

Through the Law No. 6305: 'Disaster Insurances Law', the regulations were introduced for the insurances to be taken out for various disasters in buildings where earthquakes or insurance companies have difficulties in providing coverage and to cover material losses which may occur as a result of risks. It is compulsory to have earthquake insurance within the scope of this law, which is foreseen to be covered for nature-induced disasters. Although there are difficulties in terms of providing the assurance by the insurance companies for the cultural heritage properties, there isn't any direct regulation within the scope of this law [8].

8.2.5. Law No. 6306

The Law No. 6306 dated 2012 'Transformation of Areas Under Disaster Risk', aimed to determine the procedures and the principles for the recovery, the liquidation and the renewal in areas under the disaster risk and the lands with the risky buildings. The three significant definitions brought by this law are the 'reserve building area', the 'risky area' and the 'risky building'. The transformation of buildings under the earthquake risk was planned with this law. In the first published text of this law, assigned that if there are provisions contrary to this law, Law No. 2863 and many other laws, which are the main basis of conservation, won't be applied. As a result of this fact, in case of the immovable cultural properties are declared as risky areas or buildings, they can be demolished or transformed contrary to the current conservation principles. However, in line with a decision of the Constitutional Court in 2014, the threat of destruction of the cultural heritage was eliminated under the name of 'Reducing The Disaster Risks' [8].

8.2.6. National Earthquake Strategy and Action Plan (UDSEP) 2023

The scope of the National Disaster Response Plan include such as 'preparing cultural properties against earthquake effects on the scale of national plans adopted by the Council of Ministers', 'National Earthquake Strategy and Action Plan 2023' prepared by AFAD, the interventions to be carried out in cultural properties after a disaster. Moreover, the past disasters affected cultural heritage properties of information, can be reached through 'Turkey Disaster Knowledge Base' [8].

8.3. Case Study: Disaster Risk and Management Plan Proposal of Cultural Heritage in Urban Areas in İstanbul (Dated 2011 & 2018)

Considering the high risk of earthquakes in İstanbul, the historical and cultural importance of the city and its rich cultural heritage poses a great risk in terms of world heritage. Turkey's seismicity described and the location of the Marmara Sea in Istanbul due to the magnitude of risks involved were highlighted [2, 28].

The First Management Plan of the Historical Areas of İstanbul, which was included in the World Heritage List in 1985, was completed in 2011. This plan was established in seven main themes as follows [2, 29]:

- management and organization,
- conservation, planning and quality of life,
- accessibility,
- perceiving the importance and value of the area,
- education, awareness and participation,
- visitor management,
- risk management [2, 29].

In accordance with the signed agreement, a 'Site Management Plan' is needed to be prepared within areas declared as World Heritage. Because of these reasons, three 'Risk Management Projects' were defined in

the 'İstanbul Historical Peninsula Management Plan' published in October 2011. These regarding projects are as follows [2, 29]:

- VII-PP28: Disaster Risk Reduction Research Project for Cultural Heritage in the Historical Peninsula.
- VII-PP29: Project on Strengthening and Conservation of Cultural Heritage in the Historical Peninsula against Disaster Risk,
- VII-PP30: Project for Determining Disaster Risk Areas Arising from Street Texture in the Historical Peninsula [2, 29].

Within the scope of the Istanbul Historical Peninsula Management Plan dated 2011, twelve action plans were designed under these three project packages regarding Risk Management**.** In December 2014, a Risk Management - themed focus group meeting was actualized. At the meeting, the outputs of these three project packages included in the 2011 Management Plan and the '2011 Risk Management Strengths - Weaknesses - Opportunities - Threats (SWOT) Analysis' were studied [15, 30].

The experiences gained in the Management Plan dated 2011, ongoing actions, collaborations, changing conditions and laws in this process resulted to emerge new requirements for the Management Plan dated 2018. First of all, the necessity of preparing the Disaster Master Plan specific to the Historical Peninsula Management Plan Area were determined. In this regard, the Law No. 6306 on is in conflict with the Law No. 2863 and the aims-objectives of the Law No. 5366. For this reason, assigned that the registered antiquities bearing disaster risk are required to be reorganized by giving priority to the conservation approach rather than renewal. Moreover, within the scope of this plan, the destruction of historical - cultural values and also the necessity of preventing the unconscious intervention of the local residents and Syrian immigrants living in these areas, whose sense of belonging wasn't developed, were emphasized [15, 30].

According to SWOT Analysis prepared for Disaster Risk Management indicated as 'the existence of institutional structures related to disasters' and 'their data generation capacity'. These institutions are AFAD, AKOM, IMM Directorate of Earthquake Ground Investigation, IMM Directorate of Urban Transformation, IMM KUDEB, Istanbul Project Coordination Unit, Provincial Directorate of Environment Urbanization, Kandilli Observatory, Universities, District Municipalities were indicated as 'strengths'. On the other hand, according to other SWOT Analysis, 'lack of communication between the aforementioned institutions, uncontrolled knowledge in institutions', 'lack of coordination', 'lack of institutional ownership' (not assuming permanent responsibility) and 'lack of disaster scenarios' were indicated as 'weaknesses' [15, 30].

Considering the SWOT analysis within general approach, regarding the relationship between the management plan and risk management as follows [9, 15]:

- arranging overlapping areas of responsibility between stakeholders in disaster response situations,
- considering potential competition to prevent conflict,
- predicting dilemmas which may arise in the event of a disaster,
- creating social awareness [9, 15].

'Risk identification', 'risk reduction' and 'risk management' strategies were determined in line with the goal of increasing the resilience of the management plan area against disasters and emergencies within the scope of 'Risk Management' in the 'İstanbul Historical Peninsula Management Plan' dated 2018. In this

management plan (2018), the alterations were carried out about the theme and also the contents under the following headings as [15, 30]:

- management and coordination,
- conservation-planning,
- conservation-restoration,
- accessibility,
- education, awareness and participation,
- visitor management,
- risk management [15, 30].

8.4. Particular Solution-Based Approaches About Disaster Risk Management System of Cultural Heritage in Urban Areas For Turkey

Within this section, the particular solution-based approaches for Turkey's current conditions will be pointed out due to the current references in order to construct 'new creative perspectives'.

During the 'Pre-Disaster: Preparation Phase', the fact that the vulnerability detection and the risk reduction studies are generally limited to monuments, this leads to a lack of data in historical environments Due to the fact that the problem isn't put forward in general. The other recommendations based on literature resources as follows [2]:

- lack of an effective system for detecting problems and reducing risk in historical environments causes historical environments to disappear rapidly [2].
- lack of an effective administrative infrastructure which can operate a system in which the roles of all actors are clearly defined hinders the work done in this direction.
- lack of an effective management system for managing disaster risks in historical environments causes the failure of the studies to increase manageability and capacity, which is considered to be the most effective method to reduce the disaster risks in historical environments [2].

Within the 'During Disaster: Intervention Phase', the conservation mechanisms which are active in ordinary situations don't come into effect because they don't allow the rapid movement required by an extraordinary situation or these mechanisms cause the loss of even buildings which can be recovered with certain interventions [2].

During the 'Post-Disaster Recovery and Rebuilding Phase', for the damage assessment studies carried out in historical environments, the examination criteria prepared without taking into account the special conditions of these areas are utilized. Expertise in historical construction systems isn't sought for the teams under investigation. Since all the fixing systems are for new construction techniques, many buildings built with the traditional construction systems are evaluated due to new construction systems, even if there is no problem in their structural systems or can be recovered with simple interventions, as a result, these historical buildings are completely eliminated with the concern of life safety [2].

The other solution-based approaches for Turkey based on literature resources as follows:

- Within the disaster risk management system, there is a method problem and a lack of system in the legal and administrative structure and also approach logic regarding the conservation of historical environments and cultural heritage [2].
- An institutional attitude which perceives such a situation as an opportunity to clean up 'accumulated waste' or 'unsuitable' or 'rotten' buildings due to the slogans such as 'pre-disaster

retrofitting' or 'renewal' or 'transformation' leads to transformation and renewal studies to be carried out without taking into account the cultural heritage [2, 31].

- During the calculation of risks and the planning to be prepared as a result, the historical environments shouldn't be perceived as rift areas which need to be gotten. The historical environments are required to be accepted as values which require to be conserved and carried into the future to be adopted as a principle [2].
- The projects which are prepared in historical environments are needed to be adopted jointly by residents who live and also being affected by this environment, the experts and authorities. At the same time, in these type of projects, expected to be prepared in a way to raise the awareness of people residing in these areas, the conservation criteria guaranteed by the international and national laws should also be taken into account. Furthermore, the principle of preserving historical buildings 'with their original material', 'within their original location', 'even their original function' and 'with their former local residents' (excluding the areas of depression) are required to be respected as much as possible [2].
- 'Regulations', 'specifications', 'standards' and 'guidelines' which determine the control principles of conservation processes, the strengthening-conservation criteria, the material standards and the application conditions of engineering services in accordance with the scientific data are needed to be prepared. The existing ones are required to be updated in line with the current conditions and the ways in which the regulations currently valid for new buildings to be utilized are needed to be determined. In line with the documents prepared, the regulations are required to be actualized regarding how the interdisciplinary work will be performed [8].
- The regulations for early warning systems are also needed to be utilized for the cultural heritage and the vulnerability detection methods are required to be developed for the cultural heritage [8].
- Within the disaster risk areas, incomplete documentation studies are needed to be completed. In this regard, for instance, through the 'National Inventory of Registered Real Estate Inventory', which began to work on the creation of immovable cultural assets in digital environment, the integrated disaster hazard maps are required to be overlapped and lists of cultural assets at risk are needed to be completed. Furthermore, the existing data in the establishment of archives are required to be delivered to 'Turkey Disaster Knowledge Bank' and also the past disaster data being obtained from this bank are needed to be utilized in the retrofitting studies [8].
- In the context of budgeting and the resource transfer studies, the priority is required to be given to the factors under disaster risk and for the elements exposed to disasters, the conservation works are needed to be completed primarily [8].
- The participation of AFAD representatives are required to be ensured in the meetings regarding the cultural assets located in disaster risk areas within the body of the High Council and Regional Conservation Council [8].
- The local residents of cultural heritage properties should receive training within the scope of disaster risk management and are needed to be directly involved in the emergency action plans as well [8].
- The emergency plans are required to be made in coordination with AFAD, the post-disaster detection procedures and criterions to be taken are needed to be determined and AFAD personnel are required to be trained to work on the values of cultural heritage [8].
- The preparations are needed to be carried out during and after the disaster through the planning and exercises about the personnel support provided by Ministry of Culture and Tourism [8].
- Through creating an insurance system for the cultural heritage, the principle of continuous care and the periodic monitoring processes are required to be provided an element of the insurance system. Moreover, the supervision for continuous maintenance by the insurance companies or the

independent organizations are needed to be considered as a criterion for the supports and sanctions for the cultural heritage [8].

9. CONCLUSION

The major goal of this paper is to discuss the phenomenon of Disaster Risk Management of Cultural Heritage in Urban Areas and its application to the selected case study area.

As a result of the literature research on the disaster risk management of cultural heritage sites, international organizations involved in the Disaster Risk Management and the main national organisation 'AFAD' and 'Related Institutions' are explored. The significant issue is that in the context of existing laws and regulations related to disaster risk management in Turkey, the subject of Disaster Risk Management of Cultural Heritage is less studied.

Therefore, the main objective of this paper is to apply the proposed method as a case study in the historic peninsula in ıstanbul. The precise decision about 'Pilot Area' of the proposed method is ongoing and potentially related with 'disaster risk management of cultural heritage in urban areas' within Historical Peninsula.

In conclusion, as the subtitle of the Disaster Risk Management concept in Turkey's Disaster Risk Management of Cultural Heritage in Urban Areas in Turkey, this study aims to propose 'theoretical and practical level' of its field. It also can be considered as a critical step for not only providing the acceleration of development and improvement of the existing drawbacks in its field but also going beyond to create 'awareness of the public' in Turkey.

REFERENCES

[1] David, A. (1999). *Natural Disasters*. Netherlands: Kluver Academic Publishers.

[2] Gündoğdu, F. D. (2014). Tarihi Çevrelerde Afet Risk Yönetimi İçin Bir Model Önerisi. Thesis for the Ph.D Degree, İstanbul: Yıldız Teknik Üniversitesi FBE.

[3] URL-16, UNISDR (2009). Terminology: The United Nations Office for Disaster Risk Reductions. http://www.unisdr.org/we/inform/terminology (Access date: 5 February 2009).

[4] URL-1, AFAD (2009). Terminoloji. http://www.afad.gov.tr (Access date: 18 March 2009).

[5] URL-8, Güngör, Y. (-). Temel Arama ve Kurtarma. İstanbul Üniversitesi Açık ve Uzaktan Eğitim Fakültesi Acil Yardım ve Afet Yönetimi Lisans Tamamlama Programı. http://auzefkitap.istanbul.edu.tr/kitap/acilyardimveafetyonetimi_ao/avakcoys.pdf (Access date: 4 November 2020).

[6] Türkiye Cumhuriyeti Kalkınma Bakanlığı (2014). Onuncu Kalkınma Planı 2014-2018: Afet Yönetiminde Etkinlik: Özel İhtisas Komisyonu Raporu.

[7] Ahunbay, Z. (2009). *Tarihi Çevre Koruma ve Restorasyon*. 5. Edition. İstanbul: YEM Publications.

[8] URL-5, Cabbar, Ü. N. & Zıvralı, İ. (2015). Kültür Varlıklarında Risk Yönetimi; Gelişimi, Güncel Durum ve Öneriler. 5. Tarihi Eserlerin Güçlendirilmesi ve Geleceğe Güvenle Devredilmesi Sempozyumu. http://www.imo.org.tr/resimler/ekutuphane/pdf/17506_59_16.pdf (Access date: 17 October 2020).

[9] URL-14, Stovel, H. (1998). Risk Preparedness: A Management Manual for World Cultural Heritage. Rome: ICCROM. http://icorp.icomos.org/wp-content/uploads/2017/10/ICCROM_17_RiskPreparedness_en.pdf (Access date: 2018).

[10] URL-6, Dinçer, İ. (2012). Kültür Mirasının Korunmasında Risklere Hazırlık Kavramının Gelişimi. Mimarlık. (364). http://www.mimarlikdergisi.com/index.cfm?sayfa=mimarlik&DergiSayi=378&-RecID=2906, (Access date: 19 October 2020).

[11] ICOMOS (1996). *1st National Summit on Heritage & Risk Preparedness*, Quebec Declaration. Quebec, Canada.
[12] IATF (1997). The Kobe / Tokyo Declaration on Risk Preparedness For Cultural Heritage. Kobe, Japan.
[13] UNESCO (2005). Summary Report of The 29th Session of The World Heritage Committee.
[14] UNESCO (2010). Managing Disaster Risks for World Heritage. Paris: UNESCO World Heritage Center.
[15] URL-13, Sekban, F. S. (2019). Kültürel Miras Alanlarında Afet Riskleri ve Yönetim Planı İlişkisi: İstanbul Tarihi Alanları Örneği. Kültür Varlıklarına Yönelik Afet Risklerinin Yönetimi. İstanbul: İstanbul Tarihi Alanları Alan Başkanlığı.
http://www.icorpturkiye.org/Makaleler/K%C3%BClt%C3%BCr%20Varl%C4%B1klar%C4%B1na%20Y%C3%B6nelik%20Afet%20Risklerinin%20Y%C3%B6netimi.pdf (Access date: 18 October 2020).
[16] URL-15, UNESCO (2017). Operational Guidelines for The Implementation of The World Heritage Convention. Paris: UNESCO World Heritage Center. https://whc.unesco.org/en/guidelines/ (Access date: 13 November 2018).
[17] URL-2, AFAD (2018). Afet Türleri. https://www.afad.gov.tr/tr/23429/Afet-Turleri (Access date: 13 November 2018).
[18] URL-7, FEMA (2005). Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning. Federal Emergency Management Agency. http://www.fema.gov/environmental-planning-and-historic-preservation-program/integrating-historic-property-cultural (Access date: 22 April 2010).
[19] Paolini, A., Vafadari, A., Cesaro, G., Quintero, M. S. & vanBalen, K. (2012). Risk Management at Heritage Sites: A Case Study of The Petra World Heritage Site. Jordan: UNESCO Amman Office.
[20] URL-9, ICBS (2012). The International Committee of The Blue Shield. http://www.ancbs.org/cms/index.php/en/about-us/about-icbs, (Access date: 12 January 2012).
[21] URL-10, ICOMOS (2011). ICOMOS: International Council on Monuments and Sites. http://www.icomos.org/en/about-icomos/mission-and-vision/mission-and-vision (Access date: 12 November 2011).
[22] URL-11, ICORP (2012). ICORP Mission. http://www.icorp.icomos.org (Access date: 7 August 2012).
[23] URL-17, UNISDR-1 (2011). The United Nations Office for Risk Reduction. http://www.unbrussels.org/agencies/unisdr.html (Access date: 5 April 2011).
[24] URL-18, UNISDR-2 (2011). The United Nations Office for Disaster Risk Reduction. http://www.unisdr.org (Access date: 10 October 2011).
[25] URL-12, OCHA (2010). INSARAG: International Search and Rescue Advisory Group. http://www.unocha.org (Access date: 7 October 2010).
[26] URL-3, Başbakanlık (2014). Resmi Gazete. http://www.resmigazete.org (Access date: 11 November 2014).
[27] URL-4, Başbakanlık Afet ve Acil Durum Yönetimi Başkanlığı (2014). Açıklamalı Afet Yönetimin Terimleri Sözlüğü. https://www.afad.gov.tr/tr/23792/Aciklamali-Afet-Yonetimi-Terimleri-Sozlugu?kelime (Access date: 13 November 2018).
[28] Yalçıner, A. C., Alpar, B., Altınok, Y., Özbay, İ. & İmamura, F. (2002). Tsunamis in The Sea of Marmara: Historical Documents for The Past Models for Future. *Marine Geology*. 190 (1-1): 445-463.
[29] İstanbul Sit Alanları Alan Yönetim Başkanlığı (2011). İstanbul Tarihi Yarımada Alan Yönetim Planı. İstanbul: UNESCO, WHC, Kültür ve Turizm Bakanlığı & İBB.
[30] İstanbul Sit Alanları Alan Başkanlığı (2018). İstanbul Tarihi Yarımada Yönetim Planı. İstanbul.
[31] Kimmelman, A. (1998). Cultural Heritage and Disaster Management in Tucson, Arizona: 31-37; Compiled by: Dirk, D.W., Spenneman, L.H.R. (2004). Disaster Management Programs for Historic Sites.

San Francisco, Albury: Association for Preservation Technology (Western Chapter), The Johnstone Centre & Charles Stuart University.

MELTEM VATAN, Assoc. Prof.Dr.

She received her bachelor's degree from Yıldız Technical University, Department of Architecture in 2002. She received her master's degree in 2005 and PhD in 2010 from the same institution. Between 1999 and 2002, she worked part-time in the field of restoration in the office and on construction sites. Then she continued her academic career after 2002. She worked as a research assistant at Yildiz Technical University, Department of Structural Systems Design until 2011 and currently she works at Bahçeşehir University as Assoc. Prof. and Vice Dean at the Faculty of Architecture and Design. She attended Risk Management of Cultural Heritage Buildings program as part of the UNESCO Chair Program at Ritsumeikan University in Japan and obtained her certificate in 2010. She is a member of ICOMOS Turkey and ISCs of structures (ISCARSAH) and risk (ICORP). She is the author of numerous international and national publications in the fields of traditional construction systems, structural behavior and damage assessment of historical structures, risk assessment, earthquake behavior and cultural heritage.

HANDE YAŞARAN

She is the Ph.D. student of Faculty of Architecture and Design at Bahçeşehir University, İstanbul, Turkey. She holds a M.Sc degree in Surveying and Restoration from Yıldız Technical University. Her interest lie in conservation of historical environments about various historical layers (including of also archeological areas between prior of Roma Period and recent period of Republic of Turkey, especially in Historical Peninsula within Fatih Municipality's borders such as Ayvansaray Neighborhood) and disaster risk management of cultural heritage in urban areas (through constructing theoretical data infrastructure and pilot proposal field application study in particular region in Historical Peninsula as her major topic of Ph.D. Thesis).