



## REPORT ON COLLECTED NORMS AND INCENTIVES



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## Document Information

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Description of the deliverable (3-5 lines)	The report contains references to all the norms, planning rules and financial and economic incentives collected within the partnership countries
Key words	Norms; incentives; survey; seismic norms; building regulation, urban planning regulation; seismic incentive frameworks; post-earthquake planning; insurance against earthquakes

## Document history

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## Definitions & Acronyms

Acronym	Full name
CA	Consortium Agreement
PP	Project Partner
LP	Lead Partner
WPT	Technical Work Package



## Executive summary

The main purpose of the Technical Work Package 1 is to establish a common reference framework concerning regulative, operational and economic-financial instruments of seismic vulnerability and its reduction in the Adriatic and Ionian area, by harmonizing the different instruments and approaches. The first activity, A.T1.1: Collection and systematization of norms and incentives, aims at collecting, analysing and systematizing current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

To achieve the overall objective of the work package, ADRISEISMIC has firstly developed an in-depth study of the existing regulations in the Countries involved regarding the reduction of seismic vulnerability on existing buildings and related forms of financial and economic incentives. A particular attention has been paid at collecting specific regulations and tools addressing the historical parts of the cities, intended as the more fragile but at the same time the richest of cultural heritage.

In order to achieve the best possible comparability between countries, while incorporating as much existing documentation as possible and obtaining its detailed data, it was decided to collect the data in the form of a survey, which has been conducted in two phases. The type of collected material varies from e.g., laws, regulations, incentives, guidelines, manuals, instructions to applications and tools. In the first phase, a basic survey to get a general insight into the current situation in all project partner countries has been prepared. After receiving the first results, the evaluation phase started. With the aim of comparability and obtaining as much information as possible about the existing material, the 2<sup>nd</sup> stage survey proceeded from the 1<sup>st</sup> stage survey.

Basic topics for the collection have been selected. Besides basic information about the country, there were six content topics determined, namely seismic norms, building regulations, urban planning regulation, seismic incentive frameworks, post-earthquake planning and insurance against earthquake. For each of the norms/incentives from the above mentioned topics the information on the following data has been collected: since when the document is in force, if the document relates to the EU regulatory framework, the level at which is valid, who is the promoter and who are the target groups of the document, which period (pre-7post-earthquake) does it relate to, whether it addresses cultural heritage, etc. For each of the topics, each project partner country provided a brief summary of the current state of norms and incentives in the country and an indication of whether all existing documents are actually included in the survey.

In the report, a summary of the first results of collecting existing norms and incentives in all project partner countries is presented in general and per each country separately in dependence on the topic among which the documents are listed. A total number of 88 has been collected, highlighting the high level of complexity that characterizes the seismic vulnerability at urban scale.

Some general findings on the situation in the main topics covered can be drawn. Among the topic of **seismic norms** European Eurocode standards are currently in force in all partner countries. In general, regulation on the national level prevails. All project partner countries have listed **building regulations** in force at national level. Each project partner country has one document representing “national building law”. Only in Italy,

alongside the national legislation, it is possible to find building regulations enacted at a local scale, namely the municipal level. In dealing with the field of ***urban planning regulations*** the laws enacted at national level concerning spatial planning and affecting seismic vulnerability have been inserted for every project partner country. Whereas urban planning is a matter of regions, only instruments in force in those ones interested by the ADRION programme have been considered in the survey. As far as seismic incentive frameworks are concerned, only Italy has financial and economic incentives, while Greece and Slovenia collected some incentives, which help in raising awareness of the seismic vulnerability of built environment. Other countries have no existing (in)direct incentives. On the other hand, all project partner countries have ***post-earthquake planning*** documents, which are in force at national, regional and/or municipal level and which represent action plans in case earthquake/natural disasters happen. Some of the laws among this topic refer to reconstruction of specific territory after an earthquake. ***Insurance against earthquake*** is not obligatory in any of the project partner countries. Optional insurance against earthquake is available in all PP countries. Countries provided slightly different data on the conditions and characteristics of voluntary earthquake insurance.

The collected data represent the first picture of the situation in the considered area. All in all, it will be a good basis for further activities within WPT1. The first one of the latter is a comparison matrix, presented in detail in Deliverable T1.1.2. It should be noted that the report has so far included documents collected within project partner countries by the end of January 2021. It is expected that during the project and especially if there is the event of seismic activity in the ADRION area, the collection of norms and incentives will be further supplemented.

## 1. Introduction

The ADRION area is heavily subject to natural hazards, and it is the European area with the highest seismic vulnerability. The high vulnerability of the area is due not only to the severity of earthquake events, but also to the high population density and to the important value of the Cultural and Natural Heritage, confirmed by a large number of UNESCO World Heritage Sites and UNESCO Geoparks.

The lack of homogeneous and comparable policies for addressing seismic risk prevention is among the three main challenges ADRISEISMIC project aims to tackle. In this framework, the main purpose of the WPT1 “Harmonization of regulative and incentive-based approaches” is to establish a common reference framework concerning regulative, operational and economic-financial instruments of seismic vulnerability and its reduction in the Adriatic and Ionian area, by harmonizing the different instruments and approaches.

The reference context is the current European and National legislations and any further reference (i.e., Guidelines, recommendations, fiscal incentives) to reduce seismic vulnerability by programming anti-seismic interventions.

WPT1 consists of three activities through which the main goal will be achieved.

This first activity, **A.T1.1: Collection and systematization of norms and incentives**, aims at collecting, analysing and systematizing current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State. The aim is to establish a shared approach to the problem of seismic vulnerability and its reduction, in order to allow planning interventions for vulnerability reduction, to be based on the same reference standards, and therefore ensure a higher security and quality of the living environment, reducing risks for people and the environment.

In the next activity, **A.T1.2: Assessment and systematization of norms and incentives**, the project will systematize the collected norms, identifying gaps and good practices in order to share uniform reference standards among the partnership. Thanks to the comparison matrix (D.T1.1.2), the norms and incentives collected during the previous activity will be deeply analysed and gaps and good practices will be identified within the regulative and normative tools of the involved Countries. This activity will lead to the definition of common normative and regulative advanced standards for seismic vulnerability reduction (D.T1.2.1) by capitalizing existing good practices, such as the excellence of some regulative frameworks concerning the recovery of many urban centers and buildings that have been damaged after significant seismic events, as well as notable urban planning tools and regulations, such as the restoration plans of the historical centers. This activity will lead to the definition of 6 Roadmaps (D.T1.2.2), one for each Country involved in ADRISEISMIC, tailored thanks to the local workshops in A.T1.3.

Finally, within the last activity, **A.T1.3: Tailoring and validation of common standards for norms and incentives**, ADRISEISMIC will define specific recommendations for improving norms and incentives for reducing seismic vulnerability of urban centres at national and regional levels, with special regards to those Countries where those instruments will emerge as less effective. This activity runs in parallel with the previous one and is aimed at validating and tailoring the common advanced standards sketched in A.T1.2 within the specific territorial contexts. Notably this activity will finalize the systematization of legislative, regulative and

financial instruments performed at national/local level by involving local stakeholders and TGs as well as the Associate Partners through 4 specific local workshops with the aim of assessing the feasibility of the proposed approaches and to identifying pathways to influence the current practices and rules for seismic retrofitting and seismic vulnerability reduction in each Country involved. This activity will tailor the contents of the 6 Roadmaps that will be finalized in A.T1.2 (D.T1.2.2).

While all PPs are involved in the collection of norms and incentives in place within their own Countries, the Universities and research centres (LP, PP6-7) will be primarily involved in systematizing and assessing current norms and incentives, while territorial bodies and administrations (PP3,4,5,8) will be primarily involved in identifying how to improve their norms and procedures with the aim of a higher harmonization and standard of the regulations for increasing the effectiveness of seismic retrofitting.

To achieve the overall objective of the work package, ADRISEISMIC has firstly developed an in-depth study of the existing regulations in the Countries involved regarding the reduction of seismic vulnerability on existing buildings and related forms of financial and economic incentives. Particular attention has been paid at collecting specific regulations and tools addressing the historical parts of the cities, intended as the more fragile, but at the same time, the richest of cultural heritage.

This report represents an important step to acquire key knowledge to understand the regulative and incentive-based approaches of the ADRISEISMIC six involved countries. Together with the Deliverable T1.1.2 Comparison Matrix, it will be used as the starting point for the further project activities to assess and systematise the regulatory, policy and planning framework. It will ultimately guide policy-makers towards the improvement of their regulative framework, to ensure the common challenge of seismic vulnerability reduction is addressed.

***Deliverable T1.1.1*** presents a report on norms and incentives collected within the first activity of the WPT1. The collection of all the existing norms and incentives has been carried out in all participating countries: Italy, Croatia, Albania, Serbia, Slovenia and Greece.

In the following, Chapter 2 presents all the main topics that represent the basis for collecting the norms and incentives and concern the reduction of seismic vulnerability of the built environment.

Chapter 3 is devoted to the presentation of the data collection methodology and it includes a detailed description of each step. The timetable of all activities performed within A.T1.1 is presented, as well as the content of the survey intended for the collection of norms and incentives.

Chapter 4 summaries the existing situation in each of the participating countries for each of the main topics.

In conclusion, the main findings and facts related to the data collection are presented.

The annexes contain all the original latest versions of the 2<sup>nd</sup> stage survey for each of the participating countries.

## 2. Topics related to the reduction of seismic vulnerability

Seismic vulnerability can be considered as the intrinsic property of a certain element to suffer damage result of a seismic event. It is surely related with building characteristics, however the building elements alone are not able to provide a full picture of the phenomenon. The characteristics of cities, and particularly of historic areas, should also be considered, since the relations among the various elements of the build environment is also contributing to determine seismic vulnerability of urban areas. Therefore, to building a comprehensive understanding on the regulatory framework currently in force in the ADRISEISMIC countries, the collection of norms and regulations should encompass a wide range of topics, able to capture the state of the art from the building scale, to the urban one.

Moreover, although the prevention phase might be considered the most relevant to reduce seismic vulnerability, the investigation should include norms and tools addressing the other phases of disaster risk management, since they can, in turn, inform the prevention phase.

For the purpose of the Activity T1.1 within WPT1, specific topics have been identified in order to provide as best as possible an overall picture of the regulatory framework for the reduction of seismic vulnerability of built environment in all project partner countries. Past experience and research in this field indicate the main topics that can contribute to the desired goal from various perspectives. In order to systematically collect existing norms and incentives in all participating countries, six topics, common to all project partner countries have been identified. Each of the topic can – as long as there are appropriate norms, incentives or other tools – make a decisive contribution to reduce seismic vulnerability. For the purpose of this activity, the following topics have been determined:

- Seismic norms
- Building regulations
- Urban planning regulation
- Seismic incentive frameworks
- Post-earthquake planning
- Insurance against earthquakes

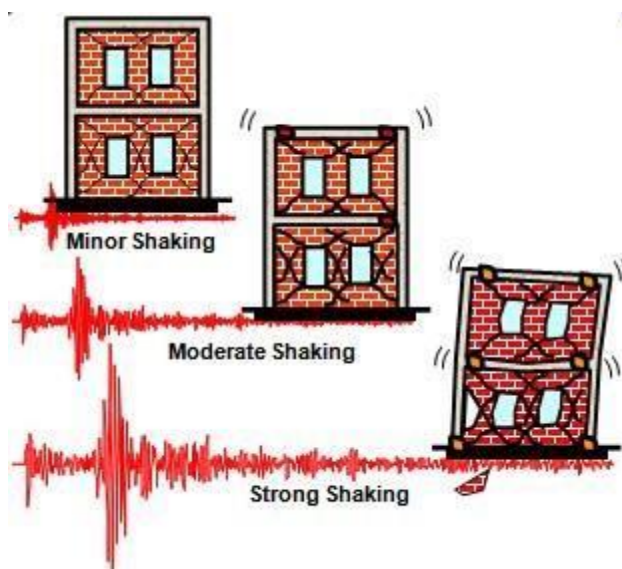
In the following, each subchapter is dedicated to one of the topics listed above. Explanations are given to describe the relevance of each topic and how it contributes to reduce seismic vulnerability. It should be emphasized that we are primarily interested in those norms and incentives related to the reduction of seismic vulnerability.

### 2.1 Seismic norms

Seismic vulnerability is affected by several factors. Based on the location of the building, the local seismic hazard is determined. On the other hand, materials, geometry, technology and quality of construction largely determine the seismic resistance of the building. When building is located in the region with high seismic risk, it is extremely important to take this aspect into account (Figure 1).

The topic seismic norms is dedicated to all regulations and other existing documentation dealing with the design of new structures and assessment of existing ones taking into account their seismic resistance. Seismic norms are type of building documents designed to protect property and life in buildings in the event of an earthquake. Seismic norms were created and developed in response to earthquakes that occurred in the past and caused enormous damage, especially to densely populated urban centers. Some destructive earthquakes have been the reason for first explicit policy and legal consideration of the seismic safety of structures such as e.g. the 1908 Messina earthquake resulted in the first Italian Seismic Code in 1909 [1], also one year after the 1963 Skopje earthquake, the first Yugoslavian Code for Construction in Seismic Regions (temporary code 1964), was prepared by a committee consisting of international and national experts [2]; The first code for seismic-resistant design for Greece was published in 1959 (Royal Decrees 1959) [3].

Often, seismic norms are thus based on knowledge acquired after earthquakes as well as on laboratory and field research studies. While the goal of such norms is usually to prevent the collapse of buildings and thus casualties, there is an increasing tendency for buildings to be designed to remain usable even after the strongest expected earthquake.



**Figure 1: Example of building response taking into account the requirements of seismic norms [4]**

## 2.2 Building regulations

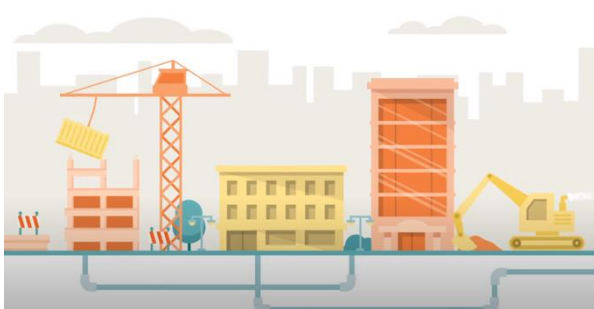
In this category, all the documents providing general rules and building codes for the construction of new buildings have been collected, together with the procedures that can be applied to the transformation of the existing building stock.

Today building regulation represents an opportunity for local governments to conduct significant improvements in the application of measures to intervene on existing buildings [5] since these institutions have the possibility to set through this document in which way it is possible to operate to achieve a more resilient built environment. Building regulations have indeed recently been adopted for encouraging urban

regeneration practices, also including the regulative framework for the application of incentives in case of adoption of seismic reduction interventions [6].

Dealing with a set of rules to be followed when intervening on buildings, this category is the most punctual one when it comes to the definition of the possible interventions on the built environment, mostly referred to the building scale.

The collection of this type of document in the framework of ADRISEISMIC project is considered relevant to establish which building rules and codes are in force in the different countries involved in the project and to investigate how seismic vulnerability reduction is addressed, especially when it comes to historical buildings in historical areas.



**Figure 2: Building regulations [7]**

## 2.3 Urban planning regulations

The urban planning regulation category includes those laws, policy and planning instruments in force to manage the urban planning and the sustainable development of urban areas. In the last decades, one of the pillars for sustainable development of cities has been the disaster risk reduction [8], and spatial planning is increasingly considered as one of the most important instruments to reduce the vulnerability of the built environment to natural hazards, to turn cities into more resilient environments [9]. Since urban planning regulations are in force to stand the utilisation of land, including seismic vulnerability analysis, targeted development strategies in urban plans can reduce the exposure of the involved assets to the risk and, consequently, their vulnerability to earthquake effects.

Urban planning tools seldomly include the topic of disaster risk reduction [10], but these instruments can represent the opportunity to transform building aggregates and urban areas in those ones able to tackle seismic vulnerability through the integration of the concept of prevention of seismic risk and rescue within the urban planning regulations by reducing the exposure of heritage buildings [11].

Under the umbrella of urban planning regulation category, both national and regional laws in force in the six project partner countries have been collected, according to the most appropriate territorial scale of the planning instruments that varies from country to country.





**Figure 3: Urban planning regulations [12]**

## 2.4 Seismic incentive frameworks

Economic-related barriers are one of the most frequent impediments inhibiting seismic retrofitting interventions [13]. Although European cities are in large parts located in seismic-prone areas, seismic vulnerability reduction measures still have a low rate of occurrence if compared, for instance, to the other important class of interventions that can improve the performance of the built environment that deals with the reduction of energy consumption [14].

In this framework, economic and volumetric incentives represent an important instrument to increase the diffusion of seismic vulnerability reduction interventions, especially if combined with informative campaigns aimed at raising awareness towards seismic safety [15] [16].

In addition to financial and economic incentives that directly contribute to reducing the seismic vulnerability of the built environment, incentives that indirectly contribute to this goal could be added to this topic (e.g., various publicly funded projects and their results, instructions, manuals, tools, applications, etc.). Such documents primarily help to raise people's awareness of the seismic vulnerability of the built environment.

In order to distinguish between the so-called direct and indirect incentives, subchapters in this area, financial and economic incentives and raising awareness have been introduced.



**Figure 4: Seismic incentive frameworks [17]**



## 2.5 Post-earthquake planning

The topic post-earthquake planning covers all activities related to the optimization of the seismic response and at the same time supports the awareness of various stakeholders about possible scenarios in the event of an earthquake. Disaster preparedness consists of a set of measures undertaken by governments, organisations, communities or individuals to better respond and cope with the immediate aftermath of a disaster, whether it be man-made or caused by natural hazards. The objective is to reduce loss of life and livelihoods. Simple initiatives can go a long way, for instance training for search and rescue, establishing early warning systems, developing contingency plans, or stockpiling equipment and supplies. Disaster risk reduction and preparedness plays an important role in building the resilience of communities [18].

Many documents among this topic represent plans for how to react in the event of a natural / human / technology-caused event, where each type of disaster is discussed in more detail, including the response to a natural disaster - an earthquake.

The existing norms, incentives and tools help to reduce seismic vulnerability of built environment. The topic covers a wide area. The latter includes general legislation relating primarily to civil protection and its duties in the event of an earthquake.

Also, various educational programs that contain information on a better response to earthquakes should be included. A special place in this area is represented by various protection and rescue plans and seismic risk assessments. There are also various tools (e.g., applications, simulations) to help raise awareness of seismic hazard, with the help of which we learn about the seismic vulnerability of a particular building. In addition to the above, this area also includes other norms and incentives that regulate the situation in the field of our awareness and response in the event of an earthquake.

There are also some of the legislative documents accepted within the European regulatory framework, which are in force in order to provide assistance for the affected countries and populations, e.g. The EU Civil Protection Mechanism has been activated to assist Croatia in the aftermath of a 6.4 magnitude earthquake, following a request for assistance from Croatian authorities on 29 December 2020 [19].



**Figure 5: Post-earthquake planning [20, 21]**

## 2.6 Insurance against earthquakes

Insurance against earthquakes is a form of property insurance that pays a policy holder in the event of an earthquake that causes damage to the property. In the past, earthquake loss was assessed using a collection of mass inventory data and was based mostly on experts' opinions. Today it is estimated using a Damage Ratio (DR), a ratio of the earthquake damage money amount to the total value of a building [22].

Earthquake insurance can cover damage to a home, personal belongings and some other expenses in a case that earthquake happens. As earthquakes can cause harm to home structures. The topic does not directly contribute to the reduction of seismic vulnerability. But in case, earthquake happens, there is a great opportunity to be able to finance seismic strengthening of the property. We should ask ourselves few questions [23]:

- Can we afford the cost of rebuilding or repairing our home if it is damaged?
- Can we replace our personal belongings if they are damaged or destroyed?
- Can we afford to pay for temporary housing and other expenses if structural damage makes our home uninhabitable?

On the other hand, it makes sense to recalculate whether our building is in an earthquake-prone area, i.e. what is the expected strongest earthquake at the location. It is necessary to determine whether the taking out insurance against earthquake is a sensible option for each individual case.

At this point, we emphasize that, given the possibilities offered by insurance against earthquake, this is certainly one of the topics covered in this WP, despite being a bit different from the rest of the topics, as it is not of such an architectural-technical type. Namely, insurance against earthquake contributes to our financial capacity to reduce the seismic vulnerability of the building in the event of possible future earthquakes.



**Figure 6: Insurance against earthquakes [24]**

## 3. Data collection methodology

To achieve the overall objective of the work package, ADRISEISMIC has firstly developed an in-depth study of the existing regulations in the Countries involved regarding the reduction of seismic vulnerability on existing buildings and related forms of financial and economic incentives. A particular attention has been paid at collecting specific regulations and tools addressing the historical parts of the cities, intended as the more fragile but at the same time the richest of cultural heritage.

### 3.1 Methodology

The aim of the first activity within the work package was to collect existing norms and incentives for the purpose of reducing seismic vulnerability in all PP countries. It is important to emphasize that the results of this activity are the basis for all further activities of the work package. In order to achieve the best possible comparability between countries, while incorporating as much existing documentation as possible and obtaining its detailed data, it was decided to collect the data in the form of a survey.

The survey has been conducted in two phases. In the first phase, a basic survey has been prepared. After receiving the first results, the evaluation phase started. With the aim of comparability and obtaining as much information as possible about the existing material, the 2<sup>nd</sup> stage survey has been formed on the basis of the 1<sup>st</sup> stage survey. The material collected in the latter forms the basis for this deliverable.

As part of this activity, all the norms and incentives that are currently in force in each PP country have been collected. The type of collected material varies from e.g., laws, regulations, incentives, guidelines, manuals, instructions to applications and tools.

### 3.2 Data collection timeline

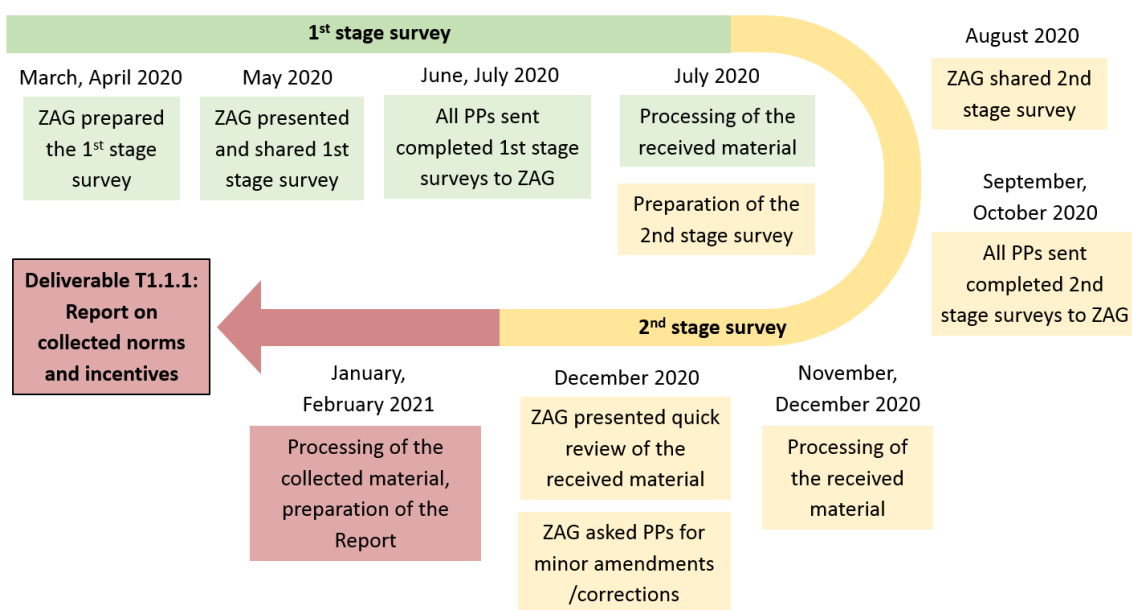
Figure 7 shows the timeline within activity T1.1 to achieve deliverable D T1.1.1. The individual steps for creating a collection of existing norms and incentives of all partner countries are shown.

Data collection steps, their time frames and the content are listed below:

- In accordance with the Application form, in March and April 2020, ZAG has started with a selection of content considered to be key within WPT1. The main topics among which the documentation should be collected, has been selected. A survey, which consisted of an introductory chapter, intended to collect general data on each PP country and 5 content chapters has been formed.
- At the beginning of May 2020, the 1<sup>st</sup> stage survey and instructions for its completion have been presented at the consortium meeting of all PPs. The survey has been sent to all PPs.
- In June and early July 2020, norms and incentives that fall into selected topics, were being collected in all partner countries and all the 1<sup>st</sup> stage surveys were completed.
- In July 2020, ZAG has received the completed 1<sup>st</sup> stage surveys from all participating countries. All collected norms and incentives were reviewed and the starting points for the design of the 2<sup>nd</sup> stage

survey were prepared. The 2<sup>nd</sup> stage survey was designed individually for each country, and proceeded from the completed 1<sup>st</sup> stage survey. Country-specific comments and desired additions have been added. In addition to the above, one of the considered topics was divided into two topics, which enabled more efficient and clearer post-processing of the collected data. The aim of the content of the 2<sup>nd</sup> stage survey was to achieve the best possible comparability between countries and to obtain all existing documents from the topics covered.

- In August 2020, ZAG forwarded the 2<sup>nd</sup> stage survey to all PP countries.
- The submitted survey was presented in more detail at the September consortium meeting. By the end of October 2020, all PP countries have completed the survey.
- In November and December 2020, ZAG studied the collected 2<sup>nd</sup> stage surveys and prepared some additional guidelines.
- In December 2020, the basic results of data collection were presented at the consortium meeting. All PP countries were invited to review their 2<sup>nd</sup> stage survey in order to better specify which norms and incentives do not address seismic issues in their content and thus do not contribute in their current form to reduction of the seismic vulnerability of the built environment. However, these documents have been preserved in the survey with the purpose of defining a clear framework of the current regulations in force in the different sectors and in the different countries. This will generate a knowledge background useful for identifying the target document to which address the implementation of the good practices to be identified in the activity T1.2.
- In January and February 2021, all 2<sup>nd</sup> stage surveys have been reviewed in detail. Subsequently, all the collected documentation has been processed and, on the basis of the latter, a report on the collected norms and incentives in all participating PP countries has been prepared.



**Figure 7: Timeline of the Activity T1.1.**

### 3.3 First and second stage surveys

In the first step, as part of the activities of the WPT1, the 1st stage survey has been prepared by ZAG. It has been prepared in order to help project partners within ADRISEISMIC project to get a first feedback on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State. It was the framework for the 2nd stage survey.

The 1<sup>st</sup> stage survey consisted of the following chapters:

1. An introductory chapter with basic information about the project partner country.
2. Five chapters that relate to specific topics in which the collected norms and incentives can be classified:
3. seismic norms,
4. building regulations,
5. urban planning regulation,
6. seismic incentive frameworks,
7. insurance against earthquake (optional & general legislation).

First three substantive chapters were structured similarly, while the other two chapters were a bit more detailed.

The results (collected documentation) of the 1<sup>st</sup> stage survey presented the basis for the 2<sup>nd</sup> stage survey. The latter was prepared in order to help project partners within ADRISEISMIC project to get more detailed and at the same time comparative information on existing national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

As already mentioned, the 2nd stage survey proceeded from the 1<sup>st</sup> stage survey. The documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remained the same but had some changes/updates. The 2<sup>nd</sup> stage survey was prepared in a way that some of the information, provided by each project partner, needed further explanation and it varied between PP countries.

For every PP country, an extension at the beginning of each topic has been added so that each project partner had the possibility to implement a short description of the current situation regarding this topic in his PP country. This information will be useful for the upcoming comparative activities. Moreover, an additional table at the end of each topic has been inserted aiming at clarifying if the collected materials represented all the existing documents in force in the country or just a selection of them. In this case, the rationale behind the selection has been provided in the same table.

During the review of the received material from the 1<sup>st</sup> stage survey it has been found out that the topics were properly selected, so they were kept for the 2nd stage survey. There was only one novelty. There have been some differences in the interpretation of the topic "***Seismic incentive frameworks***". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion, the chapter "***Seismic incentive frameworks***" was intended for the purpose of the 2<sup>nd</sup> stage survey only for incentives (pre-earthquake, prevention measures, e.g., documents in the field of economic incentives, financial funds). All documents prepared in order to respond better in the event of an earthquake (e.g., civil protection plans) should be classified in new topic "***Post-earthquake planning***".

When it comes to the content of the survey, in the first section some basic general information about project partner country and its seismic activity was needed. Information on the size of the country, the number of inhabitants, the administrative division of the country and on past major earthquakes occurred has been collected. In the continuation of the activities of this work package, the mentioned information will help to clarify some differences and similarities between the existing regulations and incentives of individual partner countries.

The following is the substantial part of the survey. The 2<sup>nd</sup> stage survey consists of 6 chapters dedicated to 6 topics that, are the key to reduce the seismic vulnerability of the built environment. For each of the norms/incentives from the topic of seismic norms, building regulations, urban planning regulation, seismic incentive frameworks and post-earthquake planning, the information on the following data has been collected:

- since when (the latest version) the document is in force
- given that some regulations are prescribed by the EU, whether the document relates to the EU regulatory framework
- the level at which the document is valid - this should be linked to the administrative division of the country
- information about the promoter of the document
- target groups - the target users of the document

- in case the collected norm/incentive is publicly available online, a link to the document must be provided in the survey
- which time period the document relates to (whether pre- or post-earthquake period or both)
- whether the document specifically addresses cultural heritage
- a short description of the document had to be added, together with an explanation of how the document addresses seismic vulnerability

For each of the topics, each PP country provided a brief summary of the current state of norms and incentives in the country and an indication of whether all existing documents are actually included in the survey.

Depending on the specifics discussed, it was necessary to enter **additional information** for the inserted documents among some topics. The latter are described below:

- ***Seismic norms***

Determination of the sub-topic(s) of the inserted norm/incentive: design of new structures, assessment of existing structures and retrofitting structures

- ***Seismic incentive frameworks***

For each of the documents among this topic, it was determined whether it represents a direct incentive of a financial and economic nature or a kind of indirect incentive. The latter is defined as a document / tool on the basis of which awareness is raised in the field of reducing seismic vulnerability, but it is not a direct financial or economic incentive.

In addition, each PP country should insert a general situation over this topic, i.e., to answer to the following questions: Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings? Do you have Earthquake funds?

- ***Post-earthquake planning***

The inserted regulations/incentives should be listed among one of the following subsections:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (e.g., earthquake exercise plans)
- other.

- ***Insurance against earthquake:***

The chapter is divided into two subchapters, namely: Optional earthquake insurance and General legislation relating to earthquake insurance.

For the documents among the topic of **general legislation**, it is envisaged to complete a table with the general information presented above.

When studying the situation in the field of **optional earthquake insurance**, an additional questionnaire has been prepared. The latter was intended to be filled out by insurance companies that offer the type of insurance in question in each PP country.

There were also some additional questions regarding optional earthquake insurance for each PP country concerned:

- What proportion of the insured buildings in your country is also insured against earthquake?
- As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?

In order to gain insight into the data collection methodology, a blank 2<sup>nd</sup> stage survey is shown by chapters (topics) in the Annex 1.





## 4. Collected norms and incentives

### 4.1 Summary of the collected norms and incentives

The chapter summarizes the first results of collecting existing norms and incentives in all PP countries. The table below shows the number of documents each PP country has collected for each topic and in total.

PP country /Topic	Seismic norms	Building regulations	Urban planning regulations	Seismic incentive frameworks	Post-earthquake planning	Total
Italy	9	3	1	6	5	24
Croatia	3	1	1	/	6	11
Albania	2	1	2	/	2	7
Serbia	4	2	3	/	4	13
Slovenia	1	1	2	1	7	12
Greece	5	3	2	3	8	21
<b>Total</b>	<b>24</b>	<b>11</b>	<b>11</b>	<b>10</b>	<b>32</b>	<b>88</b>

**Table 1 - Collected norms and incentives.**

The following is a summary of the situation in the project consortium among each of the topics.

#### **Seismic norms**

European Eurocode standards are currently in force in all partner countries even if in Italy the reference legislation is a national document that can be considered fully compatible and interchangeable with the application of the Eurocodes completed by the National Appendices. Based on the collected norms, In the past, the countries of the former Yugoslavia as well as Albania had common seismic legislation documents. In Italy and Greece, there are still many remaining regulations in force today, which regulate the broader field of seismic legislation and are related to urban planning and post-earthquake planning. All PP countries have listed seismic norms that are in force at national level, while Italy has also some regulations on regional level. Also, Italy and Greece have some regulatory documents that specifically deal with cultural heritage.

#### **Building regulations**

All the six countries involved in the survey have listed building regulations in force at national level. All of PP countries have one document that represents “national building law”. Only in Italy, alongside the national legislation, it is possible to find building regulations enacted at a local scale, namely the municipal level. This is due to the fact that in Italy the urban planning subject is a specific competence of Regions and, in particular,

urban planning tools include building codes and regulation that are enacted by each municipality. Despite this, building regulations in force at local level must be compliant with the national law. To the aim of this investigation, the city of Bologna has been considered only, being the city where the Italian pilot case (WPT2) has been identified.

### ***Urban planning regulations***

When it comes to the methodology adopted within the exploitation of this topic, all the laws enacted at National level concerning spatial planning and affecting seismic vulnerability have been inserted for the six countries involved in the project. Whereas urban planning is a subject legislated at regional level (e.g. Italy), only instruments in force in those ones directly involved in the project have been considered in the survey; in addition, if Municipalities have the responsibility of drafting the urban planning tools, these have been narrowed down according the capital city of the Region (e.g. Bologna Municipality in Emilia-Romagna Region for Italy) or the ones directly involved in ADRISEISMIC project (e.g. Municipality of Gjirokaster).

In the field of urban planning regulations, it has been found that some documents do not specifically deal with the reduction of seismic vulnerability at present. However, they have been included in this collection in order to create a common knowledge framework of the tools currently in use in the different countries, to inform further project activities on the improvements that can be suggested to the existing tools, in order to achieve the project goals.

### ***Seismic incentive frameworks***

Within ADRISEISMIC area, the most important incentives carried out to tackle seismic vulnerability are economic and financial initiatives that local governments have adopted to encourage the improvement of the quality of the built environment in order to cope with earthquakes phenomena and to prevent enormous losses of human lives and the loss of cultural and economic values. Economic incentives often consist in tax credit and VAT reduction for a certain percentage of the cost of seismic retrofitting interventions (e.g., »Sismabonus« in Italy) with the possibility to transfer the credit to third parties.

While Italy has already in force some financial, economic and volumetric incentives, there are some indirect incentives, which help in raising awareness of the seismic vulnerability of built environment in Greece and Slovenia.

### ***Post-earthquake planning***

In all the PP countries, there is in force regulation at national, regional and/or municipal level that represents action plan in case earthquake/natural disasters happen. Some of the laws refer to reconstruction of specific territory after an earthquake. For example, in Croatia, there are many documents in production or already published after the Zagreb earthquake in March 2020. Most of the regulatory documents among the topic of post -earthquake planning refers to the civil protection.

### ***Insurance against earthquake***

Insurance against earthquake is not obligatory in any of the PP countries, but an optional insurance against earthquake is available in all PP countries. Countries provided slightly different data on the conditions and characteristics of voluntary earthquake insurance. Some countries have acquired an average share of earthquake-protected buildings, which, however, varies considerably between countries.

## 4.2 Collected data by country

The following subchapters contain summaries of all the topics covered, separately for each PP country in an alphabetic order. The titles of all collected documents among each topic are given.

All the documents collected are already related to the reduction of seismic vulnerability of the built environment. Exceptions are some documents introduced in the field of urban planning regulations, which represent the basis that would need to be upgraded for the purpose of achieving the project goal.

The last version of 2<sup>nd</sup> stage surveys, which represent the basis for further activities within WPT1 are available in the annexes.

### 4.2.1. Albania

SEISMIC NORMS	
<b>Summary</b>	<p>The technical design condition published in 1989, was the last legally approved update of Albanian technical design codes, which was accompanied by the relevant seismic map. Seismic zoning map, accompanied by the maximum expected MSK-64 intensities of the ground with average conditions for the return period 100 years (possibility of over 30 percent), divides the country into three MSK-64 intensity zones (VI, VII and VIII). Intensity IX is a spot-type phenomenon, located only in the epicenter areas of major historical earthquakes.</p> <p>The differences between the spectrum of KTP-N.2-89 and that of EN 1998-1 for hard soils are smaller than in the case of weaker soils, however the deficiency of our technical conditions remains very large.</p> <p>In this way three periods of anti-seismic projections in Albania could be distinguished:</p> <ul style="list-style-type: none"> <li>- Before 1963 when antiseismic requirements were very low or absent at all</li> <li>- Period from 1963 to 1990 with low seismic requirements</li> <li>- Period after 1990 where seismic requirements are based on KTP-N.2-1989, which based on what we said above, despite being more developed than the previous codes, again they can be considered insufficient for the level of risk seismic in our country.</li> </ul> <p>For this reason, individual and institutionalized efforts have been made and continue to be made to update our technical conditions with the Structural Eurocodes.</p>
<b>Collected norms and incentives</b>	<ul style="list-style-type: none"> <li>▪ KTP-N2-89</li> <li>▪ Eurocode 8</li> </ul>
BUILDING REGULATIONS	
<b>Summary</b>	<p>A series of approved documents provide general guidance on how specific aspects of building design and</p>

construction can comply with the Building Regulations.

In 2017, the Ministry of Territorial Development compiled and approved a series of documents to define the design standards of various buildings (e.g., for nurseries, schools, kindergartens and apartments)

These rules are mandatory to be followed in the design of any new building or even in interventions that can be made in existing buildings.

Also, these incentives are mandatory to be used throughout the country when designing such objects.

#### **Collected norms and incentives**

- Design standards for nurseries, schools, kindergartens and apartments

### **URBAN PLANNING REGULATIONS**

#### **Summary**

The law "For Territorial Planning and Development" was adopted in 2014 and year after year has undergone changes.

Also, after the last earthquake with magnitude 6.4, changes were made regarding the shortening of procedures for obtaining a building permit in emergency situations.

These incentives are mandatory to be used throughout the country.

General Local plan of the Gjirokastra Municipality is a strategic planning tool with social, economic, and ecological extensions aimed at integrating people and economic activities successfully into the environment, taking into account the balanced and sustainable development of the region.

#### **Collected norms and incentives**

- Law No. 107 dated 31.07.2014 "For Territorial Planning and Development"
- General local plan of the Gjirokastra Municipality

### **SEISMIC INCENTIVE FRAMEWORKS**

#### **Summary**

In Albania, there are no existing incentives that could be listed among seismic incentive frameworks.

#### **Collected norms and incentives**

/

### **POST-EARTHQUAKE PLANNING**

#### **Summary**

In Albania, law dealing with reduction of the risk of disasters and the realization of civil protection to guarantee the protection of human life, living things, property, cultural heritage and the environment, through the strengthening of the civil protection system is in force. The law regulates the functioning of the civil protection

system, defining the responsibilities of the institutions and structures of this system, international cooperation, the rights and obligations of citizens and private entities, education, training and inspection.
<b>Collected norms and incentives</b> <ul style="list-style-type: none"> <li>▪ Law No. 45/2019 “For civil protection”</li> <li>▪ National Planning of Civil Protection</li> </ul>
<b>INSURANCE AGAINST EARTHQUAKE</b>
<b>Summary</b> Real estate insurance against earthquakes in Albania is not legally binding. Albania submitted three questionnaire replies. Answers were provided by SIGAL, ALBSIG and INTERSIG.
<b>Collected norms and incentives</b> /

**Table 2 - Albanian summary of the collected documents**

#### 4.2.2. Croatia

<b>SEISMIC NORMS</b>
<b>Summary</b> Up until 1964, buildings in Croatia were constructed with no consideration for seismic shaking – and about one-third of the existing building stock dates from this period. In 1964, first seismic codes were introduced, in 2007 ENV norms were very well used and after 2013 (2014 for ongoing projects) structural Eurocodes are mandatory. Eurocode 8, or HRN EN 1998, must be used for the design of earthquake-resistant structures. Several nationally determined parameters (NDPs) are added to the main document. Other documents are not in use.  After the earthquake in Zagreb (22nd March 2020), several documents regarding the seismic safety and vulnerability are in production or are already published. Also, several initiatives to reduce seismic vulnerability of existing structures are funded by Croatian Science Foundation as a national research projects. There is also a lot of scientific research regarding the topic at almost every Faculty of Civil Engineering in Croatia (Zagreb, Split, Rijeka, Osijek).
<b>Collected norms and incentives</b> <ul style="list-style-type: none"> <li>▪ Eurocode 8</li> <li>▪ Manual for earthquake restoration of existing masonry buildings</li> <li>▪ Techniques of repair and reinforcement of masonry buildings</li> </ul>
<b>BUILDING REGULATIONS</b>
<b>Summary</b>

In Croatia, there is only one valid document regarding the building regulations. It is called “Construction Act” and it is valid on the national level. Although, there are some different local guidelines for specific types of building regulations, for seismic building regulations there are the same for a whole country.

#### **Collected norms and incentives**

- The Construction Act

### **URBAN PLANNING REGULATIONS**

#### **Summary**

In Croatia “Zakon o prostornom uređenju” (The law on spatial planning) is a valid document for urban planning regulations.

#### **Collected norms and incentives**

- The law on spatial planning

### **SEISMIC INCENTIVE FRAMEWORKS**

#### **Summary**

In Croatia, there are no existing incentives that could be listed among seismic incentive frameworks.

#### **Collected norms and incentives**

/

### **POST-EARTHQUAKE PLANNING**

#### **Summary**

After the earthquake in Zagreb (22nd March 2020), several documents regarding the seismic safety and vulnerability are in production or are already published. Also, several initiatives to reduce seismic vulnerability of existing structures are funded by Croatian Science Foundation as a national research projects. There is also a lot of scientific research regarding the topic at almost every Faculty of Civil Engineering in Croatia (Zagreb, Split, Rijeka, Osijek).

#### **Collected norms and incentives**

- Emergency seismic reconstruction program
- Plan for the development of the civil protection system in the area of the City of Kaštela
- Protection and rescue plan for the territory of the Republic of Croatia
- Civil Protection System Act
- Law on reconstruction of earthquake buildings in the area of the City Of Zagreb, Krapina-Zagorje Counties and Zagreb Counties
- The Manual for Emergency Seismic Reconstruction Program

## INSURANCE AGAINST EARTHQUAKE

### Summary

Real estate insurance against earthquakes in Croatia is not legally binding. Croatia submitted one questionnaire reply. The answers were provided by the insurance company Merkur.

### Collected norms and incentives

- The Insurance law

**Table 3 - Croatian summary of the collected documents**

## 4.2.3. Greece

## SEISMIC NORMS

### Summary

A clearly common component between Greek and European antiseismic regulations is that the performance requirements and compliance criteria must be fulfilled for the following 3 states: no collapse, damage limitation and life protection.

This defines a customized implementation framework, with intervention measures depending on the flexibility of the construction.

The main problem is the lack of design and constructional info (the so called “as built” info). A significant fact that governs all the antiseismic protection activities, is that: most historical buildings are unreinforced, they usually have no connecting material, shallow foundation, and no special design for transferring the seismic loads to the ground (avoiding deformations). Thus, most of them have gone through several seismic episodes, exceeding their ultimate limit state, standing nowadays on their residual loads.

There are Microzonal Studies, designed for several regions in Greece, sometimes more detailed, for specific regions with high seismic vulnerability. These considerations have the advantage of taking into account the special conditions of each region (spatial, urban, geological background). The capital cities of Heraklion, Rethymnon, Chania, Ag. Nikolaos in Crete, have such microzonal studies, contributing to a more detailed design. However, they are not always obligatory, but only indicative. They are not strictly attached to the official Greek Regulations’ System, but depend on the local authorities to apply them, helping to avoid possible design failures, deriving from generalization.

### Collected norms and incentives

- EAK 2000 (Greek Antiseismic Regulations)
- KANEPE 2017 (Intervention National Regulations)
- EUROCODE (6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.3, 8.6)
- "Approval of Eurocode use and appliance, in combination with National annexes - ΦΕΚ 1457 Β’ – 5/6/2014"
- Guidelines for assessment and structural interventions on masonry buildings

## BUILDING REGULATIONS

### Summary

Greek and European building regulations referring to historical monuments, usually deal either with concrete elements or unreinforced masonry, encountering the behaviour factor  $q$ , in 3 stages of damage: slight, heavy, collapse.

In these old aged buildings, due to lack of existing structure construction data, a set of “in absentia” values (from empirical knowledge) is used.

After having registered the caused damages and time wear impact in an adequate level of data integrity, a stability control is carried out, setting a degree of intervention measures, after the definition of a new safety factor. The final purpose is to eliminate the seismic vulnerability of the whole structure, inducing the partial plasticity parameters.

Assumptions made, governing all the antiseismic regulations when it comes to deformation tolerance:

- Discrimination of structural elements in 2 main categories: main (foundation bearing vertical loads in a seismic episode) & secondary (masonry, beams, chimneys, etc.).
- Total coherence must be obtained, between the historical structure and the materials we are allowed to use (mortar, fibers, resins).
- When located in a high vulnerability region, any interventions in the historical building must take into account the detailed data given in the micro seismic perspective, if available. If not, then some information for the footing may be derived from geotechnical investigation through boreholes or pits (always with a condition of minimum disturbance).

### Collected norms and incentives

- Decision No 3046/304/30.1/3.2.1989 ΦΕΚ 59//1989) - (Greek) Building Regulation
- Decision No 3328 ΦΕΚ 1561B/2-6-2016 Reinforced Concrete Regulation
- Decision No 92330 GGG 1416/B/17-07-2008 and GGG 2113/B/13-10-2008 - Steel Regulation

## URBAN PLANNING REGULATIONS

### Summary

Spatial planning in Greece is set in four levels:

- General Spatial Planning
- Special Spatial Planning for certain areas of interest
- Regional Spatial Planning (on Regional Level)
- Local Spatial Planning (on Municipality Level)

All the above comprise of many Laws and norms which generate a rather complicated situation as to the Law applied on a certain situation.

### Collected norms and incentives



- Decision No 42284/13.10.2017 “ Revised Regional Spatial Framework”
- General Urban Plans (N. 2508/1997, N.1337/1983)

### SEISMIC INCENTIVE FRAMEWORKS

#### Summary

Seismic incentive frameworks in Greece, meaning rules, laws or frameworks that facilitate pre-earthquake, prevention measures as well as actions/plans in case of earthquakes are frameworks that in Greece are not obligatory to apply. They mostly refer to public use buildings and their application is done on a “voluntary” basis even in the public sector. In the private sector, the application of pre-earthquake monitoring is also on a voluntary basis, taking also into consideration the cost of hiring a civil engineer to perform the monitoring.

#### Collected norms and incentives

- Framework for pre-earthquake monitoring of public utility buildings
- Pre-seismic monitoring of schools LAW.3027/28.06.2002
  - Law 3852/2010 article section 25 94 paragraph 4 connected with Law 1894/1990 article 5 paragraph 12

### POST-EARTHQUAKE PLANNING

#### Summary

Post-earthquake planning in Greece comprises of many documents of various forms and priority. Most of them describe the whole range of earthquake planning, from the preparation stage, to the emergency response and to short term rehabilitation. The above-mentioned legal documents refer to and are all applicable to all stages of administration (from central government, ministries and other governmental organizations, to local administration). It is also usual that certain legal documents are issued to facilitate response and rehabilitation after certain disastrous earthquake incidents.

#### Collected norms and incentives

- General Civil Protection Plan code name “Xenokratis” (Ministry Decision 1299/2003)
- Law 4662/2020 “National Disaster Management Mechanism, reformation of General Secretary of Civil Protection, CP voluntary system and reform of the Fire Unit”
- General Civil Protection Plan concerning earthquakes 1st edition, code name Engelados
- Law 3013/2002 “Upgrade of Civil Protection”
- Guidelines for planning and execution of civil protection drills (2nd edition)
- Law 1283 FEK114A/19-9-1982: Provisions for lending to citizens affected by earthquake incidents
- Law 867 FEK24A/7-2-1978: Additional Provisions for lending to citizens affected by earthquake incidents in northern Greece
- LAW 1190 ΦΕΚ Α' 203/30.7.1981

## INSURANCE AGAINST EARTHQUAKE

### Summary

Property insurance against earthquakes in Greece is not legally binding. Greece provided general answers to the survey questions. Answers were given separately for insurance companies in Athens and insurance companies in Crete.

### Collected norms and incentives

- Law 867-1979

**Table 4 - Greek summary of the collected documents**

## 4.2.4. Italy

## SEISMIC NORMS

### Summary

In Italy many seismic norms are in force. At national level, NTC 2018 is the most important one together with its explanatory circular. Practitioners who want to project seismic relevant works must respect the provisions included in these norms. With National Appendices to NTC2018 - to be published yet – also Eurocodes can be applied.

When it comes specifically to cultural heritage, another important document is DPCM 09/02/2011 because it focuses on the evaluation and reduction of seismic risk of cultural heritage, giving further explanation, methods and intervention techniques for this type of buildings.

At a national level there is also a seismic classification of national territory which is divided into four zones. This classification is important for urban planning management and to control the seismic risk's evolution of the territory, but it is not used anymore for design purposes (it has been replaced in NTC by other methods).

At a regional level, seismic classification of municipalities has been received and also regional laws have been approved in order to manage the construction process, the qualifications required and the procedures to submit a project to public administrations.

Different considerations can be drafted for what concerns post-earthquakes norms. These are specific documents concerning the reconstruction phase in those regions affected by a specific catastrophic earthquake and they manage the hole recovery process of a building establishing also methods to access to State funding; buildings damaged or destroyed by earthquakes can be repaired with economic incentives supplied by Italian State. At this moment, in Italy the recovery phase is still ongoing in Abruzzo (after L'Aquila earthquake occurred in 2009), in Emilia-Romagna (after Finale Emilia earthquake occurred in 2012) and in Marche (after seismic swarm occurred in 2016 in Norcia, Visso and Accumoli).

### Collected norms and incentives

- NTC 2018 – Technical frameworks for construction
- CIRCOLARE ALLE NTC 2018 – Explanatory Circular for NTC 2018 correct application

- DPCM (Directive of President of Council Minister) 9/02/2011 - Evaluation and reduction of seismic risk of cultural heritage in according to NTC 2008
- L.R. (Regional Law) n.19/2008 and following changes - Norms for the reduction of seismic risk
- D.G.R. (Decree of Regional Council) n. 2272/2016 - Document identifying the interventions of no relevance for the public safety for seismic purposes and in-progress variations, concerning structural parts, which are not of a substantial nature"
- L.R. (Regional Law) n. 16/2012 - Norms for reconstruction in areas affected by the earthquake of 20 and 29 May 2012.
- D.Lgs (Legislative Decree) n.189/2016 and subsequent modifications and additions addressing the reconstruction process in areas affected by earthquake starting from August 2016 in Marche region
- OPCM (Ordinance of the President of the Council of Ministers) n. 3274/2003 and subsequent modifications and additions- general criteria for seismic classification of national territory
- DGR (Decree of Regional Council) n. 1164/2018 - seismic classification of municipalities in Emilia-Romagna

## BUILDING REGULATIONS

### Summary

DPR 380/2001 is the reference document for practitioners in the construction sector and it is valid in the whole national territory.

Therefore, in Italy each municipality has its own specific urban planning tools and for this reason there are as many building regulations as the number of municipalities. These building regulations are all in accordance with DPR 380/2001 so their provisions comply with it.

### Collected norms and incentives

- D.P.R. (Decree of President of Republic) n. 380/2001 and subsequent modifications and additions – national building law
- RUE – urban planning regulations for the Municipality of Bologna in force till December 2020
- RE – new urban planning regulation for the Municipality of Bologna in force since December 2020
- 

## URBAN PLANNING REGULATIONS

### Summary

Art. 117 of the Italian Constitution states that urban planning is a subject where Regions are competent together with Italian State. From the 70's the State level has delegated planning law and regulations to the Regions.

In Emilia-Romagna LR 24/2017 is the regional law that establishes the spatial planning discipline in accordance with the fundamental principles of State legislation and the European legal system.

In art.2 the regional law states that the territory government is exercised by municipalities and their unions, by the Metropolitan City of Bologna, by large-area subjects and by the Region.

The local level (i.e., municipalities or their union) is responsible for the design of the urban planning tools identified in accordance with the prescription of the regional law.

#### **Collected norms and incentives**

- L.R. (Regional Law) n. 24/2017

### **SEISMIC INCENTIVE FRAMEWORKS**

#### **Summary**

In Italy is in force at national level the D.L. n. 63/2013 that gives access to economic incentives to be used for the reduction of seismic risk in buildings and it is applicable, at this moment, for those interventions that improve the seismic safety of constructions. To date, to have access to these economic incentives the interventions must be concluded and paid within May 2022, but this temporal limit is still subject to modifications. This initiative has been called “Sisma Bonus” and in its first version it established that up to 85% of the costs of interventions for seismic vulnerability reduction would have been reimbursed by the Italian state in five years in the form of taxes reduction. The exact amount depends on the kind of interventions implemented and the consequent level of seismic safety obtained. With the D.L. 34/2020 this amount of discount has been raised to 110%. The possibility to transfer the credit to third parties increase the effectiveness of this incentive because also people without the amount of money to pay immediately the intervention can take advantage of the initiative.

Emilia-Romagna Region with the adoption of the new PUG (see table 4.1 in the Annex 5) has also introduced some volumetric incentives to foster the qualification of the built environment from both seismic and energetic point of view. For what concerns the incentives foreseen in the field of seismic retrofitting, the PUG of the Municipality of Bologna allows to increase the volume of the building in the measure of maximum 10 % of total. To access to this volumetric incentive, RE (see table 3.2 in the Annex 5) states the level of seismic safety to reach, according to the type of interventions.

When it comes to indirect incentives, some initiatives are promoted by the Civil Protection department and aim at increasing awareness among citizens and students and sensitising private owners towards the seismic vulnerability of the built heritage.

#### **Collected norms and incentives**

- D.L. (Legislative Decree) n. 63/2013 and subsequent modifications made by D.L. n. 34/2020
- D.M. (Minister Decree) n. 58/2017 and subsequent modifications and additions
- LR 24/2017 introduced Volumetric incentives for seismic retrofitting interventions
- “IO NON RISCHIO” – “I don’t take risks”
- “EDURISK”
- “SICURO+”

### **POST-EARTHQUAKE PLANNING**

### Summary

The Civil Protection Plan is the principal instrument in force at local level to address disaster risk management. As for urban planning tools, each municipality should have its own Civil Protection Plan. In the Civil Protection website it is possible to see the list and the percentage of municipalities that have already adopted this plan. Here the link: <http://www.protezionecivile.gov.it/servizio-nazionale/attivita/prevenzione/piano-emergenza/mappa-piani-comunali/dati-dettaglio>

The CLE and MS analysis are important instruments and studies to increase the resilience of municipalities through a deep knowledge of soils and urban territories, in case of catastrophic events occur.

### Collected norms and incentives

- National plan for the prevention of seismic risk L. 77/2009 – art. 11
- National seismic risk rescue program DPCM 14/01/2014
- Annex II of National emergency plan in the framework of the National seismic risk rescue program
- Municipal Civil Protection Plan
- Analysis of the Emergency Limit Condition (CLE) and Seismic Microzonation (MS)

## INSURANCE AGAINST EARTHQUAKE

### Summary

In Italy, insurance against earthquake is not legally binding. It is estimated that 836,000 houses are insured against natural disasters which means a percentage of 2.4% on built heritage. This percentage drops to 1.7% if only earthquakes are considered which means that about 570.000 units are insured against earthquakes. The 85% of these latter is located in areas with a lower seismic risk.

Given the large number of insurance companies in Italy, general answers to the survey questions regarding supplementary insurance against earthquake were prepared.

**Table 5 - Italian summary of the collected documents**

## 4.2.5. Serbia

### SEISMIC NORMS

#### Summary

The former Yugoslavia (SFRY), including Serbia as one of the republics, had a unified system of regulations for seismic design and construction. The first normative document, mandatory for the whole territory of SFRY, was the 1964 seismic code. Subsequently, an updated seismic code, issued in 1981 (Table 2.3 in the Annex 6), contained updates to the seismic zonation map and the seismic force calculation approach. The Eurocode 8 recently became a mandatory standard for seismic design in Serbia.

#### Collected norms and incentives

- Projektovanje seizmički otpornih konstrukcija (SRPS EN 1998) (Eng: Eurocode 8: Design of structures for earthquake resistance (EN 1998))
- Pravilnik o tehničkim normativima za izgradnju objekata visokogradnje u seizmičkim područjima (Eng: Technical Regulations for the Design and Construction of Buildings in Seismic Regions)
- Pravilnik o privremenim tehničkim propisima za građenje u seizmičkim područjima (Eng: Provisional Technical Regulations for Construction in Seismic Regions)
- Pravilnik o tehničkim normativima za sanaciju, ojačanje i rekonstrukciju objekata visokogradnje oštećenih zemljotresom i za rekonstrukciju i revitalizaciju objekata visokogradnje (Eng: Technical Regulations for Repair, Strengthening and Reconstruction of Building Construction Damaged by Earthquakes and for Reconstruction and Rehabilitation of Building Structures)

### BUILDING REGULATIONS

#### Summary

The 2009 'Planning and Building Act' is the current governing Act in Serbia. The Eurocode standards were officially introduced and enforced in Serbia through the 2019 'Regulations for Building Structures'. This document was compiled pursuant to the 2009 'Planning and Building Act'.

#### Collected norms and incentives

- Zakon o planiranju i izgradnji (Eng: Planning and Building Act (Law on Planning and Construction in Serbia))
- Pravilnik za građevinske konstrukcije (Eng: Technical Regulations for Building Structures)

### URBAN PLANNING REGULATIONS

#### Summary

Urban planning in Serbia is officially regulated by the 'Planning and Building Act', which provides general guidelines with respect to planning documents and rules for urban (and spatial) planning. More specific regulations regarding the method and procedure for compilation of spatial and urban planning documents are dictated by the document 'Regulations on the content, methods and procedures for compilation of spatial and urban planning documents'. This document was published pursuant to the 'Planning and Building Act'. The Government of the Republic of Serbia has recently issued the document on 'Sustainable

urban development Strategy of the Republic of Serbia until the year 2030'. The strategy should help identify and resolve key urban development problems in Serbia and support sustainable economic, social and urban development. The document also examines the strategic plans for protection of cultural heritage in Serbia. None of the documents regulating urban planning in Serbia address the subject of seismic vulnerability.

#### **Collected norms and incentives**

- Zakon o planiranju i izgradnji (Eng: Planning and Building Act (Law on Planning and Construction in Serbia))
- Pravilnik o sadržini, načinu i postupku izrade dokumenata prostornog i urbanističkog planiranja (Eng: Regulations on the content, methods and procedures for compilation of spatial and urban planning documents)
- Strategija održivog urbanog razvoja Republike Srbije do 2030 Godine (Eng: Sustainable urban development Strategy of the Republic of Serbia until 2030)

### **SEISMIC INCENTIVE FRAMEWORKS**

#### **Summary**

With the exception of the two documents listed among post-earthquake topic, which include some general guidelines and recommendations with respect to prevention measures, no other seismic incentive frameworks (nor economic incentives and seismic funds) are currently in place in Serbia.

#### **Collected norms and incentives**

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### **POST-EARTHQUAKE PLANNING**

#### **Summary**

The 'Catastrophe Risk Assessment in the Republic of Serbia' is a mandatory document, compiled based on the 'Law on Disaster Risk Reduction and Emergency Management'. This document comprises information on the current level of seismic risk in Serbia, including information on seismic hazard, exposure, and vulnerability. The Law on Reconstruction Following Natural and Other Hazards further defines post-earthquake activities.

The Action Plan for the Implementation of the National Disaster Risk Management Programme is adopted by the Government. It does not have the character of law, rather it represents the documentation based on which the Government makes money investment decisions and regulates the organization of institutions in regard to disaster control and reduction. Every year a report is to be adopted, and the Action plan that currently exists refers to the period from 2017 to 2020.

#### **Collected norms and incentives**

- Zakon o obnovi nakon elementarne i druge nepogode (Eng: Law on Reconstruction Following Natural and Other Disasters))
- Zakon o smanjenju rizika od katastrofa i upravljanja vanrednim situacijama (Eng: The Law on Disaster

#### Risk Reduction and Emergency Management)

- Procena rizika od katastrofa u Republici Srbiji (Eng: Catastrophe Risk Assessment in the Republic of Serbia)
- Akcioni plan za sprovođenje Nacionalnog programa upravljanja rizikom od elementarnih nepogoda (Eng: Action Plan for the Implementation of the National Disaster Risk Management Programme)

### INSURANCE AGAINST EARTHQUAKE

#### Summary

Real estate insurance against earthquakes in Serbia is not legally binding. Serbia submitted three questionnaire replies. Answers were provided by UNIQUA, DOOR and Generali.

#### Collected norms and incentives

- Zakon o osiguranju (Eng: Insurance Law)

**Table 6 - Serbian summary of the collected documents**

## 4.2.6. Slovenia

### SEISMIC NORMS

#### Summary

The first seismic regulations for the territory of Slovenia were issued after the earthquake in Skopje, in 1963. This was followed by the Yugoslav legislation in 1964 (Pravilnik o privremenim tehničkim propisima za građenje u seizmičkim područjima, 1964). At the beginning of the 1980s, after the Montenegrin earthquake (1979), a new Regulation (Pravilnik o tehničkim normativima za izgradnju objekata visokogradnje u seizmičkim područjima, 1981) entered into force. Today, the design and construction of structures are regulated by European standards - Eurocodes, which came into force in Slovenia in 2005. In seismically active areas, the requirements of Eurocode 8-1 apply: Design of structures for earthquake resistance: General rules, seismic load and rules for buildings (SIST EN 1998-1: 2005). Design according to Eurocode 8 is based on the fact that the structure must be designed and constructed in such a way that it will withstand the design earthquake without being partially or completely destroyed.

In the analysis of existing masonry buildings, Italian standard NTC 2008 is occasionally used.

#### Collected norms and incentives

- Eurocode 8: EN 1998-1 (2004)

### BUILDING REGULATIONS

#### Summary

In Slovenia, there is only one existing document regarding the building regulations. It is called "Building Law" and is valid at the national level. The seismic issue is addressed in the document in Act 16, which deals with mechanical resistance and stability of structures.



<p><b>Collected norms and incentives</b></p> <ul style="list-style-type: none"> <li>▪ Gradbeni zakon (Eng. Building Law)</li> </ul>
<b>URBAN PLANNING REGULATIONS</b>
<p><b>Summary</b></p> <p>In Slovenia, the Spatial Planning Act is in force in the field of urban planning. In this field also the manual Regulatory Elements is currently in force. In the manual, earthquake is mentioned as one of the health, safety, sanitary and technical aspects that define the purpose of determining deviations.</p>
<p><b>Collected norms and incentives</b></p> <ul style="list-style-type: none"> <li>▪ Zakon o urejanju prostora (ZUreP-2) (Eng.: Spatial Planning Act (ZUreP-2))</li> <li>▪ Regulacijski elementi (Eng: Regulatory elements)</li> </ul>
<b>SEISMIC INCENTIVE FRAMEWORKS</b>
<p><b>Summary</b></p> <p>In Slovenia, there are no existing financial or economic incentives for the purpose of reducing seismic vulnerability of built environment. In an indirect sense, an incentive is represented by the POTROG project. Within the latter, an application for damage assessment of buildings, intended for the general public, has been developed.</p>
<p><b>Collected norms and incentives</b></p> <ul style="list-style-type: none"> <li>▪ Aplikacije POTROG (Eng. POTROG applications)</li> </ul>
<b>POST-EARTHQUAKE PLANNING</b>
<p><b>Summary</b></p> <p>Many documents of various forms and priority exist within the post-earthquake planning in Slovenia. They describe different subtopics: general legislation relating to civil protection, organization of response/rescue and planning. The documents deal with preparation as well as emergency response and also short term rehabilitation on national, regional and local level.</p>
<p><b>Collected norms and incentives</b></p> <ul style="list-style-type: none"> <li>▪ Zakon o varstvu pred naravnimi in drugimi nesrečami (ZVNDN) (Uradni list RS, št. 51/06 – uradno prečiščeno besedilo, 97/10 in 21/18 – ZNOrg) (Eng: Protection Against Natural and Other Disasters Act)</li> <li>▪ Resolucija o nacionalnem programu varstva pred naravnimi in drugimi nesrečami v letih od 2016 do 2022 (Uradni list RS, št. 75/16) (Eng: Resolution on the National Programme for Protection against Natural and Other Disasters 2016-2022)</li> <li>▪ Uredba o organiziranju, opremljanju in usposabljanju sil za zaščito, reševanje in pomoč (Eng. Decree on the Organization Equipment and Training of Protection and Aid Forces)</li> </ul>

- Uredba o organiziranju, opremljanju in usposabljanju sil za zaščito, reševanje in pomoč
- Državni načrt zaščite in reševanja ob potresu (Eng. National plan for civil protection and disaster relief in case of earthquake)
- Regijski načrt zaščite in reševanja ob potresu na območju ljubljanske regije (Eng. Regional earthquake protection and rescue plan in the Ljubljana region)
- Načrt Mestne občine Ljubljana za zaščito in reševanje ob potresu (Eng. Plan of the City of Ljubljana for earthquake protection and rescue)

#### INSURANCE AGAINST EARTHQUAKE

##### Summary

Property insurance against earthquake in Slovenia is not legally binding. Slovenia submitted five completed questionnaires. The answers were provided by all insurance companies that offer earthquake insurance: Triglav, Sava, Generali, Merkur and Grawe.

##### Collected norms and incentives

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**Table 7 - Slovenian summary of the collected documents**

## 5. Conclusions

To achieve the overall objective of the work package, ADRISEISMIC has firstly developed an in-depth study of the existing regulations in the Countries involved regarding the reduction of seismic vulnerability on existing buildings and related forms of financial and economic incentives. A particular attention has been paid at collecting specific regulations and tools addressing the historical parts of the cities, intended as the more fragile but at the same time the richest of cultural heritage.

Deliverable T1.1.1 presents a report on norms and incentives collected within the first activity of the WPT1. The collection of all the existing norms and incentives has been carried out in all participating countries: Italy, Croatia, Albania, Serbia, Slovenia and Greece.

For the purpose of the Activity T1.1 within WPT1, specific topics have been identified in order to cover as best as possible the overall situation related to reduction of seismic vulnerability of built environment in all project partner countries. The topics, defined for the purpose of the survey, are: seismic norms, building regulations, urban planning regulation, seismic incentive frameworks, post-earthquake planning and insurance against earthquakes.

In order to achieve the best possible understanding of the seismic vulnerability regulatory framework across the countries, while incorporating as much existing documentation as possible and obtaining its detailed data, it was decided to collect the data in the form of a survey. The survey has been conducted in two phases. In the first phase, a basic survey has been prepared. After receiving the first results, the evaluation phase started. With the aim of comparability and obtaining as much information as possible about the existing material, the 2nd stage survey has been formed on the basis of the 1st stage survey. The material collected in the latter forms the basis for this deliverable.

Data collection steps, their time frames and the content are briefly presented in the report.

In the first section of the survey, some basic general information on project partner country and its seismic activity was needed. The following is the substantial part of the survey. The 2nd stage survey consists of 6 chapters dedicated to 6 topics that, in our opinion, are the key to reduction of seismic vulnerability of the built environment. For each of the norms/incentives the information on the entry into force of the document, on its target users, on the promoter, on the link to EU regulations, on the link to the reduction of seismic vulnerability, on the link to cultural heritage, etc. has been collected.

In the report, a summary of the first results of collecting existing norms and incentives in all PP countries is presented in general and per each country separately in dependence on the topic among which the documents are listed. A total number of 88 has been collected, highlighting the high level of complexity that characterises the seismic vulnerability at urban scale.

Some general findings on the situation in the main topics covered, are:

- **Seismic norms:** European Eurocode standards are currently in force in all partner countries; Italy and Greece have many remaining regulations which regulate the broader field of seismic legislation; regulation on the national level prevails;

- **Building regulations:** All the six countries involved in the survey have listed building regulations in force at national level. All of PP countries have one document that represents “national building law”. Only in Italy, alongside the national legislation, it is possible to find building regulations enacted at a local scale, namely the municipal level.
- **Urban planning regulations:** When it comes to the methodology adopted within the exploitation of this topic, all the laws enacted at National level concerning spatial planning and affecting seismic vulnerability have been inserted for the six countries involved in the project. Whereas urban planning is a matter of Regions, only instruments in force in those ones interested by the ADRION programme have been considered in the survey;
- **Seismic incentive frameworks:** only Italy has financial and economic incentives, while Greece and Slovenia collected some incentives, which help in raising awareness of the seismic vulnerability of built environment
- **Post-earthquake planning:** in all of the PP countries, there is in force regulation at national, regional and/or municipal level that represents action plan in case earthquake/natural disasters happen. Some of the laws refer to reconstruction of specific territory after an earthquake
- **Insurance against earthquake** is not obligatory in any of the PP countries. Optional insurance against earthquake is available in all PP countries. Countries provided slightly different data on the conditions and characteristics of voluntary earthquake insurance.

All data collected on existing regulations and incentives provided by PP countries within the last version of 2nd stage surveys, which represent the basis for further activities within WPT1, are in the annexes.

To conclude, within the activity T1.1, all PP countries provided available norms and incentives. The latter are expected to differ considerably in both number and content. The collected data represent the first picture of the situation in the considered area. They provide us with rough insights into the order in the field of seismic regulation of individual countries. Examples of good practice and some shortcomings are shown. All in all, it will be a good basis for further activities within WPT1. The first one of the latter is a comparison matrix, presented in detail in Deliverable T1.1.2.

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## Annexes

- **Annex 1: Blank 2nd stage survey**

D1\_1\_1\_2021\_Annex1\_Blank\_2nd-stage-survey.pdf

- **Annex 2: 2nd stage survey for Albania**

D1\_1\_1\_2021\_Annex2\_Albania.pdf

- **Annex 3: 2nd stage survey for Croatia**

D1\_1\_1\_2021\_Annex3\_Croatia.pdf

- **Annex 4: 2nd stage survey for Greece**

D1\_1\_1\_2021\_Annex4\_Greece.pdf

- **Annex 5: 2nd stage survey for Italy**

D1\_1\_1\_2021\_Annex5\_Italy.pdf

- **Annex 6: 2nd stage survey for Serbia**

D1\_1\_1\_2021\_Annex6\_Serbia.pdf

- **Annex 7: 2nd stage survey for Slovenia**

D1\_1\_1\_2021\_Annex7\_Slovenia.pdf



## ANNEX 1 - BLANK 2<sup>ND</sup> STAGE SURVEY

All documentation and information collected within the 2<sup>nd</sup> stage survey form the basis for further activities within WPT1. In order to gain insight into the data collection methodology, a blank 2<sup>nd</sup> stage survey is shown by chapters (topics) below.

### 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
Project partner						
Country						
Country area						
Population						
Administrative division of the country Please, indicate existing country levels (e.g: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.				-		
Recent earthquakes Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.						
N	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1						
2						
3						
4						
5						
6						
7						
8						
9						
...						

**Figure 1: 2<sup>nd</sup> stage survey: basic information about the PP country**





## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of **seismic norms** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	-
Subsection: - design of new structures - assessment of existing structures - retrofitting structures	-
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

**Figure 2: 2<sup>nd</sup> stage survey: seismic norms**



### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of **building regulations** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

**Figure 3: 2<sup>nd</sup> stage survey: building regulations**

## 4 Urban planning regulations

Please, fill in the table below with information regarding **urban planning regulations**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of **urban planning regulation** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

**Figure 4: 2<sup>nd</sup> stage survey: urban planning regulations**



## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of **seismic incentive frameworks** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Table 5.1: Seismic incentive frameworks.

SEISMIC INCENTIVE FRAMEWORKS	
Title	
Subsection	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings? Do you have Earthquake funds?

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

Figure 5: 2<sup>nd</sup> stage survey: seismic incentive frameworks



## 6 Post earthquake planning

Please, fill in the table below with information regarding **post earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

Please, add a short description of the situation in the field of **post earthquake planning** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

**Table 6.1: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
Title	
Subsection	
Timeframe	
Does the document refer to the EU regulatory framework?	-
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

**Figure 6: 2<sup>nd</sup> stage survey: post-earthquake planning**



## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?

**Table 7.1: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	
INSURANCE PACKAGES AND INSURANCE PREMIUMS	
What type of optional earthquake insurance packages does insurance offer?	
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	
Does the optional earthquake insurance (premium) depend on the property area?	



To what extent is the damage recovered?	
Does the damage recovered depend on the intensity of an earthquake?	
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	
Additional information regarding optional earthquake insurance	

## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.6: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

**Figure 7: 2<sup>nd</sup> stage survey: insurance against earthquakes**



## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN ALBANIA (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has some changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix).

Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1<sup>st</sup> stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake,





prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion, the chapter ***“Seismic incentive frameworks”*** is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds..). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic ***“Post earthquake planning”***. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

---

#### **Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
<b>Project partner</b>			<b>PP4 - Municipality of Gjirokaster</b>			
Country			Albania			
Country area			28.748 m <sup>2</sup>			
Population			2.846 million			
Administrative division of the country Please, indicate existing country levels (e.g: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			National level: Albania, Regional level: 12 regions (countries), Municipalities: 61 municipalities, Local governance: 373 administrative units.			
Recent earthquakes Please, provide information on the few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.						
	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1	14.04.1601	Vlore		10		
2	11.02.1872	Konispol	6.6	9		
3	18.02.1911	LiqeniOhrit	6.7	9		
4	13.02.1912	Moker (Pogradec)	6	8		
5	23.12.1919	Leskovikut	6.1	8-9		Many houses destroyed on the Albanian border as well as in the Greek villages of Isboros, Plavoli, Belthonsi and Kapaztiko. The whole region devastated. There are no reports of casualties.

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6	26.11.19 20	Tepelenes	6.4	9		
7	17.12.19 26	Durres	6.2	9		
8	21.11.19 30	Llogara	6.1	9		
9	27.08.19 42	Peshkopi	6	8-9		
10	01.09.19 62	Lushnje	6.2	8-9		A total of 944 houses were destroyed. Mainly in Karbunara of Lushnja. Major damage to industrial facilities, schools, hospitals and cultural facilities. cracks in agricultural lands.
11	15.04.19 79	Shkoder	7.2	9-10	40	The 8-magnitude earthquake hits Shkodra, causing great casualties and damage. Unfortunately, 40 people lost their lives in Shkodra-Lezha. 17 118 houses and socio-cultural objects were damaged.
12	09.01.19 88	Tirane	5.4	7		Frequent tremors in Tirana with material damage. The main consequences in the villages of Arbanë and Petrelë.
13	26.11.20 19	Mamurras	6.4	8	51	14,000+ buildings damaged/destroyed, 51 dead and 3000 injured

## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>seismic norms</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>The technical design condition published in 1989, was the last legally approved update of our technical design codes, which was accompanied by the relevant seismic map. Seismic zoning map, accompanied by the maximum expected MSK-64 intensities of the ground with average conditions for the return period 100 years (possibility of over 30 percent), divides the country into three MSK-64 intensity zones (VI, VII and VIII). Intensity IX is a spot-type phenomenon, located only in the epicenter areas of major historical earthquakes.</p> <p>The differences between the spectrum of KTP-N.2-89 and that of EN 1998-1 for hard soils are smaller than in the case of weaker soils, however, the deficiency of our technical conditions remains very large.</p> <p>In this way we can distinguish three periods of anti-seismic projections in our country:</p> <ul style="list-style-type: none"> <li>☐ Before 1963 when antiseismic requirements were very low or absent at all</li> <li>☐ Period from 1963 to 1990 with low seismic requirements</li> <li>☐ Period after 1990 where seismic requirements are based on KTP-N.2-1989, which based on what we said above, despite being more developed than the previous codes, again they can be considered insufficient for the level of risk seismic in our country.</li> </ul> <p>For this reason, individual and institutionalized efforts have been made and continue to be made to update our technical conditions with the Structural Eurocodes.</p>

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	KTP-N2-89
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- Design of new structures</li> </ul>

Timeframe	1989 →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Scientific Council of the Ministry of Construction
Target groups	Structural Engineers
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	<p>No</p> <p><i>“Although the provisions of this Standard are applicable to all categories of buildings, the seismic assessment and retrofitting of <u>monuments and historical buildings</u> often requires different types of provisions and approaches, depending on the nature of the monuments.”</i></p>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>In Albania, as a country with high seismic risk, seismic design is very important assessment of structures. In most cases, it is precisely the seismic demand of design what becomes decisive in the structural solution and in the measurement of the elements.</p> <p>In some European countries, and in recent years in our country, engineers are using also “Structural Eurocodes”, which describe a way of conceiving and designing structures of all kinds based on accumulated experience throughout the years. However, despite the individual efforts of engineers in Albania, or institutional initiatives, in our country is still legal KTP. The last update of KTP is in 1989 with the approval of KTP-N.2-89.</p> <p>In this seismic code are determined, the necessary measures for the anti-seismic protection of the constructions of buildings and engineering works, to avoid damages in case of earthquakes, that endanger people's lives, to ensure the preservation of works, equipment, valuable material goods, and not to interrupt the activities of vital importance for the country's economy.</p> <p>Also, it defines the requirements that must be respected during the design of buildings and engineering works, and are given special recommendations mainly for construction sites with seismic intensity over magnitude 6. For construction objects, with seismic intensity magnitude 6, have been determined only some necessary constructive measures.</p>	

Because of this code is less conservative in relation to Eurocode 8, which it represents European rate of design of reinforced concrete structures in seismic areas most engineers work independently with Eurocode 8.

**Table 2.2: Seismic norms**

SEISMIC NORMS	
Title	Eurocode 8
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2008 →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	European Committee for Standardization (CEN)
Target groups	Structural Engineers
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No <i>“Although the provisions of this Standard are applicable to all categories of buildings, the seismic assessment and retrofitting of <u>monuments and historical buildings</u> often requires different types of provisions and approaches, depending on the nature of the monuments.”</i>
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
In the Eurocode series of European standards (EN) related to construction, Eurocode 8 (EC8): Design of structures for earthquake resistance describe show to design structures in seismic zone, using the limit state design philosophy. It was approved by the European Committee for Standardization (CEN) on 23 April 2004. Its purpose is to ensure that in the event of earthquakes: human lives are protected, damage is limited, and structures important for civil protection remain operational.	

The random nature of the seismic events and the limited resources available to counter their effects are such as to make the attainment of these goals only partially possible and only measurable in probabilistic terms. The extent of the protection that can be provided to different categories of buildings, which is only measurable in probabilistic terms, is a matter of optimal allocation of resources and is therefore expected to vary from country to country, depending on the relative importance of the seismic risk with respect to risks of other origin and on the global economic resources.

Special structures, such as nuclear power plants, offshore structures and large dams, are beyond the scope of EN 1998. EN 1998 contains only those provisions that, in addition to the provisions of the other relevant Eurocodes, must be observed for the design of structures in seismic regions. It complements in this respect the other EN Eurocodes.

Eurocode 8 comprises several documents, grouped in six parts numbered from EN 1998-1 to EN 1998-6.

Part 1: General rules, seismic actions and rules for buildings

Part 2: Bridges

Part 3: Assessment and retrofitting of buildings

Part 4: Silos, tanks and pipelines

Part 5: Foundations, retaining structures and geotechnical aspects

Part 6: Towers, masts and chimneys

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We have entered all the documents available in this field in our country.

### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>building regulations</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>A series of approved documents provide general guidance on how specific aspects of building design and construction can comply with the Building Regulations.</p> <p>In 2017, the Ministry of Territorial Development compiled and approved a series of documents to define the design standards of various buildings (e.g. for nurseries, schools, kindergartens and apartments)</p> <p>These rules are mandatory to be followed in the design of any new building or even in interventions that can be made in existing buildings.</p> <p>Also, these incentives are mandatory to be used throughout the country when designing such objects.</p>

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	Design standards for nurseries, schools, kindergartens and apartments.
Timeframe	2017 →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Urban Development
Target groups	Structural Engineers and Architects
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes ( <a href="http://www.azht.gov.al/files/pages_files/VKM_NR.319_dt.12.04.2017_-_Standartet_e_shkollave.pdf">http://www.azht.gov.al/files/pages_files/VKM_NR.319_dt.12.04.2017_-_Standartet_e_shkollave.pdf</a> )



Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	<i>No</i>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This Standard aims to serve as a reference for all those involved in the planning, programming, design / design and construction of new school buildings / spaces or in the rehabilitation of existing buildings. These standards are provided for both public sector schools and private sector schools.</p> <p>The document aims to serve as a reference for garden and educational service designers and buildings of wide public interest. The document defines and describes necessary spaces according to the type, size and specifications in accordance with European standards for kindergartens in urban and rural areas of Albania.</p> <p>These standards make it possible to create an understanding not only about the necessary physical spaces of the garden, but also about the factors that affect their design and the quality of the environment to be achieved inside and around the buildings.</p> <p>Standards include data on all types of garden spaces: educational spaces, administrative spaces, and outdoor spaces for activities, such as: play and parking spaces. These standards can be used for different purposes and for different levels, including:</p> <ul style="list-style-type: none"> <li>● Designing new schools / kindergartens / nurseries;</li> <li>● Designing schools / kindergartens / nurseries in mixed use facilities;</li> <li>● Designing existing school / kindergarten / kindergarten extensions;</li> <li>● Evaluate and improve the spaces of existing schools / kindergartens / nurseries;</li> <li>● Study of furniture and equipment of schools / kindergartens / nurseries, as well as their supply;</li> <li>● Reference base for studies on the utilization and efficiency of buildings.</li> </ul> <p>In addition, these standards include definitions for higher and lower levels and about the design of educational and reception spaces of social educational buildings, taking into account the need for future adaptability and flexibility, as well as cost-effectiveness. In this way, the presented standards aim to make a substantial contribution to the good design of kindergarten / school / nursery buildings.</p>	
<p>Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.</p>	
<p>We have entered all the documents available in this field in our country.</p>	

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>urban planning regulation</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>The law "For Territorial Planning and Development" was adopted in 2014 and year after year has undergone changes.</p> <p>Also, after the last earthquake with magnitude 6.4, changes were made regarding the shortening of procedures for obtaining a building permit in emergency situations.</p> <p>These incentives are mandatory to be used throughout the country.</p> <p><b>GENERAL LOCAL PLAN, Gjirokastra Municipality</b> is a strategic planning tool with social, economic, and ecological extensions aimed at integrating people and economic activities successfully into the environment, taking into account the balanced and sustainable development of the region.</p>

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	Law No. 107 dated 31.07.2014 "For Territorial Planning and Development"
Timeframe	2014 →
Does the document refer to the EU regulatory framework?	yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Urban Development
Target groups	Engineers, Architects, Administration employees, others
Is the document publicly available? Please provide references (e.g. web link...), if possible.	yes ( <a href="http://planifikimi.gov.al/index.php?elD=dumpFile&amp;t=f&amp;f=4762&amp;token=4cc99e01cad52e01a037e7080035a2dc749f03f5">http://planifikimi.gov.al/index.php?elD=dumpFile&amp;t=f&amp;f=4762&amp;token=4cc99e01cad52e01a037e7080035a2dc749f03f5</a> )

Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>This Law aims, among other things, to ensure the sustainable development of the territory; to assess the current and perspective potential for the development of the territory at national and local level; to promote appropriate actions for the protection, restoration and increase of the quality of natural and cultural heritage; enable the right to use and develop property; to create appropriate and fair conditions and equal opportunities for housing, economic and social activities for all social categories, economic and social cohesion and enjoyment of property rights; ensure that national and local planning authorities regularly draft and update planning documents; ensure that planning authorities coordinate their planning activities to promote harmonized and integrated territorial planning;</p>	

**Table 4.2: Urban planning regulation**

URBAN PLANNING REGULATION	
<b>Title</b>	<b>GENERAL LOCAL PLAN, Gjirokastra Municipality</b>
<b>Timeframe</b>	2016 →
Does the document refer to the EU regulatory framework?	yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	Local Level
Promoter	Ministry of Urban Development
Target groups	Engineers, Architects, Administration employees, others
Is the document publicly available? Please provide references (e.g. web link...), if possible.	yes ( <a href="http://planifikimi.gov.al/index.php?elD=dumpFile&amp;t=f&amp;f=1733&amp;token=360d1727adfc6805ad4100f7525d667f20bb663f">http://planifikimi.gov.al/index.php?elD=dumpFile&amp;t=f&amp;f=1733&amp;token=360d1727adfc6805ad4100f7525d667f20bb663f</a> )
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them

Does the document specifically deal with cultural heritage?	Yes
---	-----

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

General Local Plan - is a document drafted by local authorities, which determines the development of the territory under the jurisdiction of the municipality / commune for the next 10 years.

Each Municipality should have a General Local Plan (PPV) to develop the territory.

This is a legal obligation. The plan envisages any type of infrastructure and public service, such as: roads, water supply and sewerage network, electricity network, telephony, green spaces, schools, kindergartens, ambulances, etc. But PPV also sets rules for how you can develop your parcel. So, when your Municipality has a PPV, public services are improved, but rules are also set that you must follow.

The Detailed Local Plan (PDV) is always drafted on the basis of the General Local Plan (PPV).

The PPV determines which areas will be equipped with PDVs. PDV is drafted for development areas of public interest, such as: central station for public transport, university area, hospital, electrical substations, area with social housing. But, PDV is also designed for areas where there is a lot of interest for construction from the private sector, new areas of the city, or degraded areas, for which the local unit will design urban regeneration programs.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We have entered all the documents available in this field in our country and in our municipality.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of <b><i>seismic incentive frameworks</i></b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
In Albania, there are no existing incentives that could be listed among seismic incentive frameworks.

**Table 5.1: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
Title	
<u>Subsection</u>	
Timeframe	
Does the document refer to the EU regulatory framework?	-
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability)	



(max 2000 characters)

Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?

Do you have Earthquake funds?

/

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

/

## 6 Post-earthquake planning

Please, fill in the table below with information regarding **post-earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

<p>Please, add a short description of the situation in the field of <b>post-earthquake planning</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>In Albania, law dealing with reduction of the risk of disasters and the realization of civil protection to guarantee the protection of human life, living things, property, cultural heritage and the environment, through the strengthening of the civil protection system is in force. The law regulates the functioning of the civil protection system, defining the responsibilities of the institutions and structures of this system, international cooperation, the rights and obligations of citizens and private entities, education, training and inspection.</p>

**Table 6.1: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	Law No. 45/2019 "For civil protection"
Subsection	other
Timeframe	2019 →
Does the document refer to the EU regulatory framework?	Yes

Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Assembly of the Republic of Albania
Target groups	Government, Ministry of Civil Protection, Council of ministers, Ministries, National Agency of Civil Protection, Municipalities
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.parlament.al/Files/Akte/20190724173027ligj%20nr.%2045,%20dt.%2018.7.2019.pdf">https://www.parlament.al/Files/Akte/20190724173027ligj%20nr.%2045,%20dt.%2018.7.2019.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	<i>Yes (in cooperation with the law no.27/2018 “For cultural and museum heritage”)</i>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The document presents Albanian Law of Civil Protection in general terms.</p> <p>The contents of the document are divided into the following chapters:</p> <ol style="list-style-type: none"> <li>1. General provisions;</li> <li>2. Natural disaster risk assessment;</li> <li>3. The management of the National system of civil emergency (local/regional/national) ;</li> <li>4. The declaration of the state of civil emergency and the implementation of protective measures;</li> <li>5. Protection of cultural heritage;</li> <li>6. Monitoring, Notification, alert and international cooperation;</li> <li>7. Protection and disaster relief tasks and</li> <li>8. Administrative contraventions.</li> </ol>	

**Table 6.2: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	National Planning of Civil Protection
<u>Subsection</u>	other
Timeframe	2004 →
Does the document refer to the EU regulatory framework?	Yes



Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Assembly of the Republic of Albania
Target groups	Government, Ministry of Civil Protection, Council of ministers, Ministries, National Agency of Civil Protection, Municipalities
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.mbrojtja.gov.al/images/ec/Plani-Kombetar-EC.pdf">http://www.mbrojtja.gov.al/images/ec/Plani-Kombetar-EC.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	Yes
<p>National Planning is main document of Albanian politics and strategies for Civil Protection. It presents a manual that describes the most important factors and the whole institution structures in all management phases of civil protection.</p> <p>The contents of the earthquake section are divided into the following chapters:</p> <ol style="list-style-type: none"> <li>1. Earthquake Risk Assessment;</li> <li>2. Main characteristics of earthquakes;</li> <li>3. Factors that must be considered in prevention and disaster relief;</li> <li>4. Factors that must be considered in pre-earthquake period and protection;</li> <li>5. Factors that must be considered in post-earthquake period;</li> <li>6. Factors that must be considered in back to normal period and</li> <li>7. Earthquake Notification Service Scheme.</li> </ol>	

**Table 6.3: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	Law No. 45/2019 “For civil protection”
<b>Subsection</b>	other
<b>Timeframe</b>	2019 →
<b>Does the document refer to the EU regulatory framework?</b>	Yes

Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Assembly of the Republic of Albania
Target groups	Government, Ministry of Civil Protection, Council of ministers, Ministries, National Agency of Civil Protection, Municipalities
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.parlament.al/Files/Akte/20190724173027ligj%20nr.%2045,%20dt.%2018.7.2019.pdf">https://www.parlament.al/Files/Akte/20190724173027ligj%20nr.%2045,%20dt.%2018.7.2019.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	<i>Yes (in cooperation with the law no.27/2018 "For cultural and museum heritage")</i>
<p>The document presents Albanian Law of Civil Protection in general terms.</p> <p>The contents of the document are divided into the following chapters:</p> <ol style="list-style-type: none"> <li>1. General provisions;</li> <li>2. Natural disaster risk assessment;</li> <li>3. The management of the National system of civil emergency (local/regional/national) ;</li> <li>4. The declaration of the state of civil emergency and the implementation of protective measures;</li> <li>5. Protection of cultural heritage;</li> <li>6. Monitoring, Notification, alert and international cooperation;</li> <li>7. Protection and disaster relief tasks and</li> <li>8. Administrative contraventions.</li> </ol>	

**Table 6.4: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	National Planning of Civil Protection
<u>Subsection</u>	other
Timeframe	2004 →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level

Promoter	Assembly of the Republic of Albania
Target groups	Government, Ministry of Civil Protection, Council of ministers, Ministries, National Agency of Civil Protection, Municipalities
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.mbrojtja.gov.al/images/ec/Plani-Kombetar-EC.pdf">http://www.mbrojtja.gov.al/images/ec/Plani-Kombetar-EC.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	Yes

National Planning is main document of Albanian politics and strategies for Civil Protection. It presents a manual that describes the most important factors and the whole institution structures in all management phases of civil protection.

The contents of the earthquake section are divided into the following chapters:

1. Earthquake Risk Assessment;
2. Main characteristics of earthquakes;
3. Factors that must be considered in prevention and disaster relief;
4. Factors that must be considered in pre-earthquake period and protection;
5. Factors that must be considered in post-earthquake period;
6. Factors that must be considered in back to normal period and
7. Earthquake Notification Service Scheme.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All the documents which are available at a national level have been entered.

## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.
In relation to the up-mentioned request, all the insurance companies involved in this study provide the “insurance against earthquakes policy” as part of any offered package that they issue to the public. Thus, there is no further material to provide.

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?
To better clarify the phrase “depends on the location”. In the following study, this phrase was used not to describe the seismic division. The “location” in where the insured object is located is analysed only for reasons which are not expressively linked to the earthquake. Such reasons are: <ul style="list-style-type: none"> <li>- the location of the building can be near a water stream/ torrent/ spring</li> <li>- the location of the building can be on a soft soil</li> </ul>

**Table 7.1: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	SIGAL
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	- The inspection/close-up study of the building. - The condition and construction of the building

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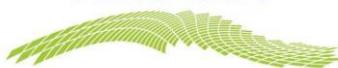
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	- Yes, it has to be, to determine the hazard scale.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	- No!
Multi-storey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>- It can be done (to take out option earthquake insurance only for a single apartment) only, if the apartment has a unique property certificate.</p> <p>- The level of the apartment affects the insurance premium due to insured level might have obvious distinctness which may affect the evaluative quality.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	<p>- SILVER (Fire, Thunder-Storm, Explosion, <b>Earthquakes</b>)</p> <p>- GOLD (Fire, Thunder-Storm, Explosion, <b>Earthquakes</b>, Pipeline Leaks, Window Breaks)</p>
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	- Of course!
Does the optional earthquake insurance premium depend on the property area?	- Of course!
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	- Of course! The location of the property affects not only the premium amount, but the decision-making-process, as well.
To what extent is the damage recovered?	-Up to 80% of the insured amount.
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	- Of course!
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	<p>- Is defined through the -site-evaluation-process.</p> <p>- The insurance covers only direct seismic damage.</p>

Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	- It is covered only the insured amount specified in the insurance policy.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	- STONE CITY HOSTEL (WOUTER DE ROOIJ)
Additional information regarding optional earthquake insurance	

**Table 7.2: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
<b>Insurance company</b>	<b>ALBSIG</b>
<b>CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE</b>	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	-Evaluation and inspection of the property.
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	-Yes! It is based on the EU (seismic code) politics.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	-No! It must have a (building permit) certificate.
Multi-storey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>- Yes, it is possible (to take out optional earthquake insurance), but it is not of a high interest.</p> <p>- We apply the same risk coefficient for all the floors. (Thus, there is dependency of the floors on the premium.)</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	<p>- We offer several sub-products which may be adjusted into several packages to fit the customers' demands. Different premium amounts apply to different package customizations.</p> <p>- Fire, Earthquake, Floods, Storm, Window</p>

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	breakings, Malicious Acts, Earth-slide, Robbery, Pipeline-leak.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	- Of course!
Does the optional earthquake insurance premium depend on the property area?	- Of course!
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	- Of course!
To what extent is the damage recovered?	- 100%
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	- Of course. Though, the difference on the premium amount may vary to an increase from 0.1 - 0.2 %.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	<ul style="list-style-type: none"> <li>- The definition of the damage is made through the inspection-on-site of it, when it occurs.</li> <li>- The insurance policy covers only the direct damages.</li> </ul>
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	- It is able to cover 100% of the insured amount. (The insurance company is able to reconstruct the totally-collapsed-building and return it to its original state prior to the earthquake.)
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	
Additional information regarding optional earthquake insurance	

**Table 7.3: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
<b>Insurance company</b>	<b>INTERSIG</b>
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	



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Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	<ul style="list-style-type: none"> <li>- The condition of the construction of the building.</li> <li>- The age of the building.</li> <li>- Close-up inspection of the building, whether it has any cracking.</li> </ul>
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	- Yes!
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	- No! In addition, it is mandatory to have a 10-year testing-certificate.
Multi-storey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<ul style="list-style-type: none"> <li>- Yes, it is possible, only after the property check.</li> <li>- The optional earthquake insurance is not dependent on the level of the apartment.</li> </ul>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	- Fire, Earthquake, Floods, Storm, Window breakings, Malicious Acts, Earth-slide, Robbery, Pipeline-leak.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	- It does not depend on the age and quality of the facility, but the risk coefficient is deducted.
Does the optional earthquake insurance premium depend on the property area?	- Again, the premium is not affected. Only the risk coefficient is affected, instead.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	<ul style="list-style-type: none"> <li>- No, it does not! It is calculated as the following:</li> <li>- To 100% of the insured amount – (minus) the risk coefficient.</li> </ul>
To what extent is the damage recovered?	- To 100% of the insured amount.
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	- Yes, it does!



How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	<ul style="list-style-type: none"> <li>- The damage is defined through on-site inspection.</li> <li>- The company covers all the kinds of damages, because it has already agreed to do so, upon signing the contract/policy.</li> </ul>
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	<ul style="list-style-type: none"> <li>- To the 100% of the insured amount – (minus) the risk coefficient.</li> </ul>
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	
Additional information regarding optional earthquake insurance	

## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.4: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
<b>Title</b>	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	



Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.
/

## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Additional topic.**

TOPIC	
Title	<b>REGULATION FOR PROTECTION, INTEGRATED CONSERVATION AND ADMINISTRATION OF HISTORICAL CENTER AND PROTECTED ZONE IN THE CITY OF GJIROKASTRA</b>
Timeframe	2015 →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	Local Level
Promoter	Ministry of Culture and Ministry of Urban Development
Target groups	Engineers, Architects, Administration employees, others
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes ( <a href="http://new.kultura.gov.al/wp-content/uploads/2017/12/VKM_nr_619.pdf">http://new.kultura.gov.al/wp-content/uploads/2017/12/VKM_nr_619.pdf</a> )
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both of them
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
This regulation defines the obligations and ways for the protection, integrated conservation and administration of the historical-cultural values and landscape values of the Historic Center and the Protected Area of the city of Gjirokastra. For important historical-cultural values, historical Gjirokastra, with decision no. 172, dated 2.6.1961, of the Council of Ministers, was declared "City - Museum" and was placed under state protection.	



The main objectives of this regulation are:

1. Protection, conservation, maintenance and restoration of historical-cultural values and landscape values of the Historic Center of Gjirokastra.
2. Administration of the Historic Center of Gjirokastra according to the zoning presented in the map attached to this regulation as an integral part of it.
3. Ways of cooperation with the local government units of the city of Gjirokastra for the administration, protection and restoration of the cultural heritage and landscape values of the Historical Center of Gjirokastra.

## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN CROATIA (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has some changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix).

Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1st stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion,



the chapter “***Seismic incentive frameworks***” is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds...). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic “***Post earthquake planning***”. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

---

**Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
<b>Project partner</b>			<b>PP3 – Grad Kaštela</b>			
Country			Croatia			
Country area			56.594 km <sup>2</sup>			
Population			4.284.889			
Administrative division of the country Please, indicate existing country levels (e.g: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			National level County level – counties (cro. županije) (20 +1) Local level – municipalities (cro. općine)(555)			
<b>Recent earthquakes</b> Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.						
	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1	2020.	45.87°N 16.03°E	5,5	VII	1	damage: 26.197 buildings
2	1996.	42.83° N, 17.69° E	6,0	VIII	/	damaged cultural heritage and numerous buildings
3	1964.	45.31° N, 18.40° E	5,7	VIII	1	damage: 2.000 buildings
4	1962.	43.29° N, 17.02° E	6,2	VIII	/	damage: 11.000 buildings
5	1942.	43.44° N, 17.21° E	6,2	VIII- IX	/	damage: over 100 buildings
6	1962.	43.29° N, 17.02° E	6,1	VIII- IX	/	no records
7	1938.	46.07° N, 16.94° E	5,6	VIII	/	no records
8	1916.	45.23° N, 14.74° E	5,8	VIII	/	no records

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BASIC INFORMATION						
9	1909.	45.56° N, 15.51° E	5,8	VIII	/	no records
10	1898.	43°37'N 16°43'E	/	IX	/	no records
11	1880.	45.87°N 16.03°E	6,3	VIII	1	damage: 1.758 buildings
12	1757.	45.83° N 17.38° E	/	IX	/	no records
13	1667.	42.60°N 18.10°E	/	IX -X	3.000	Almost the entire city of Dubrovnik was demolished



## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>seismic norms</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>Up until 1964, buildings were constructed with no consideration for seismic shaking – and about one-third of the existing building stock dates from this period. In 1964, first seismic codes were introduced, in 2007 ENV norms were very well used and after 2013 (2014 for ongoing projects) structural Eurocodes are mandatory. Eurocode 8, or HRN EN 1998, must be used for the design of earthquake-resistant structures. Several nationally determined parameters (NDPs) are added to the main document. Other documents are not in use.</p> <p>After the earthquake in Zagreb (22<sup>nd</sup> March 2020), several documents regarding the seismic safety and vulnerability are in production or are already published. Also, several initiatives to reduce seismic vulnerability of existing structures are funded by Croatian Science Foundation as a national research projects. There is also a lot of scientific research regarding the topic at almost every Faculty of Civil Engineering in Croatia (Zagreb, Split, Rijeka, Osijek).</p>

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	Eurocode 8
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>• design of new structures</li> <li>• assessment of existing structures</li> <li>• retrofitting structures</li> </ul>
Timeframe	2014. ->
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	European Committee for Standardization (CEN)
Target groups	Civil engineers

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SEISMIC NORMS	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	/
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No  <i>"Although the provisions of this Standard are applicable to all categories of buildings, the seismic assessment and retrofitting of monuments and historical buildings often requires different types of provisions and approaches, depending on the nature of the monuments."</i>
<p>                             Description of the document/incentive (explain how does it affect seismic vulnerability)                              (max 2000 characters)                         </p> <p>                             In the eurocode series of European standards (EN) related to construction, Eurocode 8 (EC8): Design of structures for earthquake resistance describes how to design structures in seismic zone, using the limit state design philosophy. It was approved by the European Committee for Standardization (CEN) on 23 April 2004. Its purpose is to ensure that in the event of earthquakes: human lives are protected, damage is limited, structures important for civil protection remain operational.                         </p> <p>                             The random nature of the seismic events and the limited resources available to counter their effects are such as to make the attainment of these goals only partially possible and only measurable in probabilistic terms. The extent of the protection that can be provided to different categories of buildings, which is only measurable in probabilistic terms, is a matter of optimal allocation of resources and is therefore expected to vary from country to country, depending on the relative importance of the seismic risk with respect to risks of other origin and on the global economic resources.                         </p> <p>                             Special structures, such as nuclear power plants, offshore structures and large dams, are beyond the scope of EN 1998. EN 1998 contains only those provisions that, in addition to the provisions of the other relevant Eurocodes, must be observed for the design of structures in seismic regions. It complements in this respect the other EN Eurocodes.                         </p> <p>                             Eurocode 8 comprises several documents, grouped in six parts numbered from EN 1998-1 to EN 1998-6.                         </p> <p>                             Part 1: General rules, seismic actions and rules for buildings                              Part 2: Bridges                              Part 3: Assessment and retrofitting of buildings                              Part 4: Silos, tanks and pipelines                              Part 5: Foundations, retaining structures and geotechnical aspects                              Part 6: Towers, masts and chimneys                         </p>	

**Table 2.2: Seismic norms.**

SEISMIC NORMS	
<b>Title</b>	<b>Manual for earthquake restoration of existing masonry buildings</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>• retrofitting structures</li> </ul>
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Faculty of Architecture
Target groups	construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.arhitekt.hr/files/file/dostupne-datoteke/Prirucnik_Potres_GVAS_22042020_re_v02.pdf">https://www.arhitekt.hr/files/file/dostupne-datoteke/Prirucnik_Potres_GVAS_22042020_re_v02.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>“The manual for earthquake reconstruction of existing masonry” provides answers to the questions: what are the usual damages caused by the earthquake and what can be done in terms of repairing the damage and increasing the seismic resistance of the building? The largest number of buildings affected by the earthquake is in the old city centers. Existing buildings in the old city centers have relatively low earthquake resistance, which is why it is necessary to raise the level of earthquake resistance. The aim of the manual is to show the known techniques of repair and reinforcement of masonry buildings, in order to get a broader picture of what can be applied.</p>	

**Table 2.3: Seismic norms.**

SEISMIC NORMS	
<b>Title</b>	<b>Techniques of repair and reinforcement of masonry buildings</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>• retrofitting structures</li> </ul>
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Faculty of Architecture
Target groups	construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.arhitekt.hr/files/file/dostupne-datoteke/Tehnike-popravka-i-pojac%CC%8Canja-zidanih-zgrada_GVAS_R01.pdf">https://www.arhitekt.hr/files/file/dostupne-datoteke/Tehnike-popravka-i-pojac%CC%8Canja-zidanih-zgrada_GVAS_R01.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>In this manual, the aim is to expand the knowledge about the usual earthquake damage on masonry buildings, and to give a greater number of techniques for repairing and strengthening the load-bearing structure. Remediation of individual damages as well as raising resistance can be achieved in several ways with different techniques, traditional and common that are easy to perform or modern that require specialist performance. In this guide, we will show some of these techniques.</p>	



Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All existing documents are entered.

### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>building regulations</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>In Croatia, there is only one valid document regarding the building regulations. It is called “Construction Act” and it is valid on the national level. Although, there are some different local guidelines for a specific types of building regulations, for seismic building regulations there are the same for a whole country.</p>

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
<b>Title</b>	<b>The Construction Act</b>
Timeframe	2013. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Construction and Physical Planning
Target groups	construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.zakon.hr/z/690/Zakon-o-gradnji">https://www.zakon.hr/z/690/Zakon-o-gradnji</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	<p>No</p> <p><i>Deviation from the basic requirements for the building is allowed if the reconstructed building is entered in the cultural heritage register</i></p>



#### BUILDING REGULATIONS

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

The Construction Act regulates the design, construction, use and maintenance of buildings, as well as the implementation of administrative and other procedures to ensure the protection and arrangement of space and to ensure the basic requirements for construction. This Act is a basic document for strategies and regulations in the field of construction, which include protection against risks associated with earthquakes and which provide recommendations for improving earthquake resistance for buildings undergoing significant renovation.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All existing documents are entered.

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of <b>urban planning regulation</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
In Croatia “Zakon o prostornom uređenju” (The law on spatial planning) is a valid document for urban planning regulations.

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	The law on spatial planning
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Construction and Physical Planning
Target groups	regional and local self-government units
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, <a href="https://www.zakon.hr/z/689/Zakon-o-prostornom-ure%C4%91enju">https://www.zakon.hr/z/689/Zakon-o-prostornom-ure%C4%91enju</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	No
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)  The law on spatial planning is a valid document for urban planning regulations. This document does not affect seismic vulnerability, but is an umbrella document for planning the construction areas. This document is guided by the principle of spatial sustainability of development and quality of construction and affects the principles of cultural heritage protection.	





Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All existing documents are entered.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of <b><i>seismic incentive frameworks</i></b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
/
Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?  Do you have Earthquake funds?
The country and the scientific and professional community are after the earthquake in Zagreb intending to introduce the seismic certificates. At the moment, seismic certificates are not existing.
Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.
There are no existing documents.

## 6 Post-earthquake planning

Please, fill in the table below with information regarding **post-earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

<p>Please, add a short description of the situation in the field of <b>post-earthquake planning</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>After the earthquake in Zagreb (22<sup>nd</sup> March 2020), several documents regarding the seismic safety and vulnerability are in production or are already published. Also, several initiatives to reduce seismic vulnerability of existing structures are funded by Croatian Science Foundation as a national research projects. There is also a lot of scientific research regarding the topic at almost every Faculty of Civil Engineering in Croatia (Zagreb, Split, Rijeka, Osijek).</p>

**Table 6.1: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	Emergency seismic reconstruction program
Subsection	planning
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Croatian Chamber of Civil Engineers

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POST-EARTHQUAKE PLANNING	
Target groups	Government, Ministries, Civil Protection, Rescue Units, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.hkig.hr/izdvojeno/Prirucnik-Urgentni-program-potresne-obnove-UPPO/18">http://www.hkig.hr/izdvojeno/Prirucnik-Urgentni-program-potresne-obnove-UPPO/18</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>Emergency seismic reconstruction program proposes technical solutions for the reconstruction of chimneys, gable walls and other attic structures. Practical solutions have been developed that suggest the installation of connecting elements in the newly constructed attic walls and the division of other elements of renovation for the subsequent continuation of the overall renovation of earthquake-damaged buildings.</p> <p>The manual is divided into ten chapters:</p> <ol style="list-style-type: none"> <li>1. General on the emergency recovery program;</li> <li>2. Chimneys;</li> <li>3. Attic walls;</li> <li>4. Roof constructions;</li> <li>5. Elements of architectural heritage;</li> <li>6. Minor urgent remediation interventions;</li> <li>7. Supports;</li> <li>8. Cost estimates;</li> <li>9. Design and supervision;</li> <li>10. Examples and details of technical solutions.</li> </ol> <p>The first chapter explains in detail the levels of restoration and the steps of urgent intervention that must be implemented. The second, third, fourth and fifth chapters deal with the reasons for the collapse of individual structures and provide technical solutions for reconstruction. The sixth and the seventh chapters deal with specific activities on support works and emergency remediation interventions. The eighth chapter provides examples of cost estimates with descriptions of possible items of work for the implementation of the emergency program earthquake renewal. The ninth chapter deals with the issue of design and control. Due to the urgency of the implementation of specific design and supervision works</p>	

### POST-EARTHQUAKE PLANNING

with relatively few values of works for most individual buildings and due to the need to supplement design solutions during the performance, it is proposed to entrust these activities to the same executor. In the tenth chapter there are given examples and details of technical solutions, which will certainly be of great help in renovation work.

**Table 6.2: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Plan for the development of the civil protection system in the area of the City of Kaštela</b>
<u>Subsection</u>	planning
Timeframe	2016. →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Local level
Promoter	The city council of the City of Kaštela
Target groups	Local Civil Protection, Rescue Units
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.kastela.hr/DesktopModules/Bring2mind/DMX/API/Entries/Download?language=hr-HR&amp;Command=Core_Download&amp;EntryId=1089&amp;PortalId=0">https://www.kastela.hr/DesktopModules/Bring2mind/DMX/API/Entries/Download?language=hr-HR&amp;Command=Core_Download&amp;EntryId=1089&amp;PortalId=0</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
The plan for the development of the civil protection system in the area of the City of Kaštela sets out guidelines for the organization and development of the system for the protection of people, the environment and material goods, which also includes cultural heritage. The plan determines the structure of protection, the alert system and the education of the population.	

**Table 6.3: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Protection and rescue plan for the territory of the Republic of Croatia</b>
<u>Subsection</u>	planning
Timeframe	2010. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Croatian Chamber of Civil Engineers
Target groups	Government, Ministries, Civil Protection, Rescue Units, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://narodne-novine.nn.hr/clanci/sluzbeni/full/2010_08_96_2_707.html">https://narodne-novine.nn.hr/clanci/sluzbeni/full/2010_08_96_2_707.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>The protection and rescue plan for the territory of the Republic of Croatia regulates the responsible services in natural and technical-technological catastrophes and major accidents. The protection and rescue plan is based on the Assessment of the vulnerability of the Republic of Croatia to natural and technical-technological disasters. The Plan sets out guidelines for preventive activities for the operation of all participants in the protection and rescue system. Within the Plan, earthquakes were recognized as a significant natural risk for the territory of the Republic of Croatia. In earthquake protection procedures and measures, the plan shows continuous instrumental monitoring of seismic activities and data collection, processing and analysis, subsequent research and informing the competent state authorities about the basic parameters of earthquakes directly on the issue of strong earthquakes. All information on the consequences of the earthquake is used for the purposes of operational forces and protection and rescue participants.</p> <p>Earthquake preparedness includes the following body and service body:</p> <ul style="list-style-type: none"> <li>- Croatian Government;</li> </ul>	

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<ul style="list-style-type: none"> <li>- Seismological service;</li> <li>- State Hydrometeorological Institute;</li> <li>- State Protection and Rescue Unit;</li> <li>- Units of local and regional government.</li> </ul>

**Table 6.4: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Civil Protection System Act</b>
<u>Subsection</u>	general legislation document relating to civil protection
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of the Interior
Target groups	Civil Protection, Rescue Units, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.zakon.hr/z/809/Zakon-o-sustavu-civilne-za%C5%A1tite">https://www.zakon.hr/z/809/Zakon-o-sustavu-civilne-za%C5%A1tite</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
The Civil Protection System Act regulates the operation of civil protection in the Republic of Croatia. Civil protection is a system of organizing participants, operational forces and citizens to achieve the protection and rescue of people, material and cultural goods and the environment in major accidents and disasters. Seismic vulnerability is covered by law in the framework of natural risk management and mitigation of negative consequences after a disaster, especially in terms of providing emergency assistance to save lives, public safety and buildings.	

**Table 6.5: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Law on reconstruction of earthquake buildings in the area of the City Of Zagreb, Krapina-Zagorje Counties and Zagreb Counties</b>
<u>Subsection</u>	planning
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	County level
Promoter	Ministry of Physical Planning, Construction and State Property
Target groups	construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://narodne-novine.nn.hr/clanci/sluzbeni/2020_09_102_191_5.html">https://narodne-novine.nn.hr/clanci/sluzbeni/2020_09_102_191_5.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>This Law regulates the manner and procedure of reconstruction or removal of buildings damaged or destroyed in a natural disaster declared in the City of Zagreb, Krapina-Zagorje County and Zagreb County affected by the earthquake on March 22, 2020, construction of replacement family houses and housing for those affected. In the event of an accident, the competent authorities, deadlines for action and other related issues shall be determined in order to protect human life and health, protect animals, protect property, protect the environment, nature and cultural heritage and create conditions for normal life in the affected area.</p> <p>This Law prescribes:</p> <ul style="list-style-type: none"> <li>- reduction and simplification of documentation required for reconstruction, reduction of costs and shortening of the time of their preparation, with co-financing of the Republic of Croatia and the City of Zagreb, ie Krapina-Zagorje County and Zagreb County</li> </ul>	



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<ul style="list-style-type: none"> <li>- establishment of the Reconstruction Fund of the City of Zagreb, Krapina-Zagorje County and Zagreb County</li> <li>- organization and implementation of renovation of damaged buildings by repairing the structure, strengthening the structure, complete renovation of the structure, complete renovation of the building and / or repair of non-structural elements or removal of destroyed buildings, co-financed by the Republic of Croatia and the City of Zagreb and Krapina-Zagorje County</li> <li>- construction of replacement family houses with funds from the Republic of Croatia, the City of Zagreb, Krapina-Zagorje County and Zagreb County, ie financial assistance for their construction</li> <li>- financial assistance for the necessary temporary protection of buildings and the removal and retention of dangerous parts of buildings that could or may endanger human life or health, for the repair or replacement of chimneys and gable walls and repair of stairs and elevators</li> <li>- financial assistance for the execution of works on the reconstruction of damaged buildings for owners and co-owners who renovate buildings themselves</li> <li>- temporary and permanent housing care for persons affected by the disaster.</li> </ul>

**Table 6.6: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>The Manual for Emergency Seismic Reconstruction Program</b>
<u>Subsection</u>	organization of earthquake response/rescue
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Faculty of Civil Engineering, University of Zagreb
Target groups	construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, <a href="https://www.grad.unizg.hr/?@=2aljv">https://www.grad.unizg.hr/?@=2aljv</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period

POST-EARTHQUAKE PLANNING	
Does the document specifically deal with cultural heritage?	No or at smaller extent
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>“The Manual for Emergency Seismic Reconstruction Program” provides answers to the questions: How to deal with urgent reconstructions, how to stabilize or renovate chimneys, attic walls, roof structures and basic elements of architectural heritage. Also, it defines the estimation of reconstruction costs, the decision making processes in the design and supervision and it gives examples and details of technical Solutions for the reconstruction of damaged buildings.</p>	

## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.
We sent an inquiry to several insurance companies but unfortunately we did not receive the requested information. However, according to the Structure of the total insurance premium in 2019, it can be estimated that it is about 6.46%.

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?
Insurance companies in Croatia did not provide information on the division of insurance according to seismic zones. According to the answers of the insurance companies that were contacted, such a division does not exist in Croatia.

**Table 7.1: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	MERKUR osiguranje
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	No

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Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	No
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	Yes. The insurance company does not check whether the insured building holds a building/occupancy permit.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	A multistorey building can be insured as entire building or as an individual apartment. In the second case the damage to common areas is also covered in the respective share. The insurance premium for single apartment does not depend on its location within a building.
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Earthquake insurance in an extension of insurance to cover fire hazards (e.g. fire insurance, home insurance for private individuals, construction insurance).
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	Yes, the earthquake insurance premium depends on the year of construction, before or after 1964.
Does the optional earthquake insurance premium depend on the property area?	Yes
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes
To what extent is the damage recovered?	The insurance company deducts 3 % of the insurance sum from the damage incurred.
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	No.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect	If the fire is caused by an earthquake, the property has to be insured both, against consequences of earthquake as well as of fire.

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damage (e.g. fire damage, caused by an earthquake)?	
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Yes. But, the insurance is obliged to compensate only the damage caused by an earthquake with an intensity of 5 or more degrees of the Mercalli Cancani-Sieberg scale.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>An approximate insurance premium for typical single-family house with gross area 150 m<sup>2</sup>:</p> <ul style="list-style-type: none"> <li>- standard package: 100 €</li> <li>- comfort package: 160 €</li> <li>- exclusive package: 270 €</li> </ul>
Additional information regarding optional earthquake insurance	/

## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.2: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
<b>Title</b>	<b>The Insurance law</b>
Timeframe	2020. →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Finance
Target groups	Insurance companies
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes <a href="https://www.zakon.hr/z/369/Zakon-o-osiguranju">https://www.zakon.hr/z/369/Zakon-o-osiguranju</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	No
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)  The insurance law regulates the conditions under which insurance companies may perform insurance business, including earthquake insurance. The law does not contain technical details on the conditions of insurance against earthquakes and other natural disasters, as well as insurance of cultural heritage property.	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.
All existing documents are entered.

## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Insert topic**

TOPIC	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN GREECE (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has come changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix). Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1<sup>st</sup> stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been





included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion, the chapter “***Seismic incentive frameworks***” is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds...). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic “***Post earthquake planning***”. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

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#### **Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION																											
Project partner			PP7 – Univ. of Crete, PP8 – Region of Crete																								
Country			GREECE																								
Country area			132.049Km <sup>2</sup>																								
Population			10.816.286																								
Administrative division of the country Please, indicate existing country levels (e.g.: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			<ul style="list-style-type: none"> <li>- National level: Greece</li> <li>- Regional level: 13 regions</li> <li>- Local level: 332 municipalities</li> </ul>																								
<p>Recent earthquakes</p> <p>Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.</p> <table border="1"> <thead> <tr> <th></th> <th>Year</th> <th>Location (GPS)</th> <th>Magnitude</th> <th>Max. intensity</th> <th>Fatalities</th> <th>Comments (earthquake consequences...)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1508</td> <td>Ierapetra 35,2N 25,4E</td> <td>7,5</td> <td>X</td> <td>~300</td> <td>Very strong earthquake affecting mainly eastern Crete and especially Heraklion. It was reported in many chronicles and reports. It devastated the town of Heraklion causing heavily damages and collapses in monastery and other public buildings (only 4-5 houses remained habitable). Initial Venitian fortification was heavily damaged and rebuilt again after. The small town of Ierapetra was devastated.</td> </tr> <tr> <td>2</td> <td>1780</td> <td>Ierapetra 34,9N 25,8E</td> <td>7</td> <td>X</td> <td>300</td> <td>Affected mainly eastern Crete and Ierapetra area. 13 villages were</td> </tr> </tbody> </table>								Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)	1	1508	Ierapetra 35,2N 25,4E	7,5	X	~300	Very strong earthquake affecting mainly eastern Crete and especially Heraklion. It was reported in many chronicles and reports. It devastated the town of Heraklion causing heavily damages and collapses in monastery and other public buildings (only 4-5 houses remained habitable). Initial Venitian fortification was heavily damaged and rebuilt again after. The small town of Ierapetra was devastated.	2	1780	Ierapetra 34,9N 25,8E	7	X	300	Affected mainly eastern Crete and Ierapetra area. 13 villages were
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2	1780	Ierapetra 34,9N 25,8E	7	X	300	Affected mainly eastern Crete and Ierapetra area. 13 villages were																					



BASIC INFORMATION						
						devastated. The ottoman castle with its quards turned to ruins. The earthquake destroyed mainly buildings, monasteries and mosques.
3	1810	Heraklion 35,5N 25,6E	7.8	IX	2000-3000	Affected southern Greece and eastern Mediterranean, with most damages at central Crete. The two third of the buildings in the city of Heraklion was totally destroyed. The same happened with many nearby villages. The houses, most of the monasteries and the mosques of the city collapsed. The majority of the venetian and older monuments of the city, like the old dockyards ArsenaliAntichi were destroyed. Only some parts remain till our days.
4	1856	Heraklion 35,6N 25,0E	8	X	626	The whole eastern Mediterranean was strongly affected. In Cyprus and in cities of the coast of Syria it caused serious damages. It was felt in Izmir, Damaskos, Cairo, Alexandria, Avlona, Byrout and Haifa. The earthquake destroyed mainly buildings, monasteries and mosques. Wooden buildings occurring in Heraklion Market were unaffected by the earthquake. In the whole Crete island 11317 houses were damaged from which 6512 were entirely destroyed. Heraklion and the surroundings suffered the largest destructions. From the 3620 houses only 18 were standing up and were inhabitable.
5	1867	Cephalonia 38,39N 20,52E	7,2	X	224	The island of Cephalonia and especially the towns of Lixouri was mainly affected by this EQ, where only 2 houses remained safe.

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BASIC INFORMATION						
						Several villages were also totally devastated. In total 2612 houses were destroyed, and 2946 suffered heavy damages. Large fissures were observed in the ground of Lixouri and landslides and liquefaction were reported.
6	1867	Lesvos 39,25N 26,21E	6,8	X	550	The EQ destroyed the capital and many villages of Lesvos island. In Mitilene 2498 houses were totally destroyed, 2407 suffered heavy damages. From the 70 villages only 6 located in the mountains escaped disaster. Liquefaction and landslides took place.
7	1881	Chios 38,3N 26,2E	6.4	IX	4200	EQ stroke the southern part of Chios island and the Turkish coast. It totally destroyed all the villages at the southern part of the island causing many victims due to the narrow roads and the fact that main shock happened immediately after the first foreshock. A very strong after shock followed some days after completing the disaster. A small tsunami was also produced while sea bottom sunk about a meter.
8	1926	Rhodos 36,5N 27,5E	8	XI	18	Destructive earthquake stroke eastern Crete and Rhode island and Egypt. The earthquake destroyed mainly buildings, monasteries and mosques. Damage to archaeological exhibits. Iseoseismals were published by Sieberg (1932). The coastal area near Heraklion was risen up to 20-30 cms.
9	1932	Ierissos 40,45N 23,76E	7	X	161	It was a very strong shallow EQ that totally destroyed the villages of Ierissos and Stratoni in Chalkidiki. In Ierissos 650 houses



BASIC INFORMATION						
						were totally destroyed. Holly Mountain was heavily affected especially the majority of its monasteries, and only two survived without serious damages. In total 4106 houses were totally destroyed and 3218 were serious damaged. A large fissured appeared along a length of 7 kms with a width of 2-10m. A small tsunami was produced that reached 2 meters at Ierissos and Stratoni.
10	1935	Crete 35,9N 25,2E	7	VIII	8	It was a deep EQ (100kms) that affected all eastern Mediterranean. It caused several collapses at Heraklion and surrounding villages. 374 families stayed homeless.
11	1953	Ionian Isls. 38,1N 20,6E	7,2	X	455	Three strong Eqs affected Ithaka, Zante and Cephalonia islands totally devastating them. From the 33.000 buildings of these islands 27.659 were totally destroyed. A fire also started in Zante causing many damages. Cephalonia island rose up about 60cms. It was probably the first time in Greece that an international first aid mission was organised to support victims and assist in reconstruction of the islands.
12	1956	Amorgos 36,72N 25,76E	7,5	IX	53	It was a very strong and shallow EQ that caused serious damage in the islands Santorini, Amorgos, Anafi, Astypalea, Ios, Paros, Naxos, Kalymnos, and Leipsoi. Totally, 529 houses were destroyed, 1482 suffered serious damage and 1750 light damages. A great tsunami was produced that reached 25 m at Amorgos,, 20m at Astypalea and 2 m at the harbour of Heraklion.



BASIC INFORMATION						
13	1978	Thessaloniki 40,74N 23,27E	6,5	VIII	47	<p>It was the first EQ in Greece that affected a big modern city, that of Thessaloniki. Also it was felt in many places of northern Greece and nearby countries, like Bulgaria, south Yugoslavia and Albany. Epicentre was shallow (6kms) and located 10 kms east of the town. Several buildings collapsed, while 3170 buildings suffered non repairable damage – among them 35 schools- 13918 buildings suffered serious damages and 49071 buildings suffered light damage. In total in Thessaloniki, Kilkis, Serres and Chalkidiki prefectures, 9480 buildings suffered non repairable damage, 23589 serious damage and 67541 light damage. Some pronounced historical buildings like the churches of St Georges or Rotunda mainly at its dome (cupola) and mosaics and Panagia Acheiropoiitos, with fantastic frescos and mosaics, faced serious damages too. The restoration of the cultural heritage and monuments of Thessaloniki lasted many years (in some cases like Acheiropoiitos more than 10 years). These were mainly focused on the stabilization of the architectural parts of the buildings as well as recovery of the damages in frescos, mosaics and paintings. The cost of disaster reached 1,2 Billion Euros. A major revision of Earthquake regulations happened after that.</p>
14	1981	Alkionides 38,07N 23,0E	6,7	IX	20	<p>A set of three major and shallow EQs happened west of Athens in the areas of Loutraki, Megara,</p>



BASIC INFORMATION						
						Elefsina, Aspropirgos and Perama causing many damages in buildings. The EQ is the second strong one that has affected Athens the last century. In total 22554 buildings were destroyed or suffered non repairable damages, 11745 suffered serious damages and 50222 lighter damages. The trace of the fault was recognised for a length of more than 15Kms with a drop down of about 60cms. Liquefaction, rock slides and small tsunamis were produced too.
15	1986	Kalamata 37,05N 22,11E	6	IX	20	It was a shallow EQ that caused major destructions at the city of Kalamata. Some villages nearby. From the 8124 houses of Kalamata 20% had to be demolished, 16% suffered serious damages, 36% light damages and only 28% remained unaffected. Two five store apartments collapsed by the main shock and several others by the aftershocks that followed. A long fissure of more than 15 kms was developed with vertical displacement of about 12 cms. Rock falls happened during the EQ, while ground noise was recorded few weeks before main shock and the day before a sea level raise of 0,5 m was observed for 24h. The Modern Antiseismic Regulation of Greece was set after this EQ.
16	1995	Egion 38,37N 22,15E	6,1	VIII	26	A very swallow EQ at that caused serious damages in many buildings near Patras and Egion. A block apartment and hotel collapse causing the majority of victims. Surface ruptures along 5 kms were reported. Small landslides, vertical



BASIC INFORMATION						
17	1999	Athens 38,13N 23,55E	5,9	IX	145	<p>displacement in coastal areas and liquefactions were observed.</p> <p>A surface EQ happened very close to Athens causing several collapses and heavy damages to buildings. That was the biggest earthquake that occurred in a low seismic area. According to historic evidence or other sources there were no incidents of other earthquakes in the past in that specific area which had been designated as an area in low seismic danger. The cost reached up to 3 billion Euros and it is the highest caused by a natural hazard in Greece. Pick ground acceleration at the centre of Athens (18kms from epicentre) was measured at 0,7g. In total, 110 buildings collapsed, 5222 were heavily damaged and demolished after, and 38165 were moderate to light damaged. In one suburb, AnoLiosiaAnoLiosia (150 acres): 10% of the buildings in that area had been characterized habitable, 45% repairable and the rest 45% should be demolished. Those buildings that should be demolished were mainly old buildings built before 1960 with one or two floors. Among the buildings damaged was the Cathedral, some monasteries. All classical monuments survived the earthquake almost without damage, and only minor effects were reported in some cases. On the Acropolis, small rotations of some columns of the Parthenon and the Erechthion were observed, which were considered of minor importance by the archaeologists.</p>





BASIC INFORMATION						
18	2006	Kithera 36,31N 23,24E	6,7	VII	1	The intermediate depth EQ mainly affected the island of Kithera and western Crete and Peloponese. The epicentre which was offshore and the focal depth helped to have only light damages and few victims. The structural damage to buildings was limited to the islands of Kythira and Antikythira and to the city of Chania, western Crete. Furthermore, landslides and/or rockfalls were reported only at the village of Mitata (Kythira island), where the main square and the road were damaged due to a landslide.
19	2014	Cephalonia	5,8	VII		On January 26, 2014 (15:55 local time), a very strong earthquake hit Cephalonia island. The EQ caused extensive damage to buildings and infrastructure (eg the port of Lixouri) in Lixouri and the wider area of the Paliki peninsula. Rainfalls and landslides have caused many problems on the island's road network. On February 3, a new strong earthquake struck Cephalonia, causing new damage to buildings and infrastructure.
19	2017	Kos 36,96N 27,45E	6,6	VII	2	It was a very shallow EQ with depth of about 2 kms that caused severe damages mainly at the old town of Kos island. An old church, a mosque and a 14th century castle were seriously affected. Large fissures developed at the harbor that was turned to unsafe for long

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BASIC INFORMATION						
						time. and one collapse in an old building. A small tsunami of about 2m was produced that mainly affected Turkish coast.
20	2017	Lesvos 38.84N 26.36E	6.6	VIII	1	<p>The EQ affected the southern part of the island. Injuries, damage to buildings and infrastructure, landslides and rockfalls were also reported.</p> <p>In the village of Vrisa, one person was killed and a lot of people were homeless. Some buildings collapsed, and dozens were heavily damaged.</p> <p>In the area of Plomari - Agios Isidoros landslides were reported, that caused some problems in the road network.</p>

## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of **seismic norms** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

A clearly common component between Greek and European antiseismic regulations is that the performance requirements and compliance criteria must be fulfilled for the following 3 states:

- No collapse
- Damage limitation
- Life protection

This defines a customized implementation framework, with intervention measures depending on the flexibility of the construction.

The main problem is the lack of design and constructional info (the so called “as built” info). A significant fact that governs all the antiseismic protection activities, is that: most historical buildings are unreinforced, they usually have no connecting material, shallow foundation, and no special design for transferring the seismic loads to the ground (avoiding deformations). Thus, most of them have gone through several seismic episodes, exceeding their ultimate limit state, standing nowadays on their residual loads.

There are Microzonal Studies, designed for several countries in Greece, sometimes more detailed, for specific regions with high seismic vulnerability. These considerations have the advantage of taking into account the special conditions of each region (spatial, urban, geological background). The capital cities of Heraklion, Rethymnon, Chania, Ag. Nikolaos in Crete, have such microzonal studies, contributing to a more detailed design. However, they are not always obligatory, but only indicative. They are not strictly attached to the official Greek Regulations’ System, but depend on the local authorities to apply them, helping to avoid possible design failures, deriving from generalization.

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	EAK 2000 (Greek Antiseismic Regulations)



<b>SEISMIC NORMS</b>	
Subsection:	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	<p>2001: First application of EAK 2000. The first Greek Seismic Design Code applied in 1959. In 1984 it was supplemented by additional articles. In 1995, the N.E.A.K. was put into exclusive application. EAK - 2000 applied from 2001 until today.</p> <p>2003: Update of EAK 2000 and supplementation (New Seismic Hazard Map)</p> <p>2003: Special details and clarification for masonry</p> <p>2010: Update of EAK 2000</p>
Does the document refer to the EU regulatory framework?	It is partly (indirectly) corresponding to EU rules. Especially the updates, include the main principles of Eurocodes, along with Greek data adaptation. Though, some differences arise.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	“Organisation of Antiseismic Protection – OASP), approved by government (Ministry of Infrastructure)
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.oasp.gr/userfiles/EAK2000.pdf">https://www.oasp.gr/userfiles/EAK2000.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- earthquake
Does the document specifically deal with cultural heritage?	No such division. Code is applicable, considering a monument as an unreinforced masonry building (simulation).

SEISMIC NORMS
<p>Description of the document/incentive (explain how does it affect seismic vulnerability)</p> <p>[1] This Code concerns the design of structures against earthquake. It does not cover structures for which partial or full earthquake isolation is applied. Additional provisions concerning specific materials are included in the relevant Codes.</p> <p>[2] The criteria and design rules included in the Code may be applied generally, while application rules are applicable mainly to buildings. For other specific types of structures or for structures for which partial or full earthquake isolation is applied, supplementary provisions are required.</p> <p>[3] The seismic design procedure proposed in this Code forms a set of rules of maximum acceptable simplification, which, when applied, is considered to satisfy the fundamental requirements for structural integrity. Beside what is referred to in this Code, application of more accurate methods for the analysis and design of structures may be accepted, following the consent and approval of the responsible Public Authority, if satisfaction of these fundamental requirements is directly shown. The above alternative methods of analysis must be based on well founded and recognized scientific principles and, simultaneously, they must achieve the same level of safety as the one aimed for by the present Code.</p> <p>Dealing with seismic vulnerability of buildings of “any age”, EAK2000 represents the seismic response and caused damages in the elements of a structure. It serves the performance of 3 compliance criteria: <u>no collapse / damage limitation / life protection.</u></p> <p>The scope is to eliminate the impact of the earth movement to the structure, depending on its design flexibility, in order to avoid (or if else, calculate) any residual deformations. The main principles refer to:</p> <ul style="list-style-type: none"> <li>• Seismic acceleration in different areas of the country. Due to this, Greece is divided in <u>3 Seismic Zones (Crete belongs to Zone II)</u> – <math>a=0.24g</math>. When nearby to active faults, acceleration is induced according to given Safety Factor. According to EAK 2000, particularly in Zone II (Crete) it is allowed to ignore the vertical component of seismic acceleration.</li> <li>• Building importance factor “<math>\Sigma</math>” (residence, school, hospital, etc.)</li> <li>• Subsurface conditions – stratigraphy - Terrain categories (A,B,<math>\Gamma</math>,X)</li> <li>• Behavioral factor q</li> </ul> <p>It also relates with neighbor constructions (in case they demand earth or wall retaining), liquefaction conditions, and has a leading discrimination between <u>deep and shallow foundations.</u></p> <p>When the earth data given, do not meet the adequate Safety Factor of the construction, further geotechnical investigation is carried out. The main purpose is to eliminate the seismic behavior uncertainties.</p> <p>Annex Z: Special regulations for interventions and additional works in existing buildings</p>

**Table 2.2: Seismic norms**



<b>SEISMIC NORMS</b>	
<b>Title</b>	<b>KANEPE 2017 (Intervention National Regulations)</b>
Subsection:	<ul style="list-style-type: none"> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2010: First application 2012: 1 <sup>st</sup> update 2017: 2 <sup>nd</sup> update
Does the document refer to the EU regulatory framework?	Only several references to EC8
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	Provided by “Organisation of Antiseismic Protection – OASP), approved by government (Ministry of Infrastructure)
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.oasp.gr/node/92">https://www.oasp.gr/node/92</a> <a href="https://www.oasp.gr/userfiles/KAN_ΕΠΕ_2η%20Αναθεώρηση_2017_Final.pdf">https://www.oasp.gr/userfiles/KAN_ΕΠΕ_2η%20Αναθεώρηση_2017_Final.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. EAK2000 is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<b>Description of the document/incentive (explain how does it affect seismic vulnerability)</b>  Dealing with the main bearing body of the existing structure, especially concerning vertical loads, this regulation indicates how retrofitting and intervention techniques should be applied. After having registered the caused damages and time wear impact in an adequate level of data integrity, a stability control is carried out.	

SEISMIC NORMS
<p>Defining the new safety factor needed and the materials we are allowed to use (mortar, fibers, resins), then we are proceeding with an elastic-plastic simulation analysis, in order to calculate the degree of intervention. The final purpose is to eliminate the seismic vulnerability of the whole structure, inducing the partial plasticity parameters.</p> <p>It refers to reinforced concrete elements and unreinforced masonry as well, dealing with the behavioral factor <math>q</math>, in 3 stages of damage: slight, heavy, collapse.</p> <p>Important: in lack of existing structure construction data, a set of “<u>in absentia</u>” values (from empirical knowledge) is used.</p>

**Table 2.3: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 6 - Design of masonry structures</b> Part 1: General rules for reinforced and unreinforced masonry structures <b>EN 1996-1-1</b>
Subsection:	<ul style="list-style-type: none"> <li>- design of new masonry structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Approved by CEI\J on 23 June 2005.
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.2.2006.pdf">https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.2.2006.pdf</a>

SEISMIC NORMS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (explain how does it affect seismic vulnerability)</p> <p>EC6 applies to the design of buildings and civil engineering works, or parts thereof, in unreinforced, reinforced, prestressed and confined masonry. EC 6 deals only with the requirements for resistance, serviceability and durability of structures. It does not cover the special requirements of seismic design (they are given in EC 8).</p> <p><b>Part I:</b> general rules for masonry in the basis of building design and civil engineering works in masonry (reinforced or not). Subjects dealing with: Basis of design, Materials, Durability, Structural analysis, Ultimate &amp; Serviceability Limit State.</p> <p>Exceptions: Part 1 does not cover: special types of structures (such as <b>arches or domes!!!</b>), masonry where gypsum, with or without cement, mortars are used, masonry where the units are not laid in a regular pattern of courses (rubble masonry), masonry reinforced with other materials than steel.</p>	

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 6 - EN 1996-2:</b> <b>Design of masonry structures</b> <b>Part 2: Design considerations, selection of materials and execution of masonry</b>
Subsection:	<ul style="list-style-type: none"> <li>- design of new masonry structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Approved by CEN on 24 November 2005.
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National





SEISMIC NORMS	
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.2.2006.pdf">https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.2.2006.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (explain how does it affect seismic vulnerability)</p> <p>EC6 applies to the design of buildings and civil engineering works, or parts thereof, in unreinforced, reinforced, prestressed and confined masonry. EC 6 deals only with the requirements for resistance, serviceability and durability of structures. It does not cover the special requirements of seismic design (they are given in EC 8).</p> <p><b>Part 2:</b> basic rules for the design and execution of masonry by enabling comply with the assumptions of the other parts of Eurocode 6. With the exception given in part 1, the scope of Part 2 deals with: the selection of masonry materials, factors affecting the performance and durability of masonry, resistance of buildings to moisture penetration, preparation and use of materials on site, masonry protection during execution, due to climatic factors (macro conditions of exposure). It also includes issues concerning infill, joint finishes, but chemical environments as well.</p> <p>Exceptions: Part 2 does not cover: health and safety of persons engaged in the design or execution of masonry, the environmental effects of masonry buildings, civil engineering works and structures on their surroundings.</p>	



<b>SEISMIC NORMS</b>	
<b>Title</b>	<b>EUROCODE 6 - EN 1996-3</b> <b>Design of masonry structures</b> <b>Part 3: Simplified calculation methods for unreinforced masonry structures</b>
<b>Subsection:</b>	<ul style="list-style-type: none"> <li>- design of new masonry structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	Approved by CEN on 24 November 2005.
<b>Does the document refer to the EU regulatory framework?</b>	Yes. In fact it defines the European framework itself.
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National
<b>Promoter</b>	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
<b>Target groups</b>	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
<b>Is the document publicly available?</b>	<a href="https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.3.2006.pdf">https://www.phd.eng.br/wp-content/uploads/2015/02/en.1996.3.2006.pdf</a>
<b>Does the document refer to pre-earthquake period, post-earthquake period or both of them?</b>	Both
<b>Does the document specifically deal with cultural heritage?</b>	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<b>Description of the document/incentive (how does it affect seismic vulnerability)</b>  EC6 applies to the design of buildings and civil engineering works, or parts thereof, in unreinforced, reinforced, prestressed and confined masonry. EC 6 deals only with the requirements for resistance, serviceability and durability of structures. It does not cover the special requirements of seismic design (they are given in EC 8).	

### SEISMIC NORMS

**Part 3** provides simplified calculation methods to facilitate the design of the following unreinforced masonry walls, subject to certain conditions of application:

- walls subjected to vertical loading and wind loading;
- walls subjected to concentrated loads;
- shear walls
- basement walls subjected to lateral earth pressure and vertical loads
- walls subjected to lateral loads but not subjected to vertical loads.

The rules given in EN 1996-3 are consistent with those given in EN 1996-1-1, but are more conservative in respect of the conditions and limitations of their use.

This part applies only to those masonry structures, or parts thereof, that are described in parts 1 and 2.

Exceptions: the simplified calculation methods given do not cover the design for accidental situations.

### SEISMIC NORMS

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 7 EN 1997-1 (2004) Geotechnical design Part 1: General rules</b>
Subsection:	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Approved by CEN on 23 April 2004.
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.ngm2016.com/uploads/2/1/7/9/21790806/eurocode_7_-_geotechnical_designen.1997.1.2004.pdf">https://www.ngm2016.com/uploads/2/1/7/9/21790806/eurocode_7_-_geotechnical_designen.1997.1.2004.pdf</a>

SEISMIC NORMS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (how does it affect seismic vulnerability)</p> <p>EC7 includes all the issues considering the constant ground-structure interaction. It is intended to establish the principles and requirements for safety and serviceability, describing the basis of design and verification and giving guidelines for related aspects of structural reliability. <u>It does not cover the special requirements of seismic design, but gives the initial data to work with.</u></p> <p><b>Part 1:</b> a general basis for the geotechnical design of buildings. It is dealing with geotechnical data, ground improvement and reinforcement, several types of foundation, anchorages, retaining structures, partial or overall stability. When defining the design situations and the <u>limit states</u> which can occur either in the ground or in the structure or by combined failure, we should consider:</p> <ul style="list-style-type: none"> <li>- site conditions with respect to overall stability and ground movements;</li> <li>- nature and size of the structure and its elements (design life),</li> <li>- ground conditions &amp; regional seismicity;</li> <li>- surroundings</li> <li>- influence of the environment (subsidence, seasonal changes of temperature and moisture).</li> </ul> <p><u>Design situations</u> should also take account of the following:</p> <ul style="list-style-type: none"> <li>- load cases;</li> <li>- the general suitability of the ground on which the structure is located</li> <li>- when in soil, stability and ground movements;</li> <li>- interbedded hard and soft strata;</li> <li>- faults, joints and fissures, possible instability of rock blocks, cavities, swallow holes</li> <li>- effects of scour, erosion, leading to changes in the geometry of the ground surface;</li> <li>- effects of chemical corrosion, weathering, freezing</li> <li>- variations in ground-water level (e.g. dewatering, flooding, failure of drainage systems)</li> <li>- earthquakes</li> <li>- sensitivity of the structure to deformations;</li> </ul> <p>Any <u>calculation model</u> provided (analytical, semi-empirical, or numerical), describing the behaviour of the ground should involve:</p> <ul style="list-style-type: none"> <li>- actions, such as imposed loads or imposed displacements</li> <li>- properties of soils, rocks and other materials;</li> <li>- geometrical data;</li> <li>- limiting values of deformations, crack widths, vibrations etc.</li> </ul>	

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 7 - Geotechnical design - Part 2: Ground investigation and testing</b>
Subsection:	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Approved by CEN on 12 June 2006.
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (Table 1.1	National
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2015/02/en.1997.2.2007-1.pdf">https://www.phd.eng.br/wp-content/uploads/2015/02/en.1997.2.2007-1.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<b>Description of the document/incentive (how does it affect seismic vulnerability)</b>  EC7 includes all the issues considering the constant ground-structure interaction. It is intended to establish the principles and requirements for safety and serviceability, describing the basis of design and verification	

### SEISMIC NORMS

and giving guidelines for related aspects of structural reliability. It does not cover the special requirements of seismic design, but gives the initial data to work with.

The knowledge of the ground conditions depends on the extent of the geotechnical investigations. As it is of major significance to fulfill the parameters' and factors' precision in the calculation models. That's why **Part 2** is used in conjunction with part 1 and provides rules related to:

- planning, reporting and monitoring of ground investigations
- general requirements on field and lab tests
- interpretation of test results and derivation of values of geotechnical parameters & coefficients.

Laboratory and field tests, in soil or rock mass behaviour, are selected on the basis of their importance in geotechnical practice, availability in commercial geotechnical laboratories and existence of an accepted testing procedure in Europe.

**IMPORTANT:** considering historical heritage, geotechnical investigations should only be carried out if feasible, due to disturbance and possible harm of the structure (boreholes, shafts, sampling etc.)

### SEISMIC NORMS

<b>Title</b>	<b>EUROCODE 8 - EN 1998-1 (2004)</b> <b>Design of structures for earthquake resistance</b>  <b>Part 1: General rules, seismic actions &amp; rules for buildings</b>
<b>Subsection:</b>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	Approved by CEN on 23 April 2004.
<b>Does the document refer to the EU regulatory framework?</b>	Yes. In fact it defines the European framework itself.
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National
<b>Promoter</b>	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN)

SEISMIC NORMS	
	Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2015/02/en.1998.1.2004.pdf">https://www.phd.eng.br/wp-content/uploads/2015/02/en.1998.1.2004.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (how does it affect seismic vulnerability)</p> <p>EC 8 applies to the design and construction of buildings and civil engineering works in seismic regions. Its purpose is to ensure (always in probabilistic terms) that in the event of an earthquake, human lives are protected, damage is limited and structures important for civil protection remain operational. It can be only used in addition to the provisions of the other relevant Eurocodes. It must be followed for the design of structures in seismic regions and it complements in this respect the other Eurocodes.</p> <p><b>Part 1</b></p> <p>applies to the design of buildings and civil engineering works in seismic regions,. It is subdivided in 10 Sections, some of which may be applicable in historical heritage interventions, combined with EC6 and partially EC7.</p> <p>Section 2: basic performance requirements and compliance criteria applicable to constructions in seismic regions. Analyses damage limitation states and specific design measures eliminating the collapse possibility,</p> <p>Section 3: rules for the representation of seismic actions and for their combination with other actions. Ground types (A,B,C,D,E,S) stratigraphy layers, taking into account the influence of surface or deep geology on the seismic action. Defining seismic acceleration, elastic response spectra (horizontal, vertical) for each ground type.</p> <p>Section 4: general design rules relevant specifically to buildings. Primary and secondary seismic members (beams, columns, etc.)</p>	



SEISMIC NORMS
<p>Sections 5 to 8: specific rules for various structural materials and elements, relevant to buildings (concrete, composite steel-concrete). Geometrical constraints referring to beams, columns, ductile walls, beam-column joints, etc.</p> <p>Section 9: Specific rules for masonry buildings (upper limit of behaviour factor in reinforced, unreinforced, confined masonry). A design criteria, safety verification, evaluated in accordance to EC6).</p>

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 8- EN 1998-3 (2005): Design of structures for earthquake resistance</b> <b>Part 3: seismic assessment &amp; retrofitting of buildings</b>
Subsection:	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Approved by CEN on 15 March 2005.
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (table 1.1).	National
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) Authority: The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2014/07/en.1998.3.2005.pdf">https://www.phd.eng.br/wp-content/uploads/2014/07/en.1998.3.2005.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both



SEISMIC NORMS	
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (how does it affect seismic vulnerability)</p> <p>EC 8 applies to the design and construction of buildings and civil engineering works in seismic regions. Its purpose is to ensure (always in probabilistic terms) that in the event of an earthquake, human lives are protected, damage is limited and structures important for civil protection remain operational. It can be only used in addition to the provisions of the other relevant Eurocodes. It must be followed for the design of structures in seismic regions and it complements in this respect the other Eurocodes.</p> <p><b>Part 3</b></p> <ul style="list-style-type: none"> <li>-provides evaluation criteria of the seismic performance of existing individual structures.</li> <li>-describes the approach in selecting necessary corrective measures</li> <li>-sets design criteria for the retrofitting measures</li> <li>-covers the seismic assessment and retrofitting of buildings made of commonly used materials: concrete, steel, and masonry.</li> </ul> <p>Although this Standard is applicable to all categories of buildings, the seismic assessment and retrofitting of monuments and historical buildings often requires different types of provisions and approaches, depending on the nature of the monuments.</p> <p>Since existing structures reflect the state of knowledge at the time of their construction, (ii) possibly contain hidden errors, and also have been submitted to previous earthquakes, structural evaluation and intervention are typically subjected to a different degree of uncertainty (level of knowledge) than the design of new structures.</p> <p>In this standard, retrofitting covers both the strengthening of undamaged structures and the repair of earthquake damaged structures.</p>	

SEISMIC NORMS	
<b>Title</b>	<b>EUROCODE 8</b> EN 1998-6 (2005) Design of structures for earthquake resistance <b>Part 6: Towers, masts and chimneys</b>
<b>Subsection:</b>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	Approved by CEN on 25 April 2005.

SEISMIC NORMS	
Does the document refer to the EU regulatory framework?	Yes. In fact it defines the European framework itself.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN) The European Union Per Regulation 305/2011, Directive 98/34/EC, Directive 2004/18/EC
Target groups	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
Is the document publicly available?	<a href="https://www.phd.eng.br/wp-content/uploads/2014/11/en.1998.6.2005.pdf">https://www.phd.eng.br/wp-content/uploads/2014/11/en.1998.6.2005.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	No. There is no such division. It is possibly applicable, considering a monument as an unreinforced masonry building (simulation).
<p>Description of the document/incentive (how does it affect seismic vulnerability)</p> <p>EC 8 applies to the design and construction of buildings and civil engineering works in seismic regions. Its purpose is to ensure (always in probabilistic terms) that in the event of an earthquake, human lives are protected, damage is limited and structures important for civil protection remain operational. It can be only used in addition to the provisions of the other relevant Eurocodes. It must be followed for the design of structures in seismic regions and it complements in this respect the other Eurocodes.</p> <p><b>Part 6</b></p> <p>Establishes requirements, criteria, and rules for the design of tall slender structures: towers, including bell-towers, intake towers, chimneys (including free-standing industrial chimneys) and lighthouses. Requirements are also given for non-structural elements, such as antennae, the liner material of chimneys and other equipment.</p>	

**Table 2.4: Seismic norms**

### SPECIAL REMARKS ON GREEK LEGISLATION

SEISMIC NORMS	
<b>Title</b>	Approval of Eurocode use and appliance, in combination with National annexes - <b>ΦΕΚ 1457 Β' – 5/6/2014</b>
<b>Subsection:</b>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	2014
<b>Does the document refer to the EU regulatory framework?</b>	Yes
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National
<b>Promoter</b>	Greek Government- Ministries of: <ul style="list-style-type: none"> <li>- Development</li> <li>- Transportation and Infrastructure</li> <li>- Environment, Energy and Climate Change</li> </ul>
<b>Target groups</b>	Design and Construction Public services, Cultural public services, municipalities and local-government designers, engineers, constructors, geotechnical engineers, archaeologists, educational and technical institutes. All scientists being involved with urban design in historical centers, dealing with renovation and retrofitting antiseismic approaches
<b>Is the document publicly available?</b>	<a href="http://www.teepelop.gr/wp-content/uploads/2014/06/FEK-B-1457-5.6.14.pdf">http://www.teepelop.gr/wp-content/uploads/2014/06/FEK-B-1457-5.6.14.pdf</a>
<b>Does the document refer to pre-earthquake period, post-earthquake period or both of them?</b>	Both
<b>Does the document specifically deal with cultural heritage?</b>	No
<b>Description of the document/incentive (how does it affect seismic vulnerability)</b> <p>Approval of the application and use of the translated into Greek language texts of Eurocodes, as Greek European Standards and the National Annexes. These standards can be applied as regulatory texts for design of new structures, as well as for valuation and redesign in existing structures. So, according to the Greek legislation (<b>Government Gazette 1457 Β'/5-6-2014</b>) the owner must select the regulatory texts of the design and the construction of the project, between the following two cases:</p>	

### SEISMIC NORMS

a) The pre-existing building regulations (ANNEX 1)

b) The Eurocodes in combination with their National Annexes (ANNEXES 2 & 3)

In any case it must be explicitly stated in the study the regulatory framework used.

**The design of the construction should follow only one of the abovementioned regulatory framework.**

This is predicted also within the Eurocode's text, where it is referred: "where guidance only is given, additional guidance based on local conditions and practice may be made available in non-contradictory complementary documents which may be referred to in the National Annex".

**The Greek Annex Tables which will be at disposal, whenever needed, are the following.**

- ANNEX1 :EUROCODES' TITLES AND CORRESPONDING GREEK LEGISLATIONS
- ANNEX 2 :EUROCODES' NATIONAL COMPLIANCES
- ANNEX 3 :PRE-EXISTING NATIONAL LEGISLATION (1994-2013)

#### Notes:

- Within the legislation, it is highlighted that Eurocode application is not obligatory (but our experience indicates it is highly recommended, where possible).
- There is a major discrimination between PRINCIPLES (strictly according to the legislation, with no alternatives) and APPLICATION RULES (recommendations, suggested alternative design methods, always in compliance with the regulations).

Microzonal Studies for individual cities and regions, clarify the vulnerability of each case, and the pro-active or anticipation measures to apply. Heraklion and Rethymnon cities (that are involved in the Adriseismic project) have such studies, available upon request

Combining the national legislation with EC-8, when it comes to soil categories A,B,C, etc., we can provide a table of correlation between the 2 classification systems.

As for the implementation of the national regulations EAK 2000, it has been twice updated (2003, 2010) and will be provided when needed. At this point it is essential to add the seismic zone map of Greece, where Crete belongs to the category II (gravity acceleration  $a=0,24g$ )

**Table 2.5: Seismic norms**

SEISMIC NORMS	
Title	Guidelines for assessment and structural interventions on masonry buildings
Subsection:	<ul style="list-style-type: none"> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>

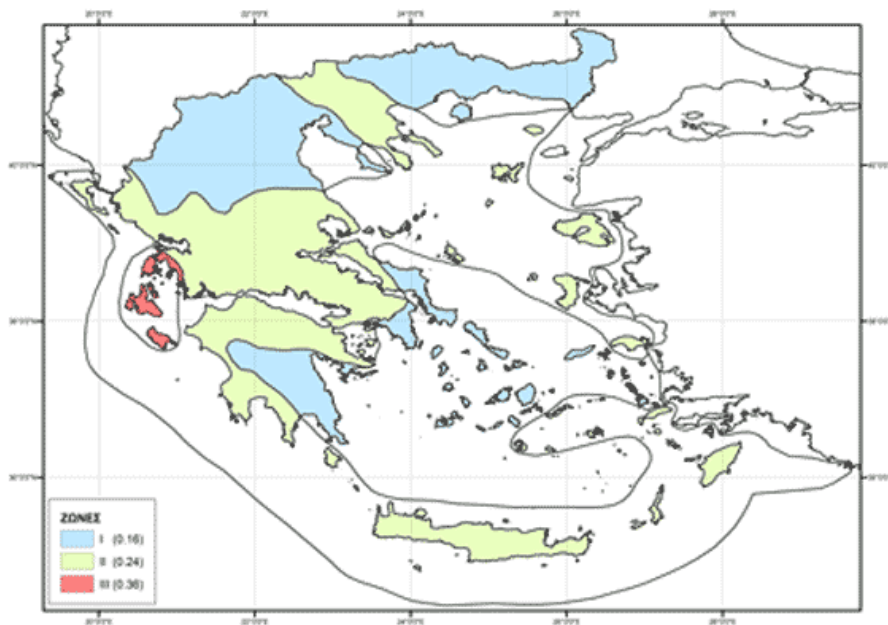


<b>SEISMIC NORMS</b>	
Timeframe	Draft, not yet approved but widely used
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country	National level
Promoter	Ministry of Environment
Target groups	Government, public authorities, local administration, private sector etc.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	No
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both, since it is a guideline for pre earthquake building and post-earthquake reconstruction of damaged buildings
Does the document specifically deal with cultural heritage?	yes
<p>The aim of the guidelines is the designation of criteria for assessing the bearing capacity of masonry buildings, as well as the reformation, renovation and structural reinforcement of the above mentioned structures. More specifically, the aim of the guidelines is to:</p> <ul style="list-style-type: none"> <li>- To offer criteria for assessment of seismic performance of masonry buildings</li> <li>- To describe the choice of suitable intervention measures</li> <li>- To set criteria for design of intervention measures</li> </ul> <p>The guidelines have not been approved yet by Law, yet they are widely used in the seismic reinforcement and intervention on masonry structures</p>	

## ADRISEISMIC



### ΝΕΟΣ ΧΑΡΤΗΣ ΣΕΙΣΜΙΚΗΣ ΕΠΙΚΙΝΔΥΝΟΤΗΤΑΣ



### 3 Building regulations

Please, add a short description of the situation in the field of **building regulations** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Greek and European building regulations referring to historical monuments, usually deal either with concrete elements or unreinforced masonry, encountering the behavioral factor  $q$ , in 3 stages of damage: slight, heavy, collapse.

In these old aged buildings, due to lack of existing structure construction data, a set of “in absentia” values (from empirical knowledge) is used.

After having registered the caused damages and time wear impact in an adequate level of data integrity, a stability control is carried out, setting a degree of intervention measures, after the definition of a new safety factor. The final purpose is to eliminate the seismic vulnerability of the whole structure, inducing the partial plasticity parameters.

Assumptions made, governing all the antiseismic regulations when it comes to deformation tolerance:

- Discrimination of structural elements in 2 main categories: main (foundation bearing vertical loads in a seismic episode) & secondary (masonry, beams, chimneys, etc.).
- Total coherence must be obtained, between the historical structure and the materials we are allowed to use (mortar, fibers, resins).

When located in a high vulnerability region, any interventions in the historical building must take into account the detailed data given in the micro seismic perspective, if available. If not, then some information for the footing may be derived from geotechnical investigation through boreholes or pits (always with a condition of minimum disturbance).

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	Decision No 3046/304/30.1/3.2.1989 ΦΕΚ 59//1989) « (Greek) Building Regulation »
Timeframe	1989 till today
Does the document refer to the EU regulatory framework?	no

BUILDING REGULATIONS	
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Environment
Target groups	Government, public authorities, local administration, private sector etc.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Gazette database (national printing House) <a href="http://www.et.gr">www.et.gr</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Mainly Pre- earthquake
Does the document specifically deal with cultural heritage?	<i>no</i>
<p>The aim of the regulation is the adjustment of the construction of the public and private buildings, so as to serve the aim of their construction, to perform well throughout their economic life circle. More specifically:</p> <ul style="list-style-type: none"> <li>- Improvement of the comfort, safety and health of the users</li> <li>- Improvement of the quality, safety, durability, esthetic quality and functionality of the buildings</li> <li>- Protection of the environment</li> <li>- Energysaving</li> <li>- Scientific research in the field of constructions</li> </ul>	

**Table 3.2: Building regulations**

BUILDING REGULATIONS	
<b>Title</b>	<b>Decision No 3328 ΦΕΚ 1561B/2-6-2016 Reinforced Concrete Regulation</b>
Timeframe	2016 till today
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country	National level
Promoter	Ministry of Environment
Target groups	Government, public authorities, local administration, private sector etc.



BUILDING REGULATIONS	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Gazettedatabase (national printing House) <a href="http://www.et.gr">www.et.gr</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both, since it is a guideline for pre earthquake building and post-earthquake reconstruction of damaged buildings
Does the document specifically deal with cultural heritage?	<i>no</i>
The aim of the regulation is the definition of the minimum requirements that RC should fulfil in order to perform according to the expected level in the various construction works	

**Table 3.3: Building regulations**

BUILDING REGULATIONS	
<b>Title</b>	<b>Decision No 92330 GGG 1416/B/17-07-2008 and GGG 2113/B/13-10-2008 Steel Regulation</b>
Timeframe	2008 till today
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country	National level
Promoter	Ministry of Public Infrastructure
Target groups	Government, public authorities, local administration, private sector etc.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Legislation database (national printing House) <a href="http://www.et.gr">www.et.gr</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both, since it is a guideline for pre earthquake building and post-earthquake reconstruction of damaged buildings
Does the document specifically deal with cultural heritage?	<i>no</i>

#### **BUILDING REGULATIONS**

The aim of the regulation is the definition of the minimum requirements that Steel should fulfil in order to perform according to the expected level in the various construction works

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

To the best of our Knowledge, the documents entered above depict the basic norms and forms concerning the building regulations in Greece. Norms of less importance may exist, but if so, the above entered norms prevail.

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**.  
Please, copy the table for each entered document.

Please, add a short description of the situation in the field of **urban planning regulation** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Spatial planning in Greece is set in four levels :

- General Spatial Planning
- Special Spatial Planning for certain areas of interest
- Regional Spatial Planning ( on Regional Level)
- Local Spatial Planning (on Municipality Level)

All the above comprise of many Laws and norms which generate a rather complicated situation as to the Law applied on a certain situation

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	Decision No 42284/13.10.2017 “ Revised Regional Spatial Framework”
Timeframe	2017 till today
Does the document refer to the EU regulatory framework?	yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	Region of Crete, Municipalities of Crete.
Promoter	Ministry of Environment, Energy and Climate Change
Target groups	Municipalities, local authorities, citizens
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Legislation database (national printing House) <a href="http://www.et.gr">www.et.gr</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	Indirectly, by posing special restrictions to land use in cultural heritage areas

URBAN PLANNING REGULATION
<p>The “<b>Revised Regional Spatial Framework</b>” approved in October 2017 sets the framework in which the spatial planning of Crete needs to be formed. It contains obligations of the authorities that are included in spatial planning, expansion of residential plans and cities/villages, as well as restrictions.</p> <p>It does not include any reference to seismic vulnerability, but through the restrictions set by it, it does not permit building in seismic vulnerable areas.</p>

**Table 4.2: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	General Urban Plans (N. 2508/1997, N.1337/1983)
Timeframe	1997 until today
Does the document refer to the EU regulatory framework?	Not particularly
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Environment, Energy & Climate Change
Target groups	Municipalities and local authorities in general. Also individual regional development or construction plans, within the boundaries of the Municipality.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.ypeka.gr/el-gr/Χωροταξία-και-Αστικό-Περιβάλλον/Πολοδομία/Νομοθεσία/">http://www.ypeka.gr/el-gr/Χωροταξία-και-Αστικό-Περιβάλλον/Πολοδομία/Νομοθεσία/</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both
Does the document specifically deal with cultural heritage?	Yes, indirectly, by inserting restrictions to areas that include cultural heritage
<p>Description of the document/incentive (explain how does it affect seismic vulnerability)</p> <p>These Plans aim to determine the guidelines of urban planning for sustainable residential development. In particular focused:</p> <ul style="list-style-type: none"> <li>- in the gradual promotion and organization of the space</li> <li>- in the residential organization of the settlements with the desired correlation of the residential parameters, the protection of the environment and the prevention of the anarchic construction, by</li> </ul>	

### URBAN PLANNING REGULATION

determining the development criteria that contribute to the largest possible economy of the residential extensions.

- to upgrade the environment and in particular the degraded areas by ensuring the necessary social equipment, technical infrastructure and control of uses in accordance with urban planning standards and eligibility criteria.
- in the protection, promotion and environmental upgrading of centers, cultural poles and traditional nuclei of settlements, green spaces and other elements of natural, archaeological, historical and cultural environment of cities, settlements and the suburban area.

They are general plans for the rational organization and development of a city or any settlement within the boundaries of a Municipality or other administrative region. The discrimination between ΓΠΣ and ΣΧΟΑΑΠ is the population threshold of 2000 citizens (when less, ΣΧΟΑΑΠ is applied). Both are dealing with spatial planning, taking into account the physical, residential, geomorphological characteristics of each urban unit examined. In fact, these plans establish the rules for:

- Under protection areas (intermediate or high level)
- Areas of limited construction
- Areas of existing housing, where industrial, productive, commercial or similar uses have to be restricted, due to environmental issues.

These plans are setting the legislations of urban development, based on the sustainability principles of every community, and the demands that arise from climate change.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

As explained in the introduction, not all the Laws concerning spatial planning were entered since many Laws exist, and the introduction of all of them is out of the scope of this section. Only the laws that govern local spatial planning have been entered.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of **seismic incentive frameworks** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Seismic incentive frameworks in Greece, meaning rules, laws or frameworks that facilitate pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes are frameworks that in Greece are not obligatory to apply. They mostly refer to public use buildings and their application is done on a “voluntary “ basis even in the public sector. In the private sector, the application of pre earthquake monitoring is also on a voluntary basis, taking also into consideration the cost of hiring a civil engineer to perform the monitoring

**Table 5.1: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>Framework for pre-earthquake monitoring of public utility buildings</b>
<u>Subsection</u>	Raising awareness (Building monitoring program)
Timeframe	1997 ( 2001) and ongoing
Does the document refer to the EU regulatory framework?	Yes, it hosts various EU regulations EC8
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	<b>Earthquake Planning and Protection Organization:</b>
Target groups	Buildings of public services
Is the document publicly available?	<a href="https://www.oasp.gr/node/74">https://www.oasp.gr/node/74</a>

SEISMIC INCENTIVE FRAMEWORKS	
Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both pre –earthquake period
Does the document specifically deal with cultural heritage?	It refers to all public buildings. Since many historic buildings are of public ownership, they are subject to the above framework
<p>The programme of pre earthquake monitoring of public buildings was given as a responsibility to EPPO in 1997 and actually commenced in 2001. Since it is not obligatory for a public service to perform it to its building, only 1% percent of public use buildings have been monitor for their expected earthquake performance. It comprises of 3 stages,</p> <p>1<sup>st</sup> stage: rapid macroscopic assessment of seismic bearing capacity of building with A.B.C (assessment structural and non-structural vulnerability)</p> <p>2<sup>nd</sup> stage: quantitative assessment of seismic capacity via simplified computations and non-destructive tests ( for buildings of priority A according to 1<sup>st</sup> stage</p> <p>3<sup>rd</sup> stage: comprehensive assessment of seismic capacity of buildings found seismically inadequate at 2<sup>nd</sup> stage</p> <p>The above procedure is performed by civil engineers of the agency that owns the building, by filling a standard form of structural capacity of building under monitoring</p> <p>EPPO has also issued standard forms of seismic monitoring of bridges and historic buildings. No standard procedure for seismic monitoring of the above categories exists</p>	

**Table 5.2: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>Pre-seismic monitoring of schools</b> LAW.3027/28.06.2002)
<u>Subsection</u>	Raising awareness (Building monitoring program)
Timeframe	2002 and ongoing
Does the document refer to the EU regulatory framework?	yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	Organization of School Buildings currently known as Build Infrastructure SA

SEISMIC INCENTIVE FRAMEWORKS	
Target groups	Greek school buildings
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://ktyp.gr/index.php?lang=el">https://ktyp.gr/index.php?lang=el</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	pre -and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes since some of the buildings are considered monuments or historic ones
<p>The aim of the programme is to monitor all the buildings of Greece that are used as school buildings, in order to assess their seismic performance.</p> <p>The programme is also applied after an earthquake, in order to check the amount of damage that school buildings have suffered.</p> <p>This program is applied in cooperation with the local municipalities since they also have responsibility on the maintenance of school buildings in the province.</p>	

**Table 5.3: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	Law 3852/2010 article section 25 94 paragraph 4 connected with Law 1894/1990 article 5 paragraph 12
Subsection	Raising awareness (Building monitoring program)
Timeframe	From 2011 and ongoing
Does the document refer to the EU regulatory framework?	yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	Municipalities
Target groups	School Buildings
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="#">National</a> Government Gazzete





SEISMIC INCENTIVE FRAMEWORKS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Both pre – and post-earthquake period
Does the document specifically deal with cultural heritage?	<i>Yes since some of the buildings are considered monuments or historic ones</i>
The aim of Law is to define the responsibility of municipalities in pre and post-earthquake monitoring and maintenance of school buildings. The responsibility of municipalities and Build Infrastructure SA is combined.	

Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?

Do you have Earthquake funds?

Greece has not induced official seismic certificates. This proposal exists on behalf of the Technical Chamber of Greece. Unofficial earthquake capacity ranking exists according to the date of construction of the building, and the Seismic Building Regulations that were valid at that time, i.e. buildings. No earthquake funds exist. The establishment of earthquake funds is also a proposal on behalf of the Technical Chamber ( similar to energy performance upgrading).

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

To the best of our knowledge, all the basic documents concerning seismic incentive frameworks have been entered in the above fields. All the above forms are valid at national level. Certain investigation reports exist for certain cities (i.e. focus geo-seismic investigations of Heraklion and Rethymnon) but are executed under no legal framework.

## 6 Post-earthquake planning

Please, fill in the table below with information regarding **post-earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

Please, add a short description of the situation in the field of **post-earthquake planning** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Post-earthquake planning in Greece comprises of many documents of various forms and priority. Most of them describe the whole range of earthquake planning, from the preparation stage, to the emergency response and to short term rehabilitation. The above mentioned legal documents refer to and all applicable to all stages of administration (from central government, ministries and other governmental organizations, to local administration). It is also usual that certain legal documents are issued to facilitate response and rehabilitation after certain disastrous earthquake incidents

**Table 6.1: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	General Civil Protection Plan code name "Xenokratis" ( Ministry Decision 1299/2003)
Subsection	planning
Timeframe	Apr 2003 till today
Does the document refer to the EU regulatory framework?	no

POST-EARTHQUAKE PLANNING	
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Interior
Target groups	Government, Ministries, Local Administration, , Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.e-nomothesia.gr/kat-politike-prostasia-psea-pallaike-amyna/ya-1299-2003.html">https://www.e-nomothesia.gr/kat-politike-prostasia-psea-pallaike-amyna/ya-1299-2003.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Indirectly, by referring to protection of property of the people, which can be a private building considered as cultural heritage
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The Minister Decision with the code name Xenokratis describes the national civil protection plan in case of natural disasters. Its first version was created by the Ministry of Interior, and it was later improved in 2006.</p> <p>The document presents the Hellenic Democracy plan of immediate response in case of natural disasters</p> <p>The contents of the document are divided into the following chapters:</p> <ul style="list-style-type: none"> <li>- general civil protection plan</li> <li>- definitions</li> <li>- basic planning rules</li> <li>- immediate response system</li> <li>- Partners involved in the implementation of the plan and their obligations</li> <li>- Coordination, communications , logistics of immediate response against natural disasters</li> </ul>	

**Table 6.2: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Law 4662/2020 “ National Disaster Management Mechanism, reformation of General Secretary of Civil Protection, CP voluntary system and reform of the Fire Unit”</b>
<u>Subsection</u>	Planning, preparation, response and short term rehabilitation

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POST-EARTHQUAKE PLANNING	
Timeframe	Jan2020 till today
Does the document refer to the EU regulatory framework?	Yes, indirectly, through reference to the EU CP mechanism
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	General Secretary of Civil Protection
Target groups	Government, Ministries, Local Administration, , Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.e-nomothesia.gr/kat-politike-prostasia-psea-pallaike-amyna/nomos-4662-2020-phek-27a-7-2-2020-1.html">https://www.e-nomothesia.gr/kat-politike-prostasia-psea-pallaike-amyna/nomos-4662-2020-phek-27a-7-2-2020-1.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Indirectly, by referring to protection of property of the people, which can be a private building considered as cultural heritage
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The General Secretary of Civil Protection issued the current Law in Jan 2020. With the above Law the National Disaster Management Mechanism has been funded, dealing with all the issues concerned with planning, preparation, immediate response and short term rehabilitation against natural and technological disasters ( including earthquakes)</p> <p>The contents of the document are divided into the following chapters:</p> <ul style="list-style-type: none"> <li>- General principles definitions and guidelines</li> <li>- forces and resources to implement the plan</li> <li>- observation, notification and alarm</li> <li>- activation of forces and assets,</li> <li>- protection and disaster relief tasks,</li> <li>- Civil Protection voluntary system</li> <li>- Partners involved in the implementation of the plan and their obligation ( from Central Government to Local Administration and Municipalities)</li> <li>- Coordination, communications , logistics of immediate response against natural disasters</li> <li>- planning, readiness, immediate response and short term rehabilitation</li> </ul>	

**Table 6.3: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>General Civil Protection Plan concerning earthquakes 1<sup>st</sup> edition, code name Engelados.</b>
<u>Subsection</u>	Planning, preparation, response and short term rehabilitation
Timeframe	Jan 2020 till today
Does the document refer to the EU regulatory framework?	Indirectly, by making reference to EU CP mechanism assistance in case of an earthquake
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	General Secretary of Civil Protection
Target groups	Government, Ministries, Local Administration, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.civilprotection.gr/el/geniko-shedio-antimetopisis-ektakton-anagkon-kai-amesisvraheias-diaheirisis-ton-synepeion-apo-tin">https://www.civilprotection.gr/el/geniko-shedio-antimetopisis-ektakton-anagkon-kai-amesisvraheias-diaheirisis-ton-synepeion-apo-tin</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes, subsection 12.9 (short reference)
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The General Secretary of Civil Protection has issued the above mentioned plan in order to give general as well as specific guidelines to all the authorities (from Central Administration to Local government and municipalities) and NGOs on how to plan their earthquake preparedness and response plan.</p> <p>The contents of the document are divided into the following chapters:</p> <ul style="list-style-type: none"> <li>- general civil protection plan</li> <li>- definitions</li> <li>- basic planning rules</li> <li>- immediate response system</li> <li>- planning, readiness, immediate response and short term rehabilitation</li> <li>- planning, readiness, immediate response and short term rehabilitation plan of each authority involved</li> <li>- Coordination, communications , logistics of immediate response against natural disasters</li> </ul>	

**Table 6.4: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Law 3013/2002 “Upgrade of Civil Protection</b>
<u>Subsection</u>	Planning, preparation, response and short term rehabilitation
Timeframe	May 2002 till today
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	General Secretary of Civil Protection
Target groups	Government, Ministries, Local Administration, , Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.kodiko.gr/nomologia/document_navigation/180051/nomos-3013-2002">https://www.kodiko.gr/nomologia/document_navigation/180051/nomos-3013-2002</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Indirectly, by referring to protection of property of the people, which can be a private building considered as cultural heritage
<p>This is the first Greek National Law concerning Civil Protection, issued by the Greek government</p> <p>It deal with basic issues of civil protection, definitions etc.</p> <p>The contents of the document are divided into the following chapters:</p> <ul style="list-style-type: none"> <li>- General principles definitions and guidelines</li> <li>- forces and resources to implement the plan</li> <li>- observation, notification and alarm</li> <li>- activation of forces and assets,</li> <li>- Partners involved in the implementation of the plan and their obligation ( from Central Government to Local Administration and Municipalities)</li> <li>- Coordination, communications , logistics of immediate response against natural disasters</li> <li>- planning, readiness, immediate response and short term rehabilitation</li> </ul>	

**Table 6.5: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Guidelines for planning and execution of civil protection drills (2<sup>nd</sup> edition)</b>
<u>Subsection</u>	Planning, preparation, response and short term rehabilitation
Timeframe	Jan 2020 till today
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	General Secretary of Civil Protection
Target groups	Government, Ministries, Local Administration, , Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.civilprotection.gr/sites/default/gscp_uploads/gscp_20200125.pdf">https://www.civilprotection.gr/sites/default/gscp_uploads/gscp_20200125.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) The General Secretary of Civil Protection issued the document as a general guideline for all the authorities involved in civil protection for the organization, planning and implementation of civil protection drills.	

**Table 6.6: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Law 1283 FEK114A/19-9-1982:Provisions for lending to citizens affected by earthquake incidents</b>
<u>Subsection</u>	Earthquake rehabilitation regarding the 1978 earthquake in Thessaloniki Northern Greece
Timeframe	1982

POST-EARTHQUAKE PLANNING	
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Public Works
Target groups	Government, Ministries, Local Administration, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Gazzete
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	<i>no</i>
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) The above mentioned law is an example of a legal document issued to financially assist rehabilitation after a certain earthquake incident with many disasters	

**Table 6.7: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Law 867 FEK24A/7-2-1978: Additional Provisions for lending to citizens affected by earthquake incidents in northern Greece</b>
<a href="#">Subsection</a>	Earthquake rehabilitation regarding the 1978 earthquake in Thessaloniki Northern Greece
Timeframe	1982
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Public Works



POST-EARTHQUAKE PLANNING	
Target groups	Government, Ministries, Local Administration, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Gazzete
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period
Does the document specifically deal with cultural heritage?	<i>no</i>
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)  The above mentioned law is an example of a legal document issued to financially assist rehabilitation after a certain earthquake incident with many disasters	

**Table 6.8: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	LAW 1190 ΦΕΚΑ'203/30.7.1981
<a href="#">Subsection</a>	Establishment of the Earthquake Rehabilitation Agency
Timeframe	1981
Does the document refer to the EU regulatory framework?	no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National Level
Promoter	Ministry of Public Works
Target groups	Government, Ministries, Local Administration, , Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Government Gazzete
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	post-earthquake period



**POST-EARTHQUAKE PLANNING**

Does the document specifically deal with cultural heritage?

*no*

Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)

The above mentioned law refers to the establishment of the Earthquake Rehabilitation Agency, which is currently known as Directorate of Anticipation of Consequences of Natural Disasters. This Agency has the role of immediate response and monitoring of buildings affected by earthquake and other natural disaster, and commandment of financial assistance procedures to the citizens whose buildings have been affected by natural disasters

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All the legal documents in Greece referring the post-earthquake period have been entered in the above fields. The above entered documents are applicable to all the Greek territory, except of the general plan "Engelados". Every Region has issued its special Engelados plan, containing all the special issues and characteristics of the certain Region. All the special Engeladus plans of each Region can be found in the web page of each region.

## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.

Unfortunately official information on the topic is not available in Greece. The insured buildings in Greece are mainly new constructed (after 1960) buildings that their purchase was made through a bank loan. These are quite a few in respect to the total number of buildings in Greece, some dated back to many decades. However, estimations that I have found from an Insurance company and only for residences (not total buildings) gives a 4.7 % for the insured buildings.

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?

In general the area of Greece, is divided according to the Greek Antiseismic Regulation and its revision in 2003 under which a New Seismic Hazard Map was produced, in three major seismic zones, according to the expected mean peak ground acceleration. However, the insurance is mainly dependent on the commercial value of the building and not on the seismic zone which actually place not direct role. The zone of course is considered under the construction study and the necessary measures per zone, increase the cost of the construction and thus its commercial value.

**Table 7.1: Insurance against earthquakes – optional insurance.**

<b>INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE 1</b>	
<b>Insurance company</b>	<b>Generally for Companies in Athens</b>
<b>CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE</b>	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	<p>In Greece, earthquake property insurance in general is not mandatory by law. However, mainly in cases where there is interest from the Bank, it is the contractual obligation of the borrower to insure the property at least for catastrophic risks such as fire and earthquake.</p> <p>The basic condition for the provision of earthquake coverage is that the building is constructed according to the national regulations.</p>
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	The buildings that cannot be insured against earthquakes are that made entirely of stone and the ones built before 1960 (the first Greek Seismic Design Code was applied in Greece in 1959). Finally, buildings that have been damaged by an earthquake in the past and have been classified as yellow and have not been repaired are not insured for an earthquake.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	The arbitrary buildings cannot be insured against earthquakes.
Multi-storey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>Yes, it is possible to take out optional earthquake insurance only for a single apartment.</p> <p>Insurance proposals include questions such as the address of the property to be insured, the year of construction of the building, whether it is an apartment or a house, the building materials (masonry, frame and roof) etc.</p> <p>All of the above information determines whether and what cost this coverage can be provided.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	It should be noted that earthquake coverage complements the basic fire coverage and therefore the consumer cannot be insured against the earthquake alone without being included in the insurance policy and fire coverage.

## ADRISEISMIC



Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	Usually in buildings older than 30 years a charge is applied to the earthquake insurance and in the buildings of the last decade a discount is applied.
Does the optional earthquake insurance premium depend on the property area?	The factors that affect the cost of the earthquake insurance are the area where the property is located and the age of the building.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Some companies have divided Greece into earthquake zones with different premiums per zone, according to the Greek Seismic Hazard Map (eg the Ionian Islands belong to a higher premium zone).
To what extent is the damage recovered?	<p>Usually, the coverage provided by insurance companies in case of a disastrous event has exemptions. For example if the insurance company has a deduction for the earthquake of 10%, means that the 90% of the damage will be covered.</p> <p>These exceptions may be general or they may related with specific coverage.</p>
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	Intensity of an earthquake means damages to the building and its content.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	The earthquake insurance cover all kinds of damage that may be caused by the earthquake. Fire is a common consequence, especially now that there are gas networks in major urban centers. Damage from a tidal wave due to an earthquake, tsunami, landslide and landslide is also covered.
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	<p>Insured values are always determined for the building, at current construction values, regardless of the year of construction. Commercial, objective or other values are not taken into account.</p> <p>The insured values for the content are calculated at the value of new ones for the most part.</p> <p>If someone has insured his property with less than the real value, in case of a disaster the compensation will be less than the expected.</p>
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	All insurance companies in their products provide earthquake coverage as an option.

	The full package of insurance (that includes earthquake coverage), for typical single-family house is about 600 euros per year.
Additional information regarding optional earthquake insurance	

**Table 7.2: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE 2	
Insurance company	Generally for Companies in Crete
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	Legally constructed under Greek Antiseismic law
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	Yes
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	No
Multi-storey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, top floor)	<ul style="list-style-type: none"> <li>- Every individual apartment can be insurance</li> <li>- There is no difference in case of common areas</li> <li>- No</li> </ul>
INSURANCE PACKAGES AND INSURANCE PREMIUMS	
What type of optional earthquake insurance packages does insurance offer?	Insurance against earthquakes, as well as landsliding and subsidence
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	Yes and should be constructed under Greek Antiseismic law
Does the optional earthquake insurance premium depend on the property area?	No

Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	No, now all country has the same insurance policy
To what extent is the damage recovered?	2% over the total value
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	No
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	It covers direct and indirect
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Yes
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>Apart from some special offers that companies can offer, the mean rate is 2.5/1000. For a house the basement is estimated at 500€/m<sup>2</sup>, while the rest floors 1000€/m<sup>2</sup>.</p> <p>Luxury constructions may reach up to 1500€/m<sup>2</sup></p> <p>The mean content value is estimated at 30% of the total building value to insurance</p>
Additional information regarding optional earthquake insurance	Do not exist

## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.3: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
Title	Law 867-1979
Timeframe	In Greece, earthquake property insurance in general is not mandatory by law.





<b>INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION</b>	
	The Law 867-1979 (ΦΕΚ Α24 - 7/2/1979) was the first one that referred to the State's financial support to the earthquake affected people of Northern part of Greece in order to repair their buildings or for the reconstruction of demolished buildings.
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	In case of a disaster event, Ministers Decisions determine the amount and procedures of financial support at local level
Promoter	Ministry of Infrastructure
Target groups	All
Is the document publicly available? Please provide references (e.g. web link...), if possible.	No
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Post – earthquake period
Does the document specifically deal with cultural heritage?	Not particularly

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

Yes, these are the only public documents we can find. Additionally there exist the individual Bank policies for insurance of buildings which are not public available.



## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Insert topic**

TOPIC	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN ITALY (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has some changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix).

Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1<sup>st</sup> stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion,



the chapter “***Seismic incentive frameworks***” is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds...). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic “***Post earthquake planning***”. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

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**Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
<b>Project partner</b>			<b>LP – Alma Mater Studiorum, University of Bologna – Department of Architecture (UNIBO-DA)</b>			
Country			Italy			
Country area			302 068 km <sup>2</sup>			
Population			59.641.488			
Administrative division of the country Please, indicate existing country levels (e.g: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			<ul style="list-style-type: none"> <li>- National level: Italy;</li> <li>- Regional level: 20 Regions;</li> <li>- Provincial level: 107 authorities divided into provinces, autonomous provinces, metropolitan areas;</li> <li>- Local level: 7.904 municipalities</li> </ul>			
<b>Recent earthquakes</b> Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.						
	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1	1638	Crotone (Calabria)  Lat: 39.048 Long:16.289	7.1	XI	30.000 victims, referring to the whole swarm	17 inhabited centers of the Tyrrhenian area were completely or almost completely destroyed. Catanzaro and Crotone were seriously damaged.
2	1693	Sicily  Lat: 37.140 Long:15.013	7.3	XI	54.000 victims	All the most important cities of south-eastern Sicily were upset. Catania was almost entirely destroyed, as was Acireale and all the small settlements placed on the eastern side of Etna. Huge

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BASIC INFORMATION						
						destructions occurred in all the urban areas of Val di Noto.
3	1703	Valnerina (Center of Italy)  Lat: 42.708 Long:13.071	6.9	XI	9.671 victims	This seismic period was one of the most serious disaster in Italian history both for geographical extentions and destruction force, due to the cumulative effects of numerous and violent shocks. Central Italy was affected from Camerino to Rome. Twenty cities were totally destroyed, another twenty reported collapses to a large part of building heritage and a hundred countries suffered serious damages.
4	1783	Messina e Reggio Calabria (Sicily and Calabria)  Lat: 38.297 Long:15.970	7	XI	50.000 victims (estimated)	The event was the strongest earthquake of a seismic swarm that lasted 3 years. The effects were catastrophic.
5	1857	Basilicata  Lat: 40.352 Long:15.842	7.1	XI	19.000 victims	Montemurro e Saponara were completely destroyed.
6	1908	Messina e Reggio Calabria (Sicily and Calabria)  Lat: 38.165 Long:15.687	7	XI	80.000 victims were estimated	This earthquake is one of the highest magnitude events in Italian seismic history and, for what concerns effects, represented an authentic catastrophe, both for very high number of deaths and because it destroyed two



BASIC INFORMATION						
7	1915	Marsica (Abruzzo)  Lat:41.982 Long:13.648	7	XI	30.519 victims	important cities such as Messina and Reggio Calabria. The city of Avezzano was completely destroyed.
8	1930	Irpinia (Campania, Apulia and Basilicata)  Lat: 41.064 Long:15.344	6.7	X	1400 victims	Aquilonia and Lacedonia cities were the most affected by the earthquake and 70% of buildings were destroyed.
9	1968	Belice (Sicily)  Lat: 37.760 Long:12.987	6.5	X	296 victims	At the date of earthquakes, the affected areas were not listed among the ones with high seismic risk according to national classification. 90% of rural buildings were destroyed.
10	1976	Friuli  Lat: 46.235 Long:13.057	6.5	IX-X	990 victims only in Italy	About 41 municipalities were completely destroyed
11	1980	Irpinia-Basilicata  Lat: 40.843 Long:15.283	6.7	X	About 3000 is the number of victims	The earthquake was very destroying in particular in Salerno and Potenza provinces.
12	1997	Marche-Umbria  Lat: 40.843 Long:15.283	5.7	VIII-IX	11 victims	The historical and artistic heritage lost or damaged was enormous. Franciscan complex of Assisi was the most famous damaged monument
13	2002	Molise  Lat: 41.685 Long:14.964	5.7	VIII-IX	30 victims	During earthquakes in San Giuliano di Puglia a school collapsed. 27 children and a teacher died.
14	2009	L'Aquila (Abruzzo)	6.3	IX-X;	309 victims	The maximum levels of damage can be found mainly in some locations located in

## ADRISEISMIC



BASIC INFORMATION						
		Lat: 42.309 Long: 13.510				proximity of the fault system near Paganica while very serious damages are also located near the epicenter of L'Aquila.
15	2012	Finale Emilia (Emilia-Romagna)  Lat: 44.895 Long: 11.263	6.1	I max=7-8 (EMS-98)*	27 victims	Monumental building was damaged in a very serious way, especially for what concerns churches, bell towers and towers. The damage was more widespread and more serious in historical centers.
16	2016	Norcia, Visso e Accumoli (Marche)  Lat: 42.628 Long: 13.290	6.5	I max=11 (EMS-98)*	About 300 victims	Two strong earthquakes happened, one in August and the other in October. Amatrice, Arquata del Tronto e Accumoli were barely destroyed during the second shock.

\* The European Macroseismic Scale was used in INGV report to define earthquakes effects.

According to INGV, more than 300 earthquakes with magnitude higher than 5 occurred in Italy from 1500 until nowadays. In the table above, only earthquakes that were very destroying and led to some changes in the Italian regulatory framework have been reported. The list includes only earthquakes occurred in those Italian regions involved in the Adrion Program.

Here below link to the exploited database is provide:

[https://emidius.mi.ingv.it/CPTI15-DBMI15/query\\_eq/](https://emidius.mi.ingv.it/CPTI15-DBMI15/query_eq/)

## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>seismic norms</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>In Italy many seismic norms are in force. At national level, NTC 2018 is the most important one together with its explanatory circular (Table 2.1 and Table 2.2 below). Practitioners who want to project seismic relevant works must respect the provisions included in these norms. With National Appendices to NTC2018 - to be published yet – also Eurocodes can be applied .</p> <p>When it comes specifically to cultural heritage, a nother important document is DPCM09/02/2011 because it focuses on the evaluation and reduction of seismic risk of cultural heritage, giving further explanation, methods and intervention techniques for these type of buildings.</p> <p>At a national level there is also a seismic classification of national territory (Table 2.8) which is divided into four zones. This classification is important for urban planning management and to control the development of the territory but it is not used anymore for design purposes (it has been replaced in NTC by other methods).</p> <p>At a regional level, seismic classification of municipalities has been received (Table 2.9) and also regional laws have been approved in order to manage the construction process, the qualifications required and the procedures to submit a project to public administrations (Table 2.4 and Table 2.5).</p> <p>Different considerations can be drafted for what concerns post-earthquakes norms (Table 2.6, Table 2.7). These are specific documents concerning the reconstruction phase in those regions affected by a specific catastrophic earthquakes and they manage the hole recovery process of a building establishing also methods to access to State funding; buildings damaged or destroyed by earthquakes can be repaired with economic incentives supplied by Italian State. At this moment, in Italy the recovery phase is still ongoing in Abruzzo (after L'Aquila earthquake occurred in 2009), in Emilia-Romagna (after Finale Emilia earthquake occurred in 2012) and in Marche (after seismic swarm occurred in 2016 in Norcia, Visso and Accumoli).</p>



**Table 2.1: Seismic norms**

<b>SEISMIC NORMS</b>	
<b>Title</b>	<b>NTC 2018 – Technical frameworks for construction</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2018 – current
Does the document refer to the EU regulatory framework?	Yes, it refers to Eurocodes.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of infrastructures and transports in concert with Ministry of Interior and Department Head of Civil Protection
Target groups	Practitioners in the construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. <a href="https://www.gazzettaufficiale.it/eli/gu/2018/02/20/42/so/8/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2018/02/20/42/so/8/sg/pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes  Chapter 8 deals with existing buildings. Therefore, a specific document has been enacted concerning only cultural heritage.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>NTC 2018 defines principles for designing phase, construction and test of buildings and infrastructures, in terms of performance required in mechanical strength, stability and durability.</p> <p>Norms provide the general safety criteria, specify the actions that must be used in the project and define the characteristics of materials. Generally, NTC2018 deals with aspects relating to structural safety of works.</p> <p>In order to obtain the same standard fixed in NTC, it is possible to refer also to other documents of proven validity such as Eurocodes.</p>	

## SEISMIC NORMS

NTC 2018 consists in 12 chapters that consider both the design of new structures and interventions on existing buildings; semi-probabilistic limit state design philosophy is the method on which the whole NTC is based. The chapters are listed below:

Chapter 1: Object

Chapter 2: Safety and expected performance

Chapter 3: Actions dealing with constructions

Chapter 4: Civil and industrial constructions

Chapter 5: Bridges

Chapter 6: Geotechnical design

Chapter 7: Design for seismic actions

Chapter 8: Existing constructions

Chapter 9: Static testing

Chapter 10: Drafting of structural executive projects and relation of calculations

Chapter 11: Materials and structural-use products

Chapter 12: Technical References

Chapter 7 is the one dedicated to seismic actions and presents methods and theories related to structural behaviour of new buildings and the structural model of them.

Chapter 8 is the one that deals with existing buildings and its principles can be applied also when the interventions are related to cultural heritage even if a specific document concerning only this one has been enacted (DPCM 09/02/2011). Chapter 8 states that interventions on existing buildings must start with the knowledge of materials properties, loads, soil characteristics and geometry of construction: two factors are applied in the safety verifications in order to consider how much in-depth the knowledge is. Interventions on existing buildings are divided in three categories:

- Local interventions: involve only isolated elements and they do not change the buildings global behaviour;
- Improvement interventions: they involve the global construction and aim at increase the existing structural safety;
- Adjustment interventions: the project involve the entire construction and aims at reaching high safety level as described in detail in 8.4.3 paragraph.

For what concerns cultural heritage, it is possible to limit the structural project to improvement interventions only. Reaching adjustment levels requires indeed very invasive interventions that may not match properly with cultural heritage properties.

**Table 2.2: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>CIRCOLARE ALLE NTC 2018 – Explanatory Circular for NTC 2018 correct application</b>

SEISMIC NORMS	
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2019 - current
Does the document refer to the EU regulatory framework?	Yes, it refers to Eurocodes.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Infrastructures and Transports
Target groups	Practitioners in the construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document <a href="https://www.gazzettaufficiale.it/eli/gu/2019/02/11/35/so/5/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2019/02/11/35/so/5/sg/pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes Chapter 8 deals with existing buildings.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>This document gives further explanations and methods in order to apply properly NTC 2018. Explanatory circular is divided in the same chapters and paragraphs of technical frameworks for construction and more information about formulas to apply, methods and materials properties are provided.</p>	

**Table 2.3: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>DPCM (Directive of President of Council Minister) 9/02/2011 - Evaluation and reduction of seismic risk of cultural heritage in according to NTC 2008</b>

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SEISMIC NORMS	
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- assessment of existing structures (only cultural heritage)</li> <li>- retrofitting structures (only cultural heritage)</li> </ul>
Timeframe	2011 - current
Does the document refer to the EU regulatory framework?	Yes, it refers specifically to NTC2008 which in turn refers to Eurocodes.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of the Council of Minister
Target groups	Practitioners in the construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. <a href="https://www.gazzettaufficiale.it/eli/gu/2011/02/26/47/so/54/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2011/02/26/47/so/54/sg/pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes  The documents has been enacted with the aim to provide indications for the assessment and seismic risk reduction of cultural heritage.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>This directive provides indications for the assessment and seismic risk reduction of cultural heritage. It refers to the technical frameworks for construction NTC2008 which was the legislation in force before NTC2018.</p> <p>This directive is drafted with the intention of specifying the same ways of evaluation and interventions provided for existing buildings in NTC adjusting them for cultural heritage, according to its features and peculiarities. These ways concern the definition of knowledge criteria, the safety assessment against seismic actions and the design of any interventions. All these themes are conceptually similar for both unprotected buildings and cultural heritage, but they are suitably adapted to peculiarities of the latter with this DPCM.</p> <p>The document refers only to masonry constructions and suggests methods that have not to be considered as binding by practitioners working in this sector.</p>	

### SEISMIC NORMS

The different chapters of this document provide indications to define the seismic action and the capacity of the structure, through a correct knowledge and modelling of the artefact.

Chapter 2 indicates the safety requirements to be considered for the architectural heritage with historical and artistic value; a new limit state of damage (Artistic State Limit - SLA) has been defined with the purpose of preserving artistic peculiarities of constructions.

Chapter 3 provides indications for a proper definition of the seismic action; a comparison between the seismic action that brings the construction to the SLV (Ultimate Limit State) with the one that is expected on the site with a predetermined probability of occurrence is required.

Chapter 4 deals with the knowledge of the artefacts which has to be carried out according to the procedure explained in the Circular for NTC 2008.

Chapter 5 shows the various possibilities for modelling the structural behaviour of a historic masonry construction. In particular, three different levels of increasing completeness are identified for the evaluation of seismic safety. They are applicable respectively:

- for assessments of seismic safety to be carried out on a territorial scale;
- for assessments to be adopted in presence of local interventions on limited areas of the building;
- for intervention project affecting the overall structural functioning or when an accurate safety assessment is required.

At the end, chapter 6 describes the criteria to be followed for the seismic improvement or the vulnerability reduction; also possible intervention techniques are explained and examined in relation to their effectiveness, their impact on buildings (non-invasiveness, reversibility and durability) and costs.

**Table 2.4: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>L.R. (Regional Law) n.19/2008 and subsequent modifications and additions - Norms for the reduction of seismic risk</b>
<b>Subsection:</b> <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul> <p>(procedural aspects concerning the required documents in order to submit the projects to the competent authorities)</p>
<b>Timeframe</b>	2008 – current
<b>Does the document refer to the EU regulatory framework?</b>	No, the document implements national framework into the specific regional contest.

SEISMIC NORMS	
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Region of Emilia Romagna
Target groups	Practitioners in the construction sector working in Emilia-Romagna region
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. <a href="https://demetra.regione.emilia-romagna.it/al/articolo?urn=er:assemblealegislativa:legge:2008;19&amp;dl_t=text/xml&amp;dl_a=y&amp;dl_id=10&amp;pr=idx,0;artic,1;articparziale,0&amp;ev=1">https://demetra.regione.emilia-romagna.it/al/articolo?urn=er:assemblealegislativa:legge:2008;19&amp;dl_t=text/xml&amp;dl_a=y&amp;dl_id=10&amp;pr=idx,0;artic,1;articparziale,0&amp;ev=1</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes  For what concerns cultural heritage art. 16 specifies that provisions included in D.lgs n.42/2004 <sup>1</sup> remain valid. In particular this latter is mandatory for the execution of any anti-seismic interventions in monumental buildings or in any case if the work concerns any archaeological, historical or artistic buildings whether public or private.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>This law drafts norms about seismic competence, contribution of territorial and urban planning tools to the reduction of seismic risk, methods to supervise the execution of works and buildings as well as the detection of violations and the application of sanctions.</p> <p>The main objective of the law is to pursue a higher protection of public safety through the re-organisation of both seismic functions and competent technical structures among regions, provinces and municipalities.</p> <p>Art.3 establishes that municipalities must provide to seismic functions with the support of regional technical structures. Emilia-Romagna region performs the function of guiding and coordinating the exercise of seismic procedures, ensuring adequate support to competent technical structures; it also promotes surveys for the assessment of seismic risk aiming at defining seismic prevention programs.</p> <p>Urban planning tools include a contribution to the reduction of seismic risk through hazard analysis and prevention and mitigation criteria in compliance with the seismic classification attributed to municipalities.</p>	

<sup>1</sup> Legislation Decree n. 42/2004 is the Italian code of cultural and landscape heritage and it is called "Codice Urbani"; it defines what it is intended for cultural heritage and landscape. Art. 21 establishes that the execution of any kind of works on cultural heritage is subject to Superintendent authorization.

### SEISMIC NORMS

At a provincial level, PTCP - Provincial Territorial Coordination Plan – establishes criteria for reduction of seismic risk based on territory knowledge and its vulnerability and with references to urban settlements, production activities and infrastructure networks. The tool identifies the high-risk areas and provides guidelines concerning admissible uses.

Municipalities transpose PTCP in their urban plans and specify more thoroughly the local seismic hazard of each part of their territory carrying out the seismic micro-zoning of urban areas. In their urban planning tools municipalities define also requirements for the reduction of seismic risk and set critical thresholds, limits and conditions for the transformation of the territory.

For what concerns procedures and documents that practitioners have to submit to the competent authorities in order to finalise the project, these norms establish in which cases seismic authorisation or seismic deposit are required.

Generally, seismic authorisation is required, except for municipalities classified as low seismicity level. Therefore, some interventions need the seismic authorisation in any case, even if they are expected in municipalities with low seismicity (e.g. new elevations, interventions related to building with strategic interest). Therefore, it is to highlight that the necessity of authorisation or deposit is a case-by-case evaluation. Works cannot start until the seismic authorization or seismic deposit has been issued.

**Table 2.5: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>D.G.R. (Decree of Regional Council) n. 2272/2016</b> <b>Document identifying the interventions of no relevance for the public safety for seismic purposes and in-progress variations, concerning structural parts, which are not of a substantial nature</b>
<b>Subsection:</b> <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	2016 - current
<b>Does the document refer to the EU regulatory framework?</b>	No
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	Regional level
<b>Promoter</b>	Region of Emilia Romagna



SEISMIC NORMS	
Target groups	Practitioners in the construction sector working in Emilia-Romagna region
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. <a href="https://bur.regione.emilia-romagna.it/dettaglio-inserzione?i=d1ac761a60af49bdb4b2f76c8aa9560c">https://bur.regione.emilia-romagna.it/dettaglio-inserzione?i=d1ac761a60af49bdb4b2f76c8aa9560c</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>The document identifies which public safety's interventions can be considered not relevant for seismic purposes and which in-progress project's variations are not of a substantial nature even if concerning structural parts. In both cases, practitioners are free from submitting seismic authorisation or seismic deposit as established in L.R. 19/2008 (see table 2.4) but they must draft other reports specified in the D.G.R. 2272/2016.</p> <p>There are two annexes at the document; in the first one the lists of those public safety's interventions are considered not relevant for seismic purposes is provide and in the second one there is an explanation about what an in-progress variation not of a substantial nature is, according to Italian current regulatory framework.</p>	

**Table 2.6: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>L.R. (Regional Law) n. 16/2012</b> <b>Norms for reconstruction in areas affected by the earthquake of 20 and 29 May 2012.</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	2012 – current



## ADRISEISMIC



SEISMIC NORMS	
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Region of Emilia Romagna
Target groups	Practitioners working with post-earthquake reconstruction in Emilia-Romagna.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.gazzettaufficiale.it/eli/gu/2013/01/26/4/s3/pdf">https://www.gazzettaufficiale.it/eli/gu/2013/01/26/4/s3/pdf</a> pag.26
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The provisions of this law aim at regulating interventions for reconstruction in the municipalities belonging to provinces of Bologna, Modena, Ferrara, Reggio Emilia whose territories were affected by the seismic events of 20 and 29 May 2012. This law and many Ordinances of the President of the Region define the regulatory framework for practitioners who want to address post-earthquake reconstruction in Emilia-Romagna.</p> <p>According to the law, it is possible to intervene on damaged buildings according to NTC2018 principles; after the first stage in which it is necessary to define the state of damage of buildings with expeditious methods (Feasibility and Damage in seismic emergency form is used in this case, shortened AeDES), it is possible to establish which interventions are required. For those buildings slightly damaged it is possible to repair them and reduce their vulnerability; in the other cases seismic improvement or seismic adjustment is required in order to increase seismic safety level and improve urban quality.</p> <p>Also the improvement of buildings energy efficiency is promoted by the law, with some volumetric and dimensional incentives.</p>	

### SEISMIC NORMS

Reconstruction also pursues the objective of recovery, protection and enhancement of cultural heritage affected by earthquake, in its cultural and landscape components. For what concerns cultural heritage, no interventions can start without the authorisation expected by D.lgs 42/2004 <sup>2</sup>.

LR 16/2012 deals also with historic centers where repairs, restoration with seismic improvement and reconstruction must take place to protect typological characteristics, construction materials and any another feature that connotes historical areas, in compliance with urban planning regulations.

**Table 2.7: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>D.Lgs (Legislative Decree) n.189/2016 and subsequent modifications and additions</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2016 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of Republic
Target groups	Practitioners involved in post-earthquake reconstruction in Marche, Umbria, Abruzzo e Lazio.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. Coordinated version: <a href="https://www.gazzettaufficiale.it/eli/gu/2016/12/17/294/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2016/12/17/294/sg/pdf</a> Pag.37
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Post-earthquake period

<sup>2</sup> Legislation Decree n. 42/2004 is the Italian code of cultural and landscape heritage and it is called “Codice Urbani”; it defines what it is intended for cultural heritage and landscape. In art. 21 is established that the execution of any kind of works on cultural heritage is subject to Superintendent authorization.

SEISMIC NORMS	
Does the document specifically deal with cultural heritage?	Yes
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The provisions of this law aim at regulating interventions for reconstruction in Abruzzo, Lazio, Marche and Umbria Regions whose territories were affected by the seismic events starting from 24th August 2016. This law identifies the figure of extraordinary commissioner as the chief of reconstruction in these regions and he enacts many ordinances which are the regulatory framework for practitioners who want to address post-earthquake reconstruction in the center of Italy.</p> <p>The extraordinary commissioner provides to identify the contents of the reconstruction process and restoration of the damaged heritage distinguishing in:</p> <ul style="list-style-type: none"> <li>• local interventions for the strengthening of residential and production buildings slightly damaged by earthquake;</li> <li>• restoration interventions with the purpose of seismic improvement or adjustment for those buildings that were destroyed or heavy damaged;</li> <li>• reconstruction interventions for historic areas or historic centers that were destroyed or heavy damaged.</li> </ul> <p>The commissioner also has the responsibility of introducing criteria according to which structural interventions in historic areas or concerning cultural heritage are compatible with the protection of architectural, historical and environmental aspects, also through specific direct indications to ensure eco-sustainable architecture and energy efficiency.</p> <p>An emergency economic fund is established in order to face the emergency in center of Italy.</p>	

**Table 2.8: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>OPCM</b> (Ordinance of the President of the Council of Ministers) <b>n. 3274/2003 and subsequent modifications and additions:</b> OPCM 3519/06- <b>general criteria for seismic classification of national territory</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	n.a. (See description below)
<b>Timeframe</b>	2003– current

SEISMIC NORMS	
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of the Council of Ministers
Target groups	Practitioners in construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>Yes, it is a public document.</p> <p><a href="https://www.gazzettaufficiale.it/eli/gu/2003/05/08/105/so/72/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2003/05/08/105/so/72/sg/pdf</a></p> <p><a href="http://www.protezionecivile.gov.it/documents/20182/0/opcm_3519_28_aprile_2006.pdf/04e8342c-556c-4126-8f2f-26f4ea48f2ec">http://www.protezionecivile.gov.it/documents/20182/0/opcm_3519_28_aprile_2006.pdf/04e8342c-556c-4126-8f2f-26f4ea48f2ec</a></p>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The ordinance divided Italy in four seismic zones: the first one is the most dangerous in terms of probability that a strong earthquake can occur. The ordinance establishes also that regions have the responsibility of identification and updating the list of seismic areas.</p> <p>In annex II, a first formulation of technical framework for construction was enacted, but they were never applied because they were replaced by the NTC 2008.</p> <p>It has to be highlighted that seismic zoning is not used anymore in order to define the seismic action; NTC2008, in fact, changed the role that seismic classification had for design purposes: previously for each area a peak acceleration value was provided and, therefore, also the elastic response spectrum to be used for the calculation of seismic actions; when NTC2008 became effective, for each construction, reference must be made to an "own" acceleration identified on the basis of the geographical coordinates of the project area and according to nominal life of the work.</p> <p>The seismic classification is still useful and important for urban planning management and for the control of the territory by responsible institutions (e.g. Regions...)</p>	

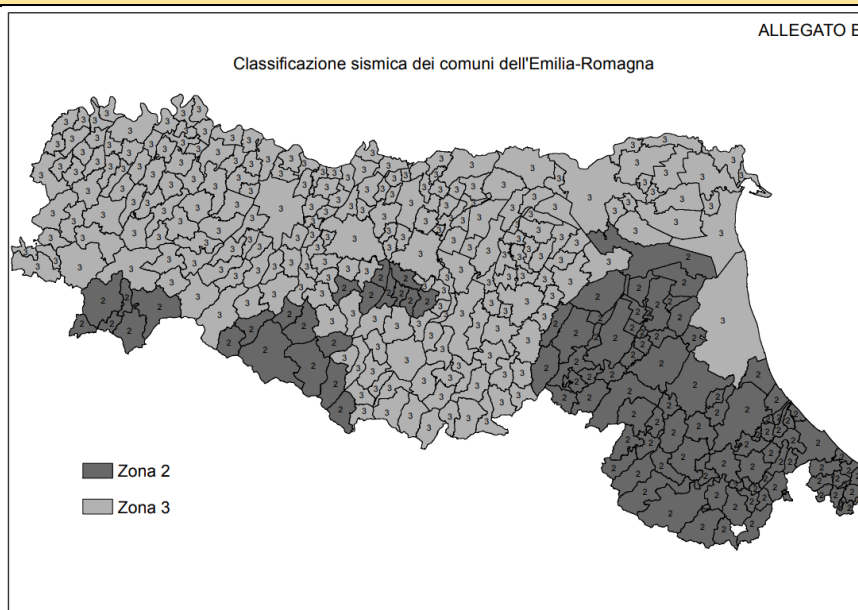
**Table 2.9: Seismic norms**



SEISMIC NORMS	
<b>Title</b>	<b>DGR (Decree of Regional Council) n. 1164/2018</b>
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	n.a. (see description below)
Timeframe	2018
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Region of Emilia Romagna
Target groups	Practitioners in construction sector working in Emilia-Romagna
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is a public document. <a href="https://bur.regione.emilia-romagna.it/dettaglio-inserzione?i=4aa04946b4fc4dcd8cc4ef742dea83ad">https://bur.regione.emilia-romagna.it/dettaglio-inserzione?i=4aa04946b4fc4dcd8cc4ef742dea83ad</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>The decree implements national framework - OPCM n. 3274/2003 explained in table 2.9 - into the specific regional contest. In particular, the seismic classification of municipalities in Emilia-Romagna is provided according to their belonging to a determined seismic zone.</p> <p>The annexes show the list of municipalities with the seismic zone they belong to and a map of seismic zone classification. An image of this latter is provided below.</p>	



## SEISMIC NORMS



Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All national most relevant documents have been inserted in the section.

When it comes to the regional level, only Emilia-Romagna region have been considered since it is where the Pilot case (WPT2) is located.

A mention goes to post-earthquake norms: they are specifically related to the country where the earthquake occurred and so every region enacts its own regulations. In the present analysis norms enacted in the past ten years have been considered (for this reason the regulatory framework concerning the earthquake occurred in Abruzzo in 2009 is not reported in the tables).

### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>building regulations</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>DPR 380/2001 is the reference document for practitioners in the construction sector and it is valid in the whole national territory.</p> <p>Therefore, in Italy each municipality has its own specific urban planning tools and for this reason there are as many building regulations as the number of municipalities. These building regulations are all in accordance with DPR 380/2001 so their provisions comply with it.</p>

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	RUE – urban planning regulations
Timeframe	2009 – December 2020
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Municipal level
Promoter	Municipality of Bologna
Target groups	Practitioners in construction sector working in Bologna municipality.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/eb1a4707-8348-4a3d-a24a-1ea3cf078158/RUE_variante2019_32bis.pdf">http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/eb1a4707-8348-4a3d-a24a-1ea3cf078158/RUE_variante2019_32bis.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes, but not specifically for earthquakes

BUILDING REGULATIONS	
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>RUE is a document with the purpose of disciplining urban transformation in Bologna municipality from a regulative point of view. It is still ongoing but LR n. 24/2017 replaces it with another document which is still not approved by regional council.</p> <p>RUE contains rules for construction, physical and functional transformation and conservation of buildings, including the hygiene standard to guarantee.</p> <p>It states which interventions are possible in the different urban system identified for Bologna area by urban planning tools, also for what concerns cultural heritage.</p> <p>For what concerns RUE seismic purposes, in art. 111 it refers to L.R.19/2008 (see Table 2.4) for procedural obligation in seismic-area constructions.</p>	

**Table 3.2: Building regulations**

BUILDING REGULATIONS	
Title	RE – New Building code
Timeframe	December 2020 – current. In the framework of the new regional law of Emilia-Romagna n. 24/2017 (see Table 4.1) together with the PUG, a new urban planning regulation has been enacted.
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Municipal level
Promoter	Municipality of Bologna
Target groups	Practitioners in construction sector working in Bologna municipality.
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/4dbbe351-b42b-429f-b052-288455390fa5/RegolamentoEdilizio.pdf">http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/4dbbe351-b42b-429f-b052-288455390fa5/RegolamentoEdilizio.pdf</a> <a href="http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/eb1a4707-8348-4a3d-a24a-1ea3cf078158/RUE_variante2019_32bis.pdf">http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/eb1a4707-8348-4a3d-a24a-1ea3cf078158/RUE_variante2019_32bis.pdf</a>



BUILDING REGULATIONS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes, but not specifically for earthquakes
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>RE is a document with the purpose of disciplining urban transformation in Bologna municipality from a regulative point of view. It has been approved within the framework of LR n. 24/2017 and will replace the previous RUE (see table 3.1).</p> <p>RE contains rules for construction, physical and functional transformation and conservation of buildings, including the hygiene standard to guarantee.</p> <p>It states which interventions are possible in the different urban system identified for Bologna area by urban planning tools, also for what concerns cultural heritage.</p> <p>For what concerns RUE seismic purposes, Part I art. c 1.9 it refers to L.R.19/2008 (see Table 2.4) for procedural obligation in seismic-area constructions.</p> <p>In the Second Part of the document Title III recalls the objectives for a correct design of interventions, listing them according to the performance required. When it comes to the mechanical resistance and building stability, the section explains which performance need to be achieved to access to the volumetric incentives foreseen by PUG in order to foster the improvement of the edifices behaviour in case of earthquakes occur.</p>	

**Table 3.2: Building regulations**

BUILDING REGULATIONS	
Title	<b>D.P.R. (Decree of President of Republic) n. 380/2001 and subsequent modifications and additions</b>
Timeframe	2002 – current.
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of Republic
Target groups	Practitioners in construction sector.

## ADRISEISMIC



BUILDING REGULATIONS	
<p>Is the document publicly available?</p> <p>Please provide references (e.g. web link...), if possible.</p>	<p>Yes, it is.</p> <p>Coordinated unofficial version:  <a href="https://www.bosettiegatti.eu/info/norme/statali/2001_0380.htm">https://www.bosettiegatti.eu/info/norme/statali/2001_0380.htm</a></p> <p>First version published by government in 2001:  <a href="https://www.gazzettaufficiale.it/eli/gu/2001/11/15/266/so/246/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2001/11/15/266/so/246/sg/pdf</a>            pag.11</p>
<p>Does the document refer to pre-earthquake period, post-earthquake period or both of them?</p>	<p>Pre and post-earthquake period</p>
<p>Does the document specifically deal with cultural heritage?</p>	<p>Yes</p> <p>Art.1 comma 2 explains that for what concerns cultural heritage art. 16 specifies that provisions included in D.lgs n.42/2004<sup>3</sup> remain valid.</p>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>DPR 380/2001 is the Consolidated Construction Law in Italy and it norms the fundamental and general principles of building and the construction sector. It is divided into two main parts: the first one refers to building activity and the second one deals with technical standard for buildings.</p> <p>When it comes to the building activity, in art.3 the document gives definitions of which interventions on buildings are possible that is: ordinary maintenance, extraordinary maintenance, restoration and conservative rehabilitation, building renovation and new construction works.</p> <p>In addition, there is the institution of “SUE” which is the medium for practitioners to get in touch with public administrations, in relation to all administrative processes about building intervention. The office provides answers to practitioners in place of all public administrations however involved.</p> <p>DPR 380/2001 explains also the building authorisation required to submit any type of project to public administrations. These authorisations are mandatory.</p> <p>When it comes to technical standards the document explains which kind of constructions are possible in Italy (e.g. masonry buildings, reinforced concrete frame buildings, steel frame constructions) and it refers to NTC. Some articles concern also the definition of responsible subjects in the different construction phases, the documents required in the building site, the testing phase and the supervisory actions.</p>	

<sup>3</sup> Legislation Decree n. 42/2004 is the Italian code of cultural and landscape heritage and it is called “Codice Urbani”; it defines what it is intended for cultural heritage and landscape. Art. 21 establishes that the execution of any kind of works on cultural heritage is subject to Superintendent authorization.



Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We entered a national document that is called “Testo Unico dell’edilizia” (Consolidated Act Building) because it can be considered as a national-scale building regulation. Urban planning is one of the Regions’ competences and, in particular, **urban planning tools are enacted at a local level** which means that each Municipality has its own instruments.

In Italy there are too many Municipalities and it is not possible to analyse all of them so in the present survey only the Municipality of Bologna is considered, which is where the Pilot case is located.

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>urban planning regulation</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>Art. 117 of the Italian Constitution states that urban planning is a subject where Regions are competent together with Italian State. From the 70's the State level has delegated planning law and regulations to the Regions.</p> <p>In Emilia-Romagna LR 24/2017 is the regional law that establishes the spatial planning discipline in accordance with the fundamental principles of State legislation and the European legal system.</p> <p>In art.2 the regional law states that the territory government is exercised by municipalities and their unions, by the Metropolitan City of Bologna, by large-area subjects and by the Region.</p> <p>The local level (i.e. municipalities or their union) is responsible for the design of the urban planning tools identified in accordance with the prescription of the regional law.</p>

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	L.R. (Regional Law) n. 24/2017
Timeframe	2017 – current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Region of Emilia Romagna
Target groups	Practitioners in construction sector working in Emilia-Romagna
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes <a href="http://demetra.regione.emilia-romagna.it/al/articolo?um=er:assemblealegislat">http://demetra.regione.emilia-romagna.it/al/articolo?um=er:assemblealegislat</a>



URBAN PLANNING REGULATION	
	<a href="#">iva:legge:2017;24&amp;dl t=text/xml&amp;dl a=y&amp;dl id =10&amp;pr=idx,0;artic,1;articparziale,0&amp;ev=1</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquake period
Does the document specifically deal with cultural heritage?	<i>Yes, but not specifically for earthquakes</i>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This regional law is composed of 6 Title and 80 articles and deals with territorial protection and use. The main objectives of the law consist in avoiding soil consumption and promoting the regeneration of urban territory with the improvement of urban and buildings quality. In particular the law refers to efficiency in the use of energy and physical resources, the environmental performance of buildings and materials and the comfort of buildings. Also the compliance with earthquake and safety standards, the quality and liveability of urban spaces and neighbourhoods and the promotion of social housing are addressed.</p> <p>Interventions of urban regeneration are defined. Among others “buildings qualifications” interventions deal with seismic vulnerability; in particular there is the possibility of demolition and reconstruction of buildings which cannot reach minimum standards in energy efficiency and seismic safety, nor in the safety of electrical and hydric installations, nor in sanitary conditions requirements. Interventions of seismic safety and energy efficiency improvement are allowed if demolition is not possible.</p> <p>Other objectives of the law are the enhancement and protection of the territory and the strengthening and protection of cultural and historical heritage.</p> <p>In this law a new urban planning tool is introduced and it is called “PUG” which is the acronym of “Urban General Plan”.</p> <p>The PUG is the planning tool that municipalities predispose to outline the strategies of urban planning and the development of territory aiming at the regeneration of urbanised territory, reduction of soil consumption and environmental and territorial sustainability of uses and transformations.</p> <p>The PUG:</p> <ul style="list-style-type: none"> <li>- identifies the perimeter of the urban area, dictates the discipline for historic areas and establishes the constraints on territory;</li> <li>- regulates the urbanised territory;</li> <li>- establishes the strategy for urban and ecological environmental quality;</li> <li>- disciplines the new settlements that can be built outside the perimeter of the urbanised area and the discipline of the rural areas.</li> </ul> <p>The regional law promotes a higher knowledge of territory and existing buildings, in order to ensure the effectiveness of the protection actions and the sustainability of the transformation policies; for this</p>	



#### URBAN PLANNING REGULATION

purpose the PUG' s cognitive framework aims at representing and evaluating the state of territory and its ongoing processes. In the cognitive framework there are the analysis of local seismic risk and the seismic micro-zoning of municipality, which allow planning tools to provide specific prescriptions for those parts of territory which are the most exposed to seismic hazard.

To access the PUG of the Municipality of Bologna:

[http://dru.iperbole.bologna.it/pianificazione?filter=Piano%20Urbanistico%20Generale%20\(PUG\)](http://dru.iperbole.bologna.it/pianificazione?filter=Piano%20Urbanistico%20Generale%20(PUG))

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

As explained before, in Italy each Region has the power of legislating on spatial and urban planning.

In this survey, the Emilia-Romagna Region only has been included, considering it is one of the Regions included in ADRION Programme and it is represented by UNIBO and IIPLE and it is where the Pilot case is located.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of ***seismic incentive frameworks*** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

In Italy is in force the D.L. n. 63/2013 that gives access to economic incentives to be used for the reduction of seismic risk in buildings and it is applicable, at this moment, for those interventions that improve the seismic safety of constructions. To date, to get access at these economic incentives these interventions must be concluded and paid within June 2022 but this temporal limit is still subject to modifications. This initiative has been called “Sisma Bonus” and in its first version it established that up to 85% of the costs of interventions for seismic vulnerability reduction would have been reimbursed by the Italian state in five years in the form of taxes reduction. The exact amount depends on the kind of interventions implemented and the consequent level of seismic safety obtained. With the D.L. 34/2020 this amount of discount has been raised to 110%. The possibility to transfer the credit to third parties increase the effectiveness of this incentive because also people without the amount of money to pay immediately the intervention can take advantage of the initiative.

Emilia-Romagna Region with the adoption of the new PUG (see table 4.1) has introduced also some volumetric incentives to foster the qualification of the built environment from both seismic and energetic point of view. For what concerns the incentives foreseen in the field of seismic retrofitting, the PUG of Bologna municipality allows to increase the volume of the building in the measure of maximum 10% of total. To access to this volumetric incentives, RE (see table 3.2) states the level of seismic safety to reach, according to the type of interventions.

When it comes to indirect incentives, some initiatives are promoted by Civil Protection department aiming at increasing awareness among citizens and students and sensitising private owners towards the seismic vulnerability of the built heritage.

**Table 5.1: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>D.L. (Legislative Decree) n. 63/2013 “Sismabonus” and subsequent modifications made by D.L. n. 34/2020 – converted in law n. 77/2020</b>
<u>Subsection</u>	Economic and financial incentive
Timeframe	May 2020 - current
Does the document refer to the EU regulatory framework?	Yes (It refers to 2010/31/UE but only when it comes to energy retrofitting)
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of Republic
Target groups	Practitioners in construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>Yes, they are.</p> <p>Law n. 77/2020 - coordinated version:  <a href="https://www.gazzettaufficiale.it/eli/gu/2020/07/18/180/so/25/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2020/07/18/180/so/25/sg/pdf</a>            pag.138 (VI Title, from art. 119)</p> <p><a href="https://www.gazzettaufficiale.it/eli/gu/2013/06/05/130/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2013/06/05/130/sg/pdf</a>            pag.1</p>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	No



### SEISMIC INCENTIVE FRAMEWORKS

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

D. L. n. 34/2020, art.119 subsection 4, states that the rate of deductions for implementing interventions aiming at seismic risk reduction raised to 110 percent for expenses incurred from 1 July 2020 to 30 June 2022 but this temporal limit is still subject to change. This provision cannot be applied if interventions address buildings in the fourth seismic zone, as defined in OPCM n. 3274/2003 and subsequent modifications and additions. The aforementioned deductions apply on an amount of expenses not exceeding € 96.000,00 for each real estate unit present in the building, as explained in D.L. n. 63/2013.

In table 5.2 guidelines to classify seismic risk of constructions in order to apply this incentive are explained.

**Table 5.2: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>D.M. (Minister Decree) n. 58/2017 and subsequent modifications and additions</b>
<u>Subsection</u>	Economic and financial incentives
Timeframe	2017 – current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Ministry of Infrastructures and Transports
Target groups	Practitioners in construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>Yes, it is.</p> <p>Coordinated version available here:  <a href="http://www.mit.gov.it/sites/default/files/media/normativa/2020-01/Testo%20coordinato%20del%20DM%20n%2058%20del%2028-02-2017.pdf">http://www.mit.gov.it/sites/default/files/media/normativa/2020-01/Testo%20coordinato%20del%20DM%20n%2058%20del%2028-02-2017.pdf</a> </p> <p>Annex A:  <a href="http://www.mit.gov.it/sites/default/files/media/normativa/2017-03/DM%2065%20del%2007-03-2017%20All%20A.pdf">http://www.mit.gov.it/sites/default/files/media/normativa/2017-03/DM%2065%20del%2007-03-2017%20All%20A.pdf</a> </p> <p>Annex B:</p>

SEISMIC INCENTIVE FRAMEWORKS	
	<a href="http://www.mit.gov.it/sites/default/files/media/normativa/2017-03/DM%2065%20del%2007-03-2017%20All%20B.pdf">http://www.mit.gov.it/sites/default/files/media/normativa/2017-03/DM%2065%20del%2007-03-2017%20All%20B.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquakes period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The Minister Decree establishes the guidelines for the evaluation of seismic risk of constructions and the methods for certification to be done by practitioners, concerning the effectiveness of interventions. Annex A explains how it is possible to calculate at which seismic vulnerability label buildings belong to. Practitioners have to certificate if structural interventions allow a reduction of the seismic risk of the construction with a passage of a certain number of vulnerability labels, if compared to ante-operam situation.</p> <p>There are two methods explained in the guidelines to attribute a seismic vulnerability label: the conventional and the simplified one. Both methods use the reference to “PAM” parameter, which can be assimilated to the cost of damage restoration caused by seismic events that will occur during the construction life, distributed over the year and expressed as a percentage of the reconstruction cost.</p> <p>According to the conventional method, practitioners can assign a seismic vulnerability label to the building by the calculation of the economic parameter “PAM” and “IS-V” that is the safety index of the structure. Both parameters are calculated according with NTC 2018 state limit design philosophy.</p> <p>The simplified method consists in the assignment of the seismic vulnerability label starting from the vulnerability class as defined by the European Macroseismic Scale (EMS). The vulnerability class, in relation to the risk of the site where the building is located, corresponds to a seismic vulnerability label.</p>	

**Table 5.3: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>“IO NON RISCHIO” – “ I don’t take risks”</b>
<u>Subsection</u>	Raising awareness (Training programmes for the earthquake)
Timeframe	2011 - current
Does the document refer to the EU regulatory framework?	No

SEISMIC INCENTIVE FRAMEWORKS	
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Department of Civil Protection, ANPAS, INGV, ReLUIS
Target groups	Citizens
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="http://iononrischio.protezione.civile.it/en/earthquake/the-campaign/">http://iononrischio.protezione.civile.it/en/earthquake/the-campaign/</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquakes period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p><b>“I don’t take risks” is a campaign</b> organised by the Civil Protection Department together with ANPAS- National Association of Pubbliche Assistenze, INGV- National Institute of Geophysics and Volcanology and ReLUIS- Laboratories University Network of seismic engineering.</p> <p>The campaign addresses many risks namely floods, tsunami, volcano and earthquakes with the aim to illustrate and communicate to citizens the best practices to reduce the impact of these natural hazards on people and things. The philosophy on which the campaign is based on is that the awareness and the knowledge of the possible consequences and the adoption of some simple expedients can reduce the individual exposition to risks.</p> <p>The initiatives consists of volunteers detected mainly by local association of Civil Protection who will meet the citizens in the squares. The volunteers leave informative material to people and are available to talk with citizens who want to be informed about the risks. The first edition of the campaign took place in squares in 2011 and the 2020 edition was held online on 11<sup>th</sup> October.</p> <p><a href="http://iononrischio.protezione.civile.it/en/dont-take-risks/squares/">http://iononrischio.protezione.civile.it/en/dont-take-risks/squares/</a></p>	

**Table 5.4: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>Volumetric incentives for seismic retrofitting interventions</b>

SEISMIC INCENTIVE FRAMEWORKS	
Subsection	planning (economic incentives)
Timeframe	2017 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Emilia-Romagna region
Promoter	Emilia-Romagna region
Target groups	Citizens and practitioners in the construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	The measures are included in the PUG and RE of Bologna Municipality. <a href="http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/4dbbe351-b42b-429f-b052-288455390fa5/RegolamentoEdilizio.pdf">http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/4dbbe351-b42b-429f-b052-288455390fa5/RegolamentoEdilizio.pdf</a> art.30
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>With the adoption of the LR 24/2017 (see Table 4.1), Emilia-Romagna Region established that incentives have to be assigned by the Municipality to foster urban regeneration and riqualfication of existing buildings (art. 8).</p> <p>Focusing on Bologna municipality, the new PUG (see table 4.1) has introduced also some volumetric incentives to foster the qualification of the built environment from both seismic and energetic point of view. For what concerns the incentives foreseen in the field of seismic retrofitting, the PUG of Bologna municipality allows to increase the volume of the building in the measure of maximum 10% of total. To access to this volumetric incentives, RE (see table 3.2) states the level of seismic safety to reach, according to the type of interventions.</p> <p>See action 1.1a of the urban plan:</p> <p><a href="http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/172e16de-6d32-43f3-9746-1a713919ba78/Disciplina%20del%20Piano_ADO.pdf#h.pju5pinpqowi">http://sit.comune.bologna.it/alfresco/d/d/workspace/SpacesStore/172e16de-6d32-43f3-9746-1a713919ba78/Disciplina%20del%20Piano_ADO.pdf#h.pju5pinpqowi</a></p>	

**Table 5.5: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
Title	"EDURISK"
<u>Subsection</u>	Raising awareness (Training programmes for the earthquake)
Timeframe	2011 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	INGV and National Department of Civil Protection
Target groups	Teachers and students
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="http://www.edurisk.it/">http://www.edurisk.it/</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquakes period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p><b>"EDURISK" is a project</b> developed by INGV- National Institute of Geophysics and Volcanology and the National Civil Protection Department with the aim to promote knowledge and awareness of seismic risk in schools and to activate prevention and risk reduction initiatives.</p> <p>EDURISK wants to offer to teachers the tools to create courses in classrooms addressing the knowledge of seismic and volcanic phenomena to disseminate a "culture of risk" to tackle with earthquakes and other hazards through prevention measures.</p> <p>To this aim, materials and training activities have been created for teachers and over the years the project involved more than 4.000 of them and more than 70.000 students coming from 14 Italian regions.</p> <p>The first initiative was created in Emilia-Romagna, Calabria and Friuli-Venezia Giulia in 2003-2004.</p> <p>Today EDURISK is still speaking to teachers and trainers but also to anyone who wants to know about earthquakes (and volcano) to reduce the associated risk. In addition, a collection of photos, maps and videos</p>	

### SEISMIC INCENTIVE FRAMEWORKS

are available on the website documenting the Italian seismic history in order to improve the knowledge of Italian territory vulnerability.

**Table 5.6: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
<b>Title</b>	<b>SICURO+ "Secure +"</b>
<u>Subsection</u>	Increasing awareness
Timeframe	2020 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Civil protection department, EUCENTRE foundation and ReLUIS
Target groups	Citizens and public administrations
Is the document publicly available? Please provide references (e.g. web link...), if possible.	It is a tool.  <a href="https://www.sicuropiu.it/index.xhtml">https://www.sicuropiu.it/index.xhtml</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) <p>SICURO+ is an online tool that provides the seismic risk of Italian municipalities, namely the assessment of the possible negative consequences on buildings (unavailability, collapse, economic losses) and on the resident population (victims, injured) due to earthquakes that may occur in the future.</p> <p>The seismic risk is calculated on the basis of all the buildings in the municipality, not on single house or public buildings.</p>	

### SEISMIC INCENTIVE FRAMEWORKS

SICURO+ allows to investigate the causes of increasing or decreasing of seismic risk, which depends not only on the frequency and severity of the earthquakes that may occur (danger), but also on the seismic resistance of the buildings in the municipality (vulnerability) and the quantity of goods and people in the selected area (exposure).

The main aim of the tool is to increase knowledge of the risk among citizens and to show, at the end of the procedure, some useful actions to increase awareness and actions that might be put in place to improve the safety against seismic risk.

Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?

Do you have Earthquake funds?

Not properly a certificate, but practitioners have to calculate the seismic vulnerability label of the building both in pre- and post-intervention condition to demonstrate the reached improvement of structural safety. However, conversely to the energy certificates, knowing the seismic vulnerability is not a prerequisite for buying and/or renting a property.

In Italy after a catastrophic earthquake, the state of emergency (following a natural disaster) is generally declared and the Government establishes an amount of money for the reconstruction phase.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

Among the economic incentives, these documents are the most important ones enacted at national level concerning economic incentives in order to reduce seismic vulnerability.

## 6 Post earthquake planning

Please, fill in the table below with information regarding **post earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

Please, add a short description of the situation in the field of **post earthquake planning** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

The Civil Protection Plan is the principal instrument in force at local level to address the disaster risk management. As for urban planning tools, each municipality should have its own Civil Protection Plan. In the Civil Protection website it is possible to see the list and the percentage of municipalities that have already adopted this plan. Here the link:

<http://www.protezionecivile.gov.it/servizio-nazionale/attivita/prevenzione/piano-emergenza/mappa-piani-comunali/dati-dettaglio>

The CLE and MS analysis are important instruments and studies to increase the resilience of municipalities through a deep knowledge of soils and urban territories, in case of catastrophic events occur.

**Table 6.1: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
Title	National plan for the prevention of seismic risk L. 77/2009 – art. 11
Subsection	Planning



POST EARTHQUAKE PLANNING	
Timeframe	2009 – 2016
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	The president of the Republic
Target groups	Practitioners in construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="https://www.gazzettaufficiale.it/eli/gu/2009/06/27/147/so/99/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2009/06/27/147/so/99/sg/pdf</a> pag. 63
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre earthquakes period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p><b>The art.11 of the “National plan for the prevention of seismic risk” (L. 77/2009)</b> provides that interventions for the prevention of seismic risk will be financed throughout the national territory, thanks to an economic fund established supplied by the Italian State.</p> <p>The Italian government authorised the expense of 965 million euros in seven years, starting from 2011 until 2016. The implementation of the interventions is entrusted to the Department of Civil Protection.</p> <p>The overall figure, even if conspicuous if compared to the past, represents only less than 1% of the efforts necessary to complete the adjustments interventions of all public and private buildings and strategical infrastructural works.</p> <p>The interventions that can be financed by this plan are the following:</p> <ul style="list-style-type: none"> <li>a) Seismic microzonation surveys and Limit Condition for Emergency analysis (this latter has been introduced within the second year – 2012)</li> <li>b) Structural interventions for local strengthening or seismic improvement or demolition and reconstruction of buildings of strategic interest and infrastructural works whose functionality during seismic events assumes fundamental importance for the purposes of civil protection and buildings and works which may be relevant in relation to the consequences of a collapse, of public ownership;</li> </ul>	

POST EARTHQUAKE PLANNING
<ul style="list-style-type: none"> <li>c) Structural interventions for local strengthening or seismic improvement or demolition and reconstruction of private buildings;</li> <li>d) Other urgent interventions with reference to situations of high vulnerability and exposure, also relating to public strategic structures or the ones necessary to the implementation of civil protection plans.</li> </ul>

**Table 6.2: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
<b>Title</b>	<b>National seismic risk rescue program DPCM 14/01/2014</b>
<u>Subsection</u>	Planning
Timeframe	2014 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	President of the Council of Ministers
Target groups	Practitioners in construction sector
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="https://www.gazzettaufficiale.it/eli/gu/2014/04/04/79/sg/pdf">https://www.gazzettaufficiale.it/eli/gu/2014/04/04/79/sg/pdf</a> pag. 1
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquakes period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
The <b>National Seismic Risk Rescue Program</b> establishes that the intervention model to cope with an emergency must be defined in the emergency plans, which report the set of actions and functional elements needed for operational management within an emergency phase.	

### POST EARTHQUAKE PLANNING

The Directive introduces for the first time the definition of plans for the implementation of emergency measures (National Plans, as mentioned in the art 5 of law n. 401/2001) to be enacted at a Regional scale. The plans consist of a first part in which the national organisation structure for the response to seismic events is described and a second one in which the civil protection organisation and the characteristic elements of the territory are investigated.

In addition, the National Rescue Program provides indications for updating and verifying emergency plans, also through periodic exercises and it promotes training courses for operators involved in the drafting and implementation of the plans, as well as initiatives and educational courses concerning the civil protection culture, especially to support the Mayors in communicating the contents of the emergency plans to the citizens.

**Table 6.3: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
<b>Title</b>	<b>Annex II of National emergency plan In the framework of the National seismic risk rescue program</b>
<u>Subsection</u>	Planning
Timeframe	2019 - current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Region of Emilia-Romagna
Target groups	Practitioners in construction sector working in Emilia-Romagna
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is available at the following website:  <a href="https://protezione.civile.regione.emilia-romagna.it/rischi-previsione-prevenzione/programma-nazionale-soccorso-rischio-sismico">https://protezione.civile.regione.emilia-romagna.it/rischi-previsione-prevenzione/programma-nazionale-soccorso-rischio-sismico</a>

POST EARTHQUAKE PLANNING	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquakes period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The document refers to the National seismic rescue programme. It concerns the definition of the national plan for seismic risk in the Emilia-Romagna region.</p> <p>The contents of the plan are those listed in the <b>National seismic risk rescue program – Annex II</b>.</p> <p>The document includes information about the organisation of Civil Protection and the characteristic elements of the territory in Emilia-Romagna region and it is divided into 5 chapter as follows:</p> <p>Cap I: Territorial and administrative framework</p> <p>Cap II: structure and infrastructure vulnerability</p> <p>Cap III: Characteristic elements – infrastructures and network</p> <p>Cap IV: Characteristic elements – regional organisation of Civil Protection Department</p> <p>Cap V: Regional legislation for Civil Protection</p>	

**Table 6.4: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
<b>Title</b>	<b>Municipal Civil Protection Plan</b>
<u>Subsection</u>	General legislation documents relating to civil protection
Timeframe	2016 – current
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Municipal level
Promoter	Municipality of Bologna

## ADRISEISMIC



POST EARTHQUAKE PLANNING	
Target groups	Practitioners in construction sector, population of Bologna
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Yes, it is. <a href="http://www.comune.bologna.it/sites/default/files/documenti/2016-04-15%20Piano%20Comunale%20ProtCiv.pdf">http://www.comune.bologna.it/sites/default/files/documenti/2016-04-15%20Piano%20Comunale%20ProtCiv.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquakes period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The Municipal Civil Protection Plan is mandatory by current regulations and it represents the tool that allows the Mayor to intervene with its own civil protection system, to manage local emergencies.</p> <p>Based on this assumption, the Civil Protection Plan addresses the knowledge of territory and the existing risks in order to create a command and control system deputy to react in case of emergency. The plan is a strategic tool useful to cope with natural and anthropic emergency draft with the purpose of implementing knowledge and management of the territory, planning all those activities and procedures designed to face a foreseeable or unexpected event and implementing the culture of safety among the population. According to this last objective, the plan has an informative purpose towards the population which become aware of the risks of its territory and the methods to cope with them.</p> <p>Chapter 2.4 deals specifically with seismic risk and summarises the state of the art of Bologna municipality from a seismic point of view, that is the seismic classification (Bologna is classified in the third zone which means that it is classifiable as a medium-low seismic risk municipality) and the insights results concerning local seismic response carried out by the Municipality.</p> <p>Chapter 4.2.4 deals with the behaviours to be adopted in case of earthquake by the population; they are divided into prevention measures, behaviours during the emergency phase and finally post-earthquake actions.</p> <p>Chapter 5 concerns procedures and operational models to be adopted in case of emergency. The articulation of the alert phases is explained; they are related to the intensification of the ongoing phenomenon and to a specific operational phase. Usually, the civil protection alert is divided into three phases:</p> <ul style="list-style-type: none"> <li>- attention phase;</li> <li>- pre-alarm phase;</li> <li>- alarm phase;</li> </ul>	

### POST EARTHQUAKE PLANNING

to which can be added:

- state of emergency;
- post-emergency status.

Generally phases are correlated with certain colours to make them immediately perceptible: the green colour is for the attention phase, the yellow colour is for the pre-alarm phase and the red colour is for the alarm phase. The black colour is usually connected to the emergency phase. In case of unexpected events, the attention phase does not exist because the forecast is impossible and so it goes directly to the alarm phase.

**Table 6.5: Post earthquake planning.**

POST EARTHQUAKE PLANNING	
<b>Title</b>	<b>Analysis of the Emergency Limit Condition (CLE) and Seismic Microzonation (MS)</b>
<u>Subsection</u>	<u>organization of earthquake response/rescue</u>
Timeframe	2009 - after L'Aquila earthquake
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Municipal level
Promoter	Municipality of Bologna
Target groups	Practitioners in construction sector, population of Bologna
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>The insights about the analysis of Limit Condition for Emergency are part of urban constraints maps to be approved with the new PUG.</p> <p>General aspects are provided in the Civil Protection website at this link:  <a href="http://www.protezionecivile.gov.it/attivita-rischi/rischio-sismico/attivita/analisi-condizione-limite-emergenza">http://www.protezionecivile.gov.it/attivita-rischi/rischio-sismico/attivita/analisi-condizione-limite-emergenza</a></p> <p>Also instructions for the realisation of the analysis are provided:</p>



## POST EARTHQUAKE PLANNING

	<a href="http://www.protezionecivile.it/documents/20182/0/IstruzioniSchedeCLE_3_0.pdf/3b077c99-7489-4d31-843f-bf38969d0f4f">http://www.protezionecivile.it/documents/20182/0/IstruzioniSchedeCLE_3_0.pdf/3b077c99-7489-4d31-843f-bf38969d0f4f</a>  Bologna case: <a href="http://sit.comune.bologna.it/alfresco/d/d/works/paces/SpacesStore/c42bfbc9-116b-4c1f-9c6d-8739913e482d/PP_Schede%20dei%20vincoli.pdf">http://sit.comune.bologna.it/alfresco/d/d/works/paces/SpacesStore/c42bfbc9-116b-4c1f-9c6d-8739913e482d/PP_Schede%20dei%20vincoli.pdf</a> pag. 106
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre and post-earthquakes period
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)  <p><b>The “National plan for the prevention of seismic risk” (L. 77/2009)</b> provides that interventions for the prevention of seismic risk will be financed throughout the national territory, thanks to an economic fund established supplied by the Italian State.</p> <p>In this framework the OPCM n. 3907/2010 (available here: <a href="http://www.protezionecivile.gov.it/documents/20182/0/ord_n_3907_art.11_dl_7709.pdf/b48d2fe6-59d2-4e3f-ae3f-d548b2e118b6">http://www.protezionecivile.gov.it/documents/20182/0/ord_n_3907_art.11_dl_7709.pdf/b48d2fe6-59d2-4e3f-ae3f-d548b2e118b6</a>) established which interventions would be eligible to get access to the economic fund and, among others, the seismic microzonation studies were included.</p> <p>When it comes from the Emergency Limit Condition (CLE) analysis, it was introduced with the OPCM 4007/12 which regulates the use of the National Fund for the prevention of seismic risk for the year 2011. The CLE study is conducted in junction with seismic microzonation (MS) studies. It can be carried out at the municipal level even if it is also possible to conduct it at the provincial level.</p> <p>The Emergency Limit Condition for urban settlements consists in the definition of the condition upon which the urban settlement still retains the operation of most of the strategic functions for the emergency, their accessibility and their connection with the territorial context, even if an earthquake occurred and the damage caused the interruption of almost the totality of the urban functions, including the residence one.</p> <p>The analysis consist of:</p> <ol style="list-style-type: none"> <li>1) the identification of buildings and areas that ensure strategic functions for the emergency;</li> <li>2) the identification of infrastructure to guarantee the accessibility and the connection with the territorial context, buildings and areas identified in the first point and any critical elements;</li> <li>3) the identification of structural aggregates and individual structural units that may interfere with the infrastructures that guarantee accessibility and connection with the territorial context.</li> </ol>	

### POST EARTHQUAKE PLANNING

In particular, the analysis concerns about the filling of 5 predisposed sheets:

- ES: Strategic buildings
- AE: Emergency area
- AC: Infrastructures of accessibility and connection
- AS: Structural Aggregates
- US: Structural Unit

When It comes to the Seismic Microzonation, it is defined as “the assessment of local seismic hazards by identifying the zones of a given geographic area with homogeneous seismic behaviour. In practice, SM identifies and characterises stable zones, stable zones prone to local amplification of seismic movement and zones prone to instability” and guidelines for its realisation have been published by the Civil Protection. The english version is available here:

[http://www.protezionecivile.gov.it/httpdocs/cms/attach\\_extra/GuidelinesForSeismicMicrozonation.pdf?](http://www.protezionecivile.gov.it/httpdocs/cms/attach_extra/GuidelinesForSeismicMicrozonation.pdf?)

Through seismic microzonation studies it is possible to get knowledge about soil conditions and get useful information about local government, emergency planning and post-earthquake reconstruction.

For the Bologna case, these analysis are carried out within the predisposition of the new urban plan (PUG) and in the map of urban constraints the buffer zones for those elements selected in the CLE analysis are identified together with the representation of the results of seismic microzonation studies.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

As for urban planning regulations, these studies are generally carried out at a municipal level. Therefore, in Italy CLE and MS are available for the majority of municipalities but in the present survey only the Municipality of Bologna is considered.



## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

<p>Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.</p>
<p>In Italy it is estimated that 836.000 houses are insured against natural disaster which means a percentage of 2,4% on built heritage. This percentage drops to 1,7% if only earthquakes are considered which means that about 570.000 units are insured against earthquakes. The 85% of the latter is located in areas with a lower seismic risk. <sup>4</sup></p>
<p>As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?</p>
<p>The whole national territory is divided into four seismic zone (see Table 2.8). For insurance companies this classification is not the most suitable so it is widely used the classification of CRESTA to evaluate the seismic risk of the areas. <sup>4</sup> Here the link:</p> <p><a href="https://www.cresta.org/zones-maps">https://www.cresta.org/zones-maps</a></p>

In order to fill the table, references are made at the paper, if not otherwise specified:

Gizzi, F.T., Potenza, M.R. and Zotta, C. (2016) **The Insurance Market of Natural Hazards for Residential Properties in Italy**. Open Journal of Earthquake Research, 5, 35-61.  
<http://dx.doi.org/10.4236/ojer.2016.51004>.

<sup>4</sup> [Cesari Riccardo e D'Aurizio Leandro, (luglio 2019) **Calamità naturali e coperture assicurative: valutazione dei rischi e policy options per il caso italiano**. IVASS Insurance Supervisory Institute Notebook n. 13. Published in July 2019 and updated in February 2020. ISSN 2421-4671(online)  
[https://www.ivass.it/pubblicazioni-e-statistiche/pubblicazioni/quaderni/2019/iv13/Quaderno\\_13.pdf](https://www.ivass.it/pubblicazioni-e-statistiche/pubblicazioni/quaderni/2019/iv13/Quaderno_13.pdf)]

The heart of the document is an overview on the main insurance companies in Italy that deals with earthquakes policies explaining which opportunities they offer to homeowners or condominiums. The authors want to explain why the penetration rate in Italy is so low and identify how to increase it taking advantage on other international experiences analysed in the paper. All values and evaluation reported in Table 6.1 were analysed by the authors in 2016 in pamphlets of each policy available in the market. Some information was gained also through the policy contracts requested to companies. They found information about 20 insurance Italian companies.

In order to give some more general information concerning Italian situation, other literatures report that less than 5% of households and 30% of commercial activities take out an earthquake insurance. In addition this latter is usually considered as an extension to the fire policy.<sup>5</sup>

To contextualise the Italian situation, it is relevant to know that Italian Civil Code states that insurance companies are not obliged to compensate for losses caused by earthquakes, wars, insurrections and social riots. This means that companies that offer an insurance against these natural hazards make an exception to the Code; therefore, once the insurance is bought by a client, companies provide with the payment of the amount they agreed according to their policy.

**Table 7.1: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
<b>Insurance company</b>	<p>In Italy there are 33 insurance groups. The groups are organised in 1225 insurance companies: 645 of them registered their activity in Fire and Natural Elements branch.</p> <p>Generali and Unipol cover together about 70% of the Italian market.</p>
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	Some companies excludes those buildings made entirely of masonry (both load-bearing walls and vaults) or cultural heritage which is protected by the Superintendence of Artistic and Architectural Heritage.
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	Structures not in accordance with technical and planning tools are insurable.

<sup>5</sup> Roth, R. (1999). *Foreign Earthquake Insurance Programs*. ICLR, Toronto

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Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	Building under construction can be uninsurable according to many insurance companies policy.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>It is possible to insure a single flat of a condominium, and also a percentage of common spaces are insured within it, proportionally to the share of ownership of the apartment.</p> <p>There is the possibility to ensure the entire condominium by condominium administrators; in this case the entire building and each property located in are insured.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Most of policies are basic and covers only the reconstruction of building or repair costs. In some cases there is the possibility for an extended version of insurance cover, which includes refunds for damage at building contents, damage at occupants, increased temporary living costs and income loss due to a forced interruption of business.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	<p>Some insurance companies consider uninsurable buildings in a bad conservation state (e.g. Intesa San Paolo Assicura S.p.A.)</p> <p>If assurance depends on buildings structural typology (Earthquake-proof buildings, structures made up of reinforced concrete or masonry), deductibles raises proportionally with the increase of building vulnerability. Masonry buildings are the most vulnerable.</p>
Does the optional earthquake insurance premium depend on the property area?	Not found. No, the premium is calculated on the amount of insured value.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes, premium depends on the seismic risk of the area where the building is located. Sometimes the possibility of activate an earthquake insurance depends on the presence of towers or bell towers nearby: if these vulnerable elements are present within 25 meter from the building to be insured some companies don't offer the possibility to get the insurance.

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To what extent is the damage recovered?	Insurance generally covers only damage to properties but non always to their contents or others collateral damages.
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	No, the insurance depends especially from the level of seismic risk of the area where the building to be insured is located.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	All companies estimate the value of properties on the basis of costs required to replace them. It is a value generally independent from the market value of houses.
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	No. There is always the application of deductibles. Most of companies accommodates them between 5 and 20% of insured value with a fixed minimum value (e.g. 10.000€ or similar amounts).  In addition some companies recover only the maximum of the 65% of the insured value.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>The premium price depends on the re-building value calculated also on the basis of how many square meters the house consists of. The premium is determinated by the free market.</p> <p>The insurance premium fluctuates a lot depending on the seismic risk zone in which the building is located. If the location is set in a low seismic risk area the premium is around 50-60 €/year each 100.000€ of insured value (e.g. for a 200 sqm flat with 200.000€ of reconstruction cost the premium can be about 100-120€/year).</p> <p>If the building is located in a high seismic risk area the amount of premium increase and it can reach 400 €/year for each 100.000€ of insured value (e.g. for the apartment in the previous example the premium is now of 800€/year). These costs refer only to the building structure not to the contents and they depend also from the fact that the insurance is optional.<sup>6</sup></p>

<sup>6</sup> Mario Montagnini – General Director of ANIA (National Association of Insurance Companies). 23<sup>th</sup> of September 2016. Interview at TV2000.

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	<p>If all buildings in the national territory would be covered by an earthquake insurance the maximum premium would be around 100€/year each 100.000€ of insured value.<sup>7</sup></p> <p>More in general, premium fluctuates from 0,12% to 0,32% of the amount insured (the re-building value)</p>
Additional information regarding optional earthquake insurance	<p>Premiums amount and high values of deductibles make insurance against earthquakes not convenient for a high percentage of householders, especially if they are owner of a masonry building.</p> <p><b><u>Other additional notes:</u></b></p> <p>In Italy the highest seismic risk is concentrated along the Apennine ridge and in the south: Campania, Calabria and Sicily but Italians seem to be unaware of this high level of risk.</p> <p>The size of the problem can be understood considering that the last earthquake of 2016 in Central Italy caused 5.7 billion damage to buildings, and of these, only a total value of 200 million, were insured.</p> <p>The share of protected homes is higher in the north west than in the north east and the center and is much lower in the south and islands.</p> <p>In the same way, we would expect a higher spread of seismic risk coverage in urban areas and historic centers where this risk is higher, but statistics only partially confirm this figure.</p> <p><b><u>Additional information on the insurance situation of buildings in the historic centers of Italian cities</u></b></p> <p>From the point of view of earthquake insurance, in the Italian urban historical centers some main types of buildings can almost always be present, which also determine the insurance choices against seismic events in a different way:</p>

<sup>7</sup> Cesari Riccardo e D'Aurizio Leandro, (luglio 2019) **Calamità naturali e coperture assicurative: valutazione dei rischi e policy options per il caso italiano**. IVASS Insurance Supervisory Institute Notebook n. 13. Published in July 2019 and updated in February 2020. ISSN 2421-4671 (online)  
[https://www.ivass.it/pubblicazioni-e-statistiche/pubblicazioni/quaderni/2019/iv13/Quaderno\\_13.pdf](https://www.ivass.it/pubblicazioni-e-statistiche/pubblicazioni/quaderni/2019/iv13/Quaderno_13.pdf)

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- Historic residential buildings, used by the individual owners as the main residence home
- Properties intended for economic and commercial activities where the owner of the economic activity is also the owner of the property
- Properties dedicated to commercial and production activities where the owner of the building is different from the entrepreneur or the tenant
- Historic or new buildings dedicated to public functions (municipalities, regions, museums, registry offices, various public bodies), usually publicly owned
- Buildings intended for banking activities which are owned by the same bank
- Religious buildings

In all these cases, any insurance coverage against seismic events is determined by the balance sheet or the functional type of the building. The determination of insurance prices mainly depends on the seismicity of the urban area and in part on the state of maintenance and on the construction characteristics of the historic buildings.

The behaviour of the subjects involved in the asset management of these types of buildings is different and determines very disparate situations:

- Homeowners rarely enter into earthquake insurance contracts because of relatively high policy values (they usually do so only in large cities, in wealthy economic situations and when they use the building as their primary home). One of the reasons is also the building typology and the "weak" structural situation of the brick buildings.
- Buildings used for commercial, craft and production activities are often insured when the entrepreneurs or the managers of the activity are also owners of the property, otherwise the owner of the property, aiming for direct returns, avoids any additional costs, assigning compensation and the reconstruction of government interventions and public funds.

## ADRISEISMIC



- |  |  |
|--|--|
|  | <ul style="list-style-type: none"><li>• Public administrators must politically choose whether to advance and invest public money for the insurance of the properties they use, (knowing that they will be able to get only half of the value of the property in exchange for insurance or let the State do charged with the reconstruction, bearing the costs a posteriori. The second case often prevails.</li><li>• Banks, especially when they own the properties they occupy, are the most protected and covered by serious insurance policies. One of the main reasons is also the economic nature of the entities, often structurally linked to the insurance companies.</li><li>• Religious buildings, despite the immense value of the artistic works they contain or possess, were almost never insured until 2018, leaving the burden of post-earthquake reconstruction to the state. Since 2018, the situation has slightly improved, thanks to a national agreement between the CEI (Italian Episcopal Conference) and the Cattolica Assicurazioni company that allows the stipulation of uniform and generalized insurance coverage for more than 25,600 buildings of worship throughout the national territory. However, the current level of insurance coverage against seismic events of this building typology is still relatively low.</li></ul> |
|--|--|



## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.2: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.
/



## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Insert topic**

TOPIC	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN SERBIA (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has some changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix).

Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1st stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion,



the chapter “***Seismic incentive frameworks***” is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds...). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic “***Post earthquake planning***”. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

---

**Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
<b>Project partner</b>			<b>PP5 – Regional Development Agency Bačka Ltd. Novi Sad</b>			
Country			Republic of Serbia			
Country area			88,361 km <sup>2</sup>			
Population			6,963,764			
Administrative division of the country Please, indicate existing country levels (e.g: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			<ul style="list-style-type: none"> <li>- National level: Serbia</li> <li>- Regional level: 5 regions</li> <li>- Province level: 29 districts</li> <li>- Local level: 174 local self-government units (145 municipalities and 29 cities)</li> </ul>			
<p>Recent earthquakes</p> <p>Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.</p>						
	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1	1436	Prizren	5.7			
2	1521	Obrenovac	5.6			
3	1555	Vranje	6.0			
4	1662	Peć	5.8			
5	1739	Jagodina	5.7			
6	1740	Fruška gora	5.2			
7	1893	Svilajnac	5.7			
8	1921	Vitina	5.5			
9	1922	Lazarevac (44.5N 20.3E)	6.0 ML	MMI IX-X		4 people injured
10	1927	Rudnik	5.9		7	
11	1978	Kopaonik	5.7 ms	MMI VI		

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BASIC INFORMATION						
12	1980	Kopaonik	5.9 ML; 5.8 ms	MMI 7-8.5	None	30 people injured
13	1983	Kopaonik (43.246N 20.859E)	4.9-5.0 ML; 5.1 mb	MMI VIII	None	Seven villages affected, leaving 200 homeless, and around 1.200 damaged buildings.
14	1985	Kopaonik	5.2 mb	MMI VI		
15	1998	Mionica (44.209N 20.080 E)	5.5 ML; 5.5 Mwc	MMI VIII	1	17 people injured; 3.500 buildings collapsed, while additional 3.500 buildings suffered severe structural damage; 24.185 damaged structures reported in the Kolubara district
16	1999	Mionica (44.181N 20.071E)	5.4 Mw	MMI VII	None	12 damaged buildings
17	1999	Trstenik (43.76N 21.12E)	5.0 ML; 5.2 Mwc	MMI VII	None	
18	2010	Kraljevo (43.76N 20.73E)	5.4 ML; 5.5 Mwc	MMI VI; MCS VII-VIII	2	Around 180 injured people and 8.000 homeless; around 25.000 damaged structures. Out of these, approximately 16.000 individual houses, 8.500 apartment units, 33 schools and several hundreds commercial facilities were damaged.

## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>seismic norms</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>The former Yugoslavia (SFRY), including Serbia as one of the republics, had a unified system of regulations for seismic design and construction. The first normative document, mandatory for the whole territory of SFRY, was the 1964 seismic code (Table 2.4). Subsequently, an updated seismic code, issued in 1981 (Table 2.3), contained updates to the seismic zonation map and the seismic force calculation approach. The Eurocode 8 recently became a mandatory standard for seismic design in Serbia (Table 2.1 and Table 2.2).</p>

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	Projektovanje seizmički otpornih konstrukcija (SRPS EN 1998) Eng: Eurocode 8: Design of structures for earthquake resistance (EN 1998)
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	Published in 2019
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Institute for Standardization of Serbia (ISS)
Target groups	Designers, civil engineers, relevant national and local bodies, developers (funding agencies),

SEISMIC NORMS	
	technical supervisors, contractors, general population
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>Serbian version: Available for purchase on the ISS <a href="#">website</a>.</p> <p>English version: Available online with the exception of National Annexes that are available only in Serbian language</p>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The Eurocode 8 standard was published pursuant to the 'Technical Regulations for Building Structures' (2019) (see Table 3.2). According to these technical regulations, the seismic designs need to be performed for the Ultimate Limit States and Serviceability Limit States. In addition, stability of structures under seismic loadings must be ensured. Seismic design is mandatory for all structures except the ones situated in the low seismicity zone according to the National Annex SRPS EN 1998-1/NA. Eurocode 8 details also the rules with respect to seismic design of composite construction.</p> <p>The SRPS EN 1998 standard governs seismic design and assessment/retrofitting of buildings and civil engineering works in Serbia. It consists of the full text of the Eurocode 8 (Serbian translation of CEN publications) and National Annexes that contain information on Nationally Determined Parameters (NDP). National Annex SRPS EN 1998-1/NA contains seismic zonation map of Serbia depicting design seismic action (i.e. maximum horizontal ground acceleration) corresponding to 475-year return period earthquake.</p> <p><u>SRPS EN 1998 consists of the following (12) documents:</u></p> <p>SRPS EN 1998-1 : General rules, seismic actions and rules for buildings</p> <p>SRPS EN 1998-1/NA : General rules, seismic actions and rules for buildings – National Annex</p> <p>SRPS EN 1998-2: Bridges</p> <p>SRPS EN 1998-2/NA: Bridges – National Annex</p> <p>SRPS EN 1998-3: Assessment and retrofitting of buildings</p> <p>SRPS EN 1998-3/NA: Assessment and retrofitting of buildings – national Annex</p> <p>SRPS EN 1998-4: Silos, tanks and pipelines</p> <p>SRPS EN 1998-4: Silos, tanks and pipelines – National Annex</p> <p>SRPS EN 1998-5: Foundations, retaining structures and geotechnical aspects</p>	

SEISMIC NORMS
<p>SRPS EN 1998-5/NA: Foundations, retaining structures and geotechnical aspects – National Annex</p> <p>SRPS EN 1998-6: Towers, masts and chimneys</p> <p>SRPS EN 1998-6/NA: Towers, masts and chimneys – National Annex</p> <p>Note that the SRPS EN 1998 standards were applied to some extent in Serbia prior to their official enforcement in 2020, mostly for important structures such as bridges and tall buildings.</p> <p>The documents mentioned in Table 2.2, Table 2.3 and Table 2.4 became nullified (are no longer valid) as of the date of commencement of the current regulations.</p>

**Table 2.2: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<p><b>Pravilnik o tehničkim normativima za izgradnju objekata visokogradnje u seizmičkim područjima</b></p> <p><b>Eng: Technical Regulations for the Design and Construction of Buildings in Seismic Regions</b></p>
<b>Subsection:</b> <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	Entry into force: 1981
<b>Does the document refer to the EU regulatory framework?</b>	No
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level (the Code applied to the whole territory of the SFR Yugoslavia)
<b>Promoter</b>	<p>Yugoslav Institute for Standardization</p> <p>Published in Official Gazette of SFRY No. 31/81 (Amendments 49/82, 29/83, 21/88, 52/90)</p>
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
<b>Is the document publicly available?</b> Please provide references (e.g. web link...), if possible.	<p>Serbian version:</p> <p><a href="http://demo.paragraf.rs/demo/combined/Old/t/t2006_01/t01_0164.htm">http://demo.paragraf.rs/demo/combined/Old/t/t2006_01/t01_0164.htm</a></p>



SEISMIC NORMS	
	English version: part of the document available at <a href="https://iisee.kenken.go.jp/worldlist/46_Serbia/46_Serbia_Code.pdf">https://iisee.kenken.go.jp/worldlist/46_Serbia/46_Serbia_Code.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The technical regulations are related to the design and construction of buildings in seismic zones with associated intensities VII, VIII and IX per the MCS scale. Special investigations and analyses are required for construction of buildings in seismic zones with the maximum intensity X per the MCS scale. The code includes seismic zoning maps indicating the MCS intensity with the earthquake return period of 50, 100, 200, 500, 1000 and 10000 years. In accordance with the provisions of this Code, design of buildings in seismic regions should be such that earthquakes of the highest expected intensity may cause damage to buildings, but, in no case, collapse of buildings.</p> <p>A series of temporary seismological maps was later compiled by the Yugoslav Seismological Committee for the territory of the former Yugoslavia. Seismic Zoning Map related to maximum expected intensities for a 500 year earthquake return period became the official map in the year 1990.</p> <p><u>Key features of seismic analysis provisions:</u></p> <ul style="list-style-type: none"> <li>- The code contained basic provisions for different structural systems, e.g. masonry and RC structures.</li> <li>- The equivalent static analysis procedure was prescribed for structures under categories I to IV, while dynamic analysis was prescribed for special structures, e.g. tall buildings more than 25 storeys high, and also for irregular structures (e.g. buildings with flexible ground floor).</li> <li>- Design seismic forces for the equivalent static analysis were determined based on the building occupancy/importance, seismic intensity, soil type (3 categories), and dynamic properties (fundamental period).</li> <li>- A coefficient accounting for the type of structural system and expected ductility was introduced for the first time.</li> <li>- Distribution of seismic forces along building height considered the effect of higher vibration modes for buildings taller than 5 storeys.</li> <li>- The code prescribed a procedure for considering torsional effects, and a provision of seismic gaps was prescribed for irregular buildings.</li> </ul>	

SEISMIC NORMS
<ul style="list-style-type: none"> <li>- For the first time lateral inter-storey drift limits were prescribed.</li> <li>- A safety coefficient (1.15 to 1.5 – depending on the material) was prescribed for the Ultimate Limit States design method. An increase of 50% in the non-seismic allowable stresses was prescribed for the Allowable Stress Design method.</li> <li>- The total design seismic force (as a fraction of the building weight) ranged from 5% for flexible high-rise RC buildings to 13% for rigid low-rise masonry buildings - for the highest seismic intensity (IX) and soil category II (medium).</li> </ul>

**Table 2.3: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<b>Pravilnik o privremenim tehničkim propisima za građenje u seizmičkim područjima</b> <b>Eng: Provisional Technical Regulations for Construction in Seismic Regions</b>
<b>Subsection:</b> <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
<b>Timeframe</b>	Entry into force: 1964
<b>Does the document refer to the EU regulatory framework?</b>	No
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level (it applied to the whole territory of the FNR Yugoslavia)
<b>Promoter</b>	Yugoslav Institute for Standardization Published in Official Gazette of SFRY No. 39/64
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
<b>Is the document publicly available?</b> Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://dokumen.tips/documents/1-zbirka-jugoslovenskih-pravilnika-i-standarda-za-gradjevinske-konstrukcije.html">https://dokumen.tips/documents/1-zbirka-jugoslovenskih-pravilnika-i-standarda-za-gradjevinske-konstrukcije.html</a> (pages 171-191) English version: not available

SEISMIC NORMS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The code governs the design and construction of buildings and other civil engineering structures in seismic zones with associated intensities VII, VIII and IX per the MCS intensity scale. It incorporated the 1950 seismic zoning map of the SFRY, issued by the Seismological Bureau of SFRY.</p> <p><u>Key features of seismic analysis provisions:</u></p> <ul style="list-style-type: none"> <li>- The code contained basic provisions for different structural systems, e.g. masonry and RC structures.</li> <li>- The Modal Analysis method was prescribed for the design of flexible structures, while rigid structures could be designed using simplified methods.</li> <li>- Only the first mode had to be considered in the analysis, except for tall structures for which the first 3 modes had to be considered.</li> <li>- Only the first mode had to be considered in the analysis, except for tall structures for which the first 3 modes had to be considered.</li> <li>- The design seismic forces were determined based on the building occupancy, seismic intensity, soil type (3 categories), and dynamic properties (fundamental period); type of structural system and expected ductility level were not considered.</li> <li>- The code prescribed that the analysis should consider torsional effects but did not provide specific guidance with regarding other types of irregularities. For example, it was stated that sudden changes in stiffness within the structural system should be avoided, but it was not specified how "sudden change" should be quantified.</li> <li>- A safety coefficient for the Ultimate Limit States design was 1.33, and non-seismic allowable stresses were increased by 50% for design according to the Allowable Stress Design method.</li> <li>- The total design seismic force (as a fraction of the building weight) ranged from 8% for flexible high-rise RC buildings to 15% for rigid low-rise masonry buildings - for the highest seismic intensity (IX) and medium soil conditions.</li> </ul>	

**Table 2.4: Seismic norms**

SEISMIC NORMS	
<b>Title</b>	<p><b>Pravilnik o tehničkim normativima za sanaciju, ojačanje i rekonstrukciju objekata visokogradnje oštećenih zemljotresom i za rekonstrukciju i revitalizaciju objekata visokogradnje</b></p> <p><b>Eng: Technical Regulations for Repair, Strengthening and Reconstruction of Building Construction Damaged by Earthquakes and for Reconstruction and Rehabilitation of Building Structures.</b></p>
<b>Subsection:</b> <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- assessment of existing structures</li> <li>- seismic retrofitting of structures</li> </ul>
<b>Timeframe</b>	Entry into force: 1985
<b>Does the document refer to the EU regulatory framework?</b>	No
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level (it applied to the whole territory of the Socialist Federal Republic of Yugoslavia)
<b>Promoter</b>	Yugoslav Institute for Standardization Published in Official Gazette of SFRY No. 52/85
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
<b>Is the document publicly available?</b> Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://dokumen.tips/documents/1-zbirka-jugoslovenskih-pravilnika-i-standarda-za-gradjevinske-konstrukcije.html">https://dokumen.tips/documents/1-zbirka-jugoslovenskih-pravilnika-i-standarda-za-gradjevinske-konstrukcije.html</a> (pages 214-221) English version: not available
<b>Does the document refer to pre-earthquake period, post-earthquake period or both of them?</b>	Pre- and post-earthquake period
<b>Does the document specifically deal with cultural heritage?</b>	No

## SEISMIC NORMS

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

The code prescribes technical regulations for the repair, strengthening (retrofitting) and reconstruction of buildings in seismic zones with associated intensities VII, VIII and IX per the MCS Scale. It also governs reconstruction and rehabilitation of buildings that were built without seismic design considerations and that were situated in seismically active zones, as well as rehabilitation of obsolete buildings. The code prescribes that the strengthening and rehabilitation of buildings in seismic regions should be such that earthquakes with the maximum expected intensity may cause building damage, but in no case they should cause a collapse. The code sets out the provisions for repair of reinforced concrete and masonry structures as well as repair of foundations.

The first provisions for design and construction in seismic regions in FNRJ were published in 1948 ('Provisional Technical Regulations (PTR) for Loading of Structures, Part 2, No. 11730, 12 July 1948 – PTP2'). Seismic design forces were applied as a static load, and the total design force ranged from 1 to 2% of the building weight, depending on the type of structure and seismic intensity. The code did not contain specific detailing provisions for RC and masonry structures. It should be emphasized, however, that the first comprehensive seismic design code for SFRY was only introduced in 1964 (Table 2.4) (prompted by the 1963 Skopje earthquake).

### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of <b>building regulations</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
The 2009 'Planning and Building Act' (Table 3.1) is the current governing Act in Serbia. The Eurocode standards were officially introduced and enforced in Serbia through the 2019 'Regulations for Building Structures' (Table 3.2). This document was compiled pursuant to the 2009 'Planning and Building Act'.

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	<b>Zakon o planiranju i izgradnji</b> <b>Eng: Planning and Building Act (Law on Planning and Construction in Serbia)</b>
Timeframe	Entry into force: 2009
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Serbia. Published in Official Gazette of the Republic of Serbia No. 72/2009 (Amendments No. 81/2009, 64/2010, 24/2011, 121/2012, 42/2013, 50/2013, 98/2013, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019, 9/2020)
Target groups	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
Is the document publicly available?	Serbian version:

## ADRISEISMIC



BUILDING REGULATIONS	
Please provide references (e.g. web link...), if possible.	<a href="https://www.paragraf.rs/propisi/zakon_o_plani_ranju_i_izgradnji.html">https://www.paragraf.rs/propisi/zakon_o_plani_ranju_i_izgradnji.html</a>  English version: <a href="https://www.paragraf.rs/propisi/planning-and-building-act-serbia.html">https://www.paragraf.rs/propisi/planning-and-building-act-serbia.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period (construction of buildings)
Does the document specifically deal with cultural heritage?	Yes, several articles of the Act deal with cultural heritage.
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p><u>The Act governs the following:</u></p> <ul style="list-style-type: none"> <li>- methods and conditions for spatial planning, land development and land use, and construction of facilities;</li> <li>-supervision and inspection with respect to the application of the provisions of this Act</li> <li>-other issues of importance for land development, land use and construction of facilities.</li> </ul> <p><u>The Act consists of the following sections:</u></p> <ol style="list-style-type: none"> <li>1. Basic provisions</li> <li>2. Spatial and Urban Planning</li> <li>3. <i>Section deleted</i></li> <li>4. Building Land</li> <li>5. Construction of facilities</li> <li>6. Building permit</li> <li>7. Construction</li> <li>8. Occupancy permit</li> <li>9. Professional exam and licenses for the responsible planner, urbanist, designer and contractor</li> <li>10. Serbian chamber of engineers</li> <li>11. Removal of facilities</li> <li>12. Supervision</li> <li>13. <i>Section Repaled</i></li> <li>14. Authorisation for enacting secondary legislation</li> </ol> <p><u>Acts that governed building regulations prior to the introduction of the 2009 Planning and Building Act (Table 3.1):</u></p>	

BUILDING REGULATIONS	
<ul style="list-style-type: none"> <li>• In the period from 2003 to 2009: Planning and Building Act (Official Gazette of the Republic of Serbia No. 47/03 and 34/06);</li> <li>• In the period from 1995 to 2003: Building Act (Official Gazette of the Republic of Serbia No. 44/95, 24/96, 16/97 and 43/01);</li> <li>• In the period from 1984 to 1995: Building Act (Official Gazette of SFRY No. 10/84, 24/85, 35/86, 37/88, 41/88 i 6/89 and Official Gazette of SFRY No. 53/93 i 67/93);</li> <li>• In the period from 1973 to 1984: Act on construction of investment facilities (Official Gazette of SFRY No. 23/73, 31/74, 28/76, 6/77, 10/77, 30/77, 6/79).</li> </ul>	

**Table 3.2: Building regulations**

BUILDING REGULATIONS	
<b>Title</b>	<b>Pravilnik za građevinske konstrukcije</b> <b>Eng: Regulations for Building Structures</b>
<b>Timeframe</b>	Entry into force: 2019
<b>Does the document refer to the EU regulatory framework?</b>	Yes
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level
<b>Promoter</b>	Adopted by the Ministry of Construction, Transport and Infrastructure, pursuant to Article 201, paragraph 7, item 1a and 1b of the Planning and Building Act (see Table 3.1). Published in Official Gazette of the Republic of Serbia No. 89/2019 (Amendments 52/2020 and 122/2020).
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
<b>Is the document publicly available?</b> Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://www.paragraf.rs/propisi/pravilnik-za-gradjevine-konstrukcije.html">https://www.paragraf.rs/propisi/pravilnik-za-gradjevine-konstrukcije.html</a> English version: not available



BUILDING REGULATIONS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The document sets out general instructions and basic requirements for building structures and introduces the Eurocodes as mandatory structural design standards in Serbia. The document prescribes technical properties for structural building systems; it sets out rules and standards for design, construction, maintenance, demolition and removal of structures, as well as requirements with respect to building materials and their characteristics. The regulations apply to:</p> <ul style="list-style-type: none"> <li>- construction of new buildings and reconstruction of the existing ones</li> <li>- structural and non-structural building elements</li> <li>- reinforced concrete, steel, composite, timber, masonry, aluminium structures and geotechnical design</li> </ul> <p>The document is accompanied with two attachments:</p> <ul style="list-style-type: none"> <li>- <a href="#">list</a> of standards for design of building structures (European standards SRPS EN 1990, SRPS EN 1991, SRPS EN 1992, SRPS EN 1993, SRPS EN 1994, SRPS EN 1995, SRPS EN 1996, SRPS EN 1997, SRPS EN 19998, SRPS EN 1999)</li> <li>- <a href="#">list</a> of standards for construction and maintenance of building structures</li> </ul> <p>One of the standards, Eurocode 8 (SRPS EN 1998) sets out specific rules with respect to the design of seismic resistant structures (see Table 2.1).</p>	

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>urban planning regulation</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>Urban planning in Serbia is officially regulated by the ‘Planning and Building Act’ (Table 4.1), which provides general guidelines with respect to planning documents and rules for urban (and spatial) planning. More specific regulations regarding the method and procedure for compilation of spatial and urban planning documents are dictated by the document in Table 4.2. This document is published pursuant to the ‘Planning and Building Act’. The Government of the Republic of Serbia has recently issued the document on ‘Sustainable urban development Strategy of the Republic of Serbia until the year 2030’ (Table 4.3). The strategy should help identify and resolve key urban development problems in Serbia and support sustainable economic, social and urban development. The document also examines the strategic plans for protection of cultural heritage in Serbia.</p>

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	<b>Zakon o planiranju i izgradnji</b> <b>Eng: Planning and Building Act (Law on Planning and Construction in Serbia)</b>
Timeframe	Entry into force: 2009
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Serbia. Published in Official Gazette of the Republic of Serbia No. 72/2009 (Amendments No. 81/2009, 64/2010, 24/2011, 121/2012, 42/2013, 50/2013, 98/2013, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019, 9/2020)

## ADRISEISMIC



URBAN PLANNING REGULATION	
Target groups	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://www.paragraf.rs/propisi/zakon_o_plani_ranju_i_izgradnji.html">https://www.paragraf.rs/propisi/zakon_o_plani_ranju_i_izgradnji.html</a>  English version: <a href="https://www.paragraf.rs/propisi/planning-and-building-act-serbia.html">https://www.paragraf.rs/propisi/planning-and-building-act-serbia.html</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period (construction of buildings)
Does the document specifically deal with cultural heritage?	Yes, cultural heritage is dealt with in several articles of the law.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)  <u>The Act governs the following:</u> - methods and conditions for spatial planning, land development and land use, and construction of facilities; -supervision and inspection with respect to the application of the provisions of this Act -other issues of importance for land development, land use and construction of facilities.  Section 2. of this Act deals specifically with spatial an urban planning. Subsections provide more details about compilation, harmonization and adoption of planning documents; responsibilities of spatial planners and urbanists; integral parts of planning documents; means of funding; availability, publishing and implementation of planning documents; urbanistic-technical documents.  Section 2. lists the following documents that pertain to spatial and urban planning: <ul style="list-style-type: none"> <li>- Planning Documents               <ul style="list-style-type: none"> <li>o Spatial plans                   <ul style="list-style-type: none"> <li>▪ Spatial plan of the Republic of Serbia</li> <li>▪ Regional spatial plan</li> <li>▪ Spatial plan of a local government unit</li> <li>▪ Spatial plan of a special purpose region</li> </ul> </li> <li>o Urban plans</li> </ul> </li> </ul>	

URBAN PLANNING REGULATION	
	<ul style="list-style-type: none"> <li>▪ General urban plan</li> <li>▪ General zoning plan</li> <li>▪ Detailed zoning plan</li> </ul> <ul style="list-style-type: none"> <li>- Documents for the Implementation of Spatial Plans</li> <li>- Urban Technical Plans (architecture and urban design)</li> <li>- Sustainable Urban Development Strategy of the Republic of Serbia</li> <li>- National Architecture Strategy</li> </ul>

**Table 4.2: Urban planning regulation**

URBAN PLANNING REGULATION	
<b>Title</b>	<p><b>Pravilnik o sadržini, načinu i postupku izrade dokumenata prostornog i urbanističkog planiranja</b></p> <p><b>Eng: Regulations on the content, methods and procedures for compilation of spatial and urban planning documents</b></p>
<b>Timeframe</b>	Entry into force: 2019
<b>Does the document refer to the EU regulatory framework?</b>	No
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level
<b>Promoter</b>	Adopted by the Ministry of Construction, Transport and Infrastructure, pursuant to Article 201, paragraph 7, item 5 of the Planning and Building Act (see Table 4.1). Published in Official Gazette of the Republic of Serbia No. 32/2019
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
<b>Is the document publicly available?</b> Please provide references (e.g. web link...), if possible.	<p>Serbian version:</p> <p><a href="http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/ministarstva/pravilnik/2019/32/2/reg/">http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/ministarstva/pravilnik/2019/32/2/reg/</a></p> <p>English version: Not available</p>

URBAN PLANNING REGULATION	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	Yes, cultural heritage is dealt with in several articles of the Rulebook.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) The document prescribes, in detail, the rules on the content, method and procedure for compilation of spatial and urban planning documents.	

**Table 4.3: Urban planning regulation**

URBAN PLANNING REGULATION	
<b>Title</b>	<b>Strategija održivog urbanog razvoja Republike Srbije do 2030. Godine</b> <b>Eng: Sustainable urban development Strategy of the Republic of Serbia until 2030</b>
<b>Timeframe</b>	Entry into force: 2019
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
<b>Promoter</b>	Adopted by the Government of the Republic of Serbia, pursuant to the Act on the Planning System of the RS (Official Gazette of RS No. 30/2018) and Planning and Building Act (Official Gazette of RS No. 72/09). Published in Official Gazette of the Republic of Serbia No. 47/2019.
<b>Target groups</b>	Designers, civil engineers, relevant national and local bodies, developers (funding agencies), technical supervisors, contractors, general population
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2019/47/1/reg">http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2019/47/1/reg</a>

## ADRISEISMIC



URBAN PLANNING REGULATION	
	English version: /
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This is the first sustainable urban development strategy adopted in the Republic of Serbia in accordance with the needs for urban planning, solutions to the urbanization-related issues, and the capacity of urban settlements that are generators of development activities.</p> <p>This document concerns the following topics:</p> <ul style="list-style-type: none"> <li>- Sustainable economic development – urban economy and finances</li> <li>- Sustainable urban structures and rational land use</li> <li>- Inclusive urban development</li> <li>- Demographic changes and housing</li> <li>- Transport and technical infrastructure</li> <li>- Environment and climate change</li> <li>- Cultural heritage and urban identity</li> </ul> <p>General objectives of strategic urban development in Serbia were summarized as following:</p> <ol style="list-style-type: none"> <li>1. Sustainable economic development</li> <li>2. Urban settlement planning (including cultural heritage)</li> <li>3. Social well-being</li> <li>4. Quality of environment</li> <li>5. Urban development management</li> </ol> <p>Section 6. of this document identifies priority areas of intervention as guidelines for developing local strategies for integrated sustainable urban development. The identified priority areas of intervention will help formulate national programs to support integrated sustainable urban development. Some of the priority areas of intervention are:</p> <ul style="list-style-type: none"> <li>• Industrial/business and commercial zones and brownfield locations;</li> <li>• Illegally built and undeveloped urban sprawls and the degradation of rural areas;</li> <li>• Compromised urban structures, urban matrices, and central urban areas;</li> </ul>	

#### **URBAN PLANNING REGULATION**

- Parts of urban areas with a high degree of social challenges – social inclusion and poverty reduction;
- Settlements or parts of settlements exposed to environmental problems and climate change;
- Areas with cultural and architectural legacy – the key benchmarks of the cultural and historical development of an urban settlement/group of urban settlements.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All regulations that are relevant for the scope of the project were entered. There are special urban planning regulations for major urban centers in Serbia, including Belgrade, Novi Sad, etc.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of <b><i>seismic incentive frameworks</i></b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
With the exception of the documents listed in Table 6.2 and Table 6.4, which include some general guidelines and recommendations with respect to prevention measures, no other seismic incentive frameworks (nor economic incentives and seismic funds) are currently in place in Serbia.

**Table 5.1: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
Title	
<u>Subsection</u>	
Timeframe	
Does the document refer to the EU regulatory framework?	-
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	



SEISMIC INCENTIVE FRAMEWORKS	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

<p>Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?</p> <p>Do you have Earthquake funds?</p>
<p>Serbia did not introduce seismic certificates for buildings (future plans not certain at this time).</p>

<p>Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.</p>
<p>N/A</p>

## 6 Post-earthquake planning

Please, fill in the table below with information regarding **post-earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

Please, add a short description of the situation in the field of **post-earthquake planning** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

The 'Catastrophe Risk Assessment in the Republic of Serbia' is a mandatory document, compiled based on the 'Law on Disaster Risk Reduction and Emergency Management'. This document comprises information on the current level of seismic risk in Serbia, including information on seismic hazard, exposure, and vulnerability. The Law on Reconstruction Following Natural and Other Hazards further defines post-earthquake activities.

The Action Plan for the Implementation of the National Disaster Risk Management Programme is adopted by the Government. It does not have the character of law, rather it represents the documentation based on which the Government makes money investment decisions and regulates the organization of institutions in regard to disaster control and reduction. Every year a report is to be adopted, and the Action plan that currently exists refers to the period from 2017 to 2020.

**Table 6.1: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	Zakon o obnovi nakon elementarne i druge nepogode

POST-EARTHQUAKE PLANNING	
	<b>Eng: Law on Recovery Following Natural and Other Disasters</b>
Subsection	general legislation document relating to civil protection
Timeframe	Entry into force: 31 December 2015
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Serbia. Published in Official Gazette of the Republic of Serbia No. 112/2015.
Target groups	Citizens, business entities
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<p>Serbian version:  <a href="https://www.paragraf.rs/propisi/zakon-obnovi-nakon-elementarne-druge-nepogode.html">https://www.paragraf.rs/propisi/zakon-obnovi-nakon-elementarne-druge-nepogode.html</a></p> <p>English version:  <a href="http://www.obnova.gov.rs/uploads/useruploads/Documents/Zakon_o_obnovi%20nakon%20el%20i%20druge%20nepogode_engl.pdf">http://www.obnova.gov.rs/uploads/useruploads/Documents/Zakon_o_obnovi%20nakon%20el%20i%20druge%20nepogode_engl.pdf</a></p>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This law regulates the procedure for recovery and aid allocation to the citizens and business entities that sustain pecuniary damages due to natural and other disasters. The law sets out aid eligibility requirements and the rules for damage reporting, damage assessment and verification of damage assessment. Public Investment Management Office of the Republic of Serbia is responsible for undertaking actions and implementing measures for aid allocation and recovery, procurement of required goods and services, coordination of the actions of other organizations participating in assistance provision <i>etc.</i></p>	

**Table 6.2: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	<b>Zakon o smanjenju rizika od katastrofa i upravljanja vanrednim situacijama</b> <b>Eng: Law on Disaster Risk Reduction and Emergency Management</b>
Subsection	general legislation document relating to civil protection; organization of earthquake response/rescue; planning (protection and rescue plans, disaster risk assessment)
Timeframe	Entered into force: 21 November 2018
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Serbia. Published in Official Gazette of the Republic of Serbia No. 87/2018.
Target groups	General population, associations, legal entities, local governments, autonomous provinces and the Republic of Serbia
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://www.paragraf.rs/propisi/zakon-o-smanjenju-rizika-od-katastrofa-i-upravljanju-vanrednim-situacijama.html">https://www.paragraf.rs/propisi/zakon-o-smanjenju-rizika-od-katastrofa-i-upravljanju-vanrednim-situacijama.html</a> English version: not available
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes, cultural heritage is dealt with in several articles of the law.

### POST-EARTHQUAKE PLANNING

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

This law regulates disaster risk reduction; preventions and strengthening of the general resilience and readiness of individuals and communities to respond to the consequences of disasters; protection and rescue of people, material, cultural and other goods; rights and duties of citizens, associations, legal entities, local governments, autonomous provinces and the Republic of Serbia; emergency management; functioning of civil protection; early warning systems; alert notification; international cooperation; inspection supervision and other issues of importance for the organization and functioning of disaster risk reduction and emergency management systems.

The system of disaster risk reduction and emergency management is part of the overall national security system. As such, it mostly concerns the implementation of preventive measures, activities related to protection and rescuing of people, goods and environment, and measures of recovery from the consequences of natural disasters.

From the date of entry into force of this document, the Law on Emergency Situations (Official Gazette of the Republic of Serbia, No. 111/2009, 92/2011 and 93/2012) becomes nullified.

**Table 6.3: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Procena rizika od katastrofa u Republici Srbiji</b> <b>Eng: Catastrophe Risk Assessment in the Republic of Serbia</b>
<b>Subsection</b>	Planning (earthquake risk assessment)
<b>Timeframe</b>	Entry into force: 14 March 2019
<b>Does the document refer to the EU regulatory framework?</b>	The document was (to some extent) compiled in accordance with the general EU guidelines that prescribe the content and method of risk assessment.
<b>Level at which the document is used – see Administrative division of your country (Table 1.1)</b>	National level
<b>Promoter</b>	Compilation of the document was coordinated by the Ministry of Internal Affairs (Sector for Emergency Management). The document was adopted by the Government of the Republic of Serbia. Published pursuant to the Article 25, paragraph 2, item 3 of the 'Law on Disaster Risk

POST-EARTHQUAKE PLANNING	
	Reduction and Emergency Management' (Table 6.2).
Target groups	General population, associations, legal entities, local governments, autonomous provinces and the Republic of Serbia
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="http://prezentacije.mup.gov.rs/svs/HTML/licence/Procena%20rizika%20od%20katastrofa%20u%20RS.pdf">http://prezentacije.mup.gov.rs/svs/HTML/licence/Procena%20rizika%20od%20katastrofa%20u%20RS.pdf</a> English version: not available
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake
Does the document specifically deal with cultural heritage?	Yes, cultural heritage is dealt with in several articles of the law.
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>This document identifies all the potential catastrophes in Serbia, as well exposure and cosequences of such catastrophes on the Serbian building stock, people and economy. It contains detailed report on the characteristics of the critical infrastructure in Serbia and provides scenario risk assessment for a number of catastrophes (including earthquakes, erosion, landslides, floods, metereological disasters, epidemics, pandemics, contagious animal diseases, fire, explosions, nuclear disasters, terrorist attacks <i>etc.</i>).</p> <p>Part 2 (section 1) of the document includes report on seismicity, seismic hazard and tectonic settings of Serbia, exposure of residential building stock, seismic vulnerability of different types of buildings (according to EMS-98 scale), and two scenario risk analysis: scenario for the largest instrumentally recorded seismic event in the city of Kragujevac and scenario for the seismic event that had the worst consequences for the municipality of Rudnik.</p>	

**Table 6.4: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	<b>Akcioni plan za sprovođenje Nacionalnog programa upravljanja rizikom od elementarnih nepogoda</b> <b>Eng: Action Plan for the Implementation of the National Disaster Risk Management Programme</b>

POST-EARTHQUAKE PLANNING	
Subsection	Planning (earthquake risk assessment), legislation document relating to civil protection, response and rescue
Timeframe	2017-2020
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Government of the Republic of Serbia
Target groups	General population, associations, legal entities, local governments, autonomous provinces and the Republic of Serbia
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://www.cadri.net/sites/default/files/productsCountry/Serbia-DRR-Plan-Validated.pdf">https://www.cadri.net/sites/default/files/productsCountry/Serbia-DRR-Plan-Validated.pdf</a> English version: <a href="http://seeurban.net/wp-content/uploads/library/Serbia/Action-Plan.pdf">http://seeurban.net/wp-content/uploads/library/Serbia/Action-Plan.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake
Does the document specifically deal with cultural heritage?	No
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>The National programme aims to develop an adequate, long-term disaster risk management system in the Republic of Serbia which would be the basis for cooperation among different institutions, as well as the basis for their joint work on risk reduction and efficient response to disasters. The National Programme, also, represents the general framework for the development of a comprehensive disaster protection programme, as well as for coordination, directing and management over funds and implementation of risk reduction related activities. The Action Plan is fully aligned with the Sendai Framework for Disaster Risk Reduction 2015-2030.</p> <p><u>National Programme consists of six components:</u></p> <ol style="list-style-type: none"> <li>1. Institutional building and development</li> </ol>	

#### POST-EARTHQUAKE PLANNING

2. Identifying and monitoring disaster risks
3. Structural and non-structural risk reduction
4. System for early warning and preparedness
5. Strategies for risk financing
6. Resilient recovery

Action Plan was prompted by the extensive floods that happened in Serbia in 2014 and, as such, it focuses more on floods compared to other disasters (such as earthquakes).

The EU has provided funds for Serbia for civil protection and disaster resilience strengthening by means of the Instrument for Pre-accession Assistance (IPA). This Action applies to the period 2014- 2020 and its objective is to contribute to management in emergency, civil protection and disaster risk resilience in Serbia in line with the EU standards and practice. No much information is available on this project. The related [document](#) does not mention any specific actions related to earthquakes.



## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.
No such information is available for Serbia.

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?
No such information is available for Serbia.

**Table 7.1: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	UNIQA Insurance Agencija G authorised representative
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	Yes, it is necessary to conclude a contract for basic insurance against fire and other hazards
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	Yes, we do not insure properties without a foundation.

## ADRISEISMIC



Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	It is possible, it is important that the building exists. The insurance company is not interested in whether or not the building is legalised. It is important that the building is at least 80% complete.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>It is possible to take out optional earthquake insurance for one apartment only.</p> <p>As far as common rooms are concerned, it is the obligation of the tenants' assembly to do (not only common rooms are provided, but also the roof, foundation, facade, common installations, etc.)</p> <p>The optional earthquake insurance premium in the event of an earthquake does not depend on the level of the apartment, but on the surface of the apartment.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Additional earthquake insurance for buildings and things (movable property).
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	<p>No, it does not depend for several reasons, such as:</p> <ul style="list-style-type: none"> <li>- Low insurance prices</li> <li>- Due to the simplification of insurance calculation</li> </ul>
Does the optional earthquake insurance premium depend on the property area?	Yes.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes, in accordance with the classification of seismic areas.
To what extent is the damage recovered?	The damage is compensated in full, reduced by the percentage of the insured's share in the damage (franchise)
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	It does not.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect	Both direct and indirect seismic damage is covered.

### ADRISEISMIC



damage (e.g. fire damage, caused by an earthquake)?	In practice, it is more common that indirect damages are higher in value and more frequent.
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	It could, given that domestic law stipulates that all insurance companies must have over 100% of the capital in relation to liabilities (related to property insurance) and as far as the assets of persons are concerned, over 200% of the capital is covered in relation to liabilities.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>Building area 102 m<sup>2</sup></p> <p>Insured amount: 80,000 Euros</p> <p>Price of annual insurance without earthquake insurance: 111.86 Euros</p> <p>Price of annual insurance with additional earthquake insurance: 121.94 Euros</p>
Additional information regarding optional earthquake insurance	/

**Table 7.2: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
<b>Insurance company</b>	<b>DDOR Insurance</b> <b>Sector for Property Insurance</b>
<b>CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE</b>	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	<p>Yes, it is necessary to conclude a basic insurance contract first, which includes insurance protection against the following risks (basic risks):</p> <ul style="list-style-type: none"> <li>- Fire and lightning strike</li> <li>- An explosion</li> <li>- Storm</li> <li>- Hail</li> <li>- Impact of motor vehicle, etc.</li> <li>- Flight crash</li> <li>- Manifestation and demonstration</li> </ul>
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	No

## ADRISEISMIC



Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	It is possible.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>It is possible to take out optional earthquake insurance for one apartment only.</p> <p>Common rooms are provided by the assembly of tenants (bicycle storage, common attic, basement, etc.) as well as roof, elevator, etc.</p> <p>The premium for optional insurance in case of an earthquake does not depend on the level of the apartment, but on its surface.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	<p>Nowhere in our offer does the word earthquake explicitly appear, but landslides, subsidence (General conditions for property insurance Article 12 and Article 13).</p> <p>In addition to the building, it is also possible to insure things (movable property).</p>
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	<p>It does not.</p> <p>It depends on the assessment of the authorized expert who goes to the field.</p>
Does the optional earthquake insurance premium depend on the property area?	Yes.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	<p>Unfortunately no.</p> <p>Only the building value (not even the market value) is taken into consideration.</p>
To what extent is the damage recovered?	To the extent assessed by the certified expert (civil engineer by profession).
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	No.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	Only what is insured is covered (depending on the chosen insurance package).

Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	We are not aware.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	Area 100 m <sup>2</sup> Earthquake insurance: approx. 4,000 RSD
Additional information regarding optional earthquake insurance	/

**Table 7.3: Insurance against earthquakes – optional insurance.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
<b>Insurance company</b>	<b>Generali Insurance</b>
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	<p>Yes, it is necessary to conclude a basic insurance contract first - it can be concluded by a natural person and be related to a residential building, but it can also be concluded by a legal entity. Basic insurance includes insurance against the following risks (basic risks):</p> <ul style="list-style-type: none"> <li>- Fire, lightning strike, explosion</li> <li>- Impact of the motor vehicle and mobile working machine, aircraft crash</li> <li>- Manifestation and demonstration</li> </ul> <p>Additional insurance (additional coverage):</p> <ul style="list-style-type: none"> <li>- Storm, hail, floods, torrents, water spills from installations, <b>earthquakes</b>, landslides, burglary or robbery, broken glass, etc.</li> </ul> <p>Some banks require mandatory earthquake insurance for clients of legal entities that buy or mortgage a business facility through bank loans. First of all, we act as an advisor and suggest to clients for which risks they can be insured. For clients who want to insure the house, we go out on the field, while for clients who insure the apartment, we do not go out.</p>
Is construction of the property in accordance with seismic codes one of compulsory conditions for	No.

## ADRISEISMIC



the possibility of taking out optional earthquake insurance?	
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	It is possible.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>It is possible to take out optional earthquake insurance for one apartment only.</p> <p>Common areas are insured by the tenants' assembly. Common rooms include: foundations, floors, facades, corridors, stairs, roof, installations, etc. In these cases earthquake insurance is also contracted as optional insurance and contracts are concluded in accordance with the GOS ZI Clause: Earthquake.</p> <p>The optional earthquake insurance premium does not depend on the level of the apartment, but on its surface.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Additional earthquake insurance for owners of apartments, houses, business and production facilities (owners of SMEs) and common areas.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	No. It depends on the assessment of the authorized expert who goes to the field to perform the assessment. In case of insuring houses, business and production facilities, it is mandatory to go out on the field. It is a rare case for apartments.
Does the optional earthquake insurance premium depend on the property area?	Yes.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Mostly yes.
To what extent is the damage recovered?	To the extent assessed by the certified expert (civil engineer by profession).
Does optional earthquake insurance (premium) depend on the intensity of an earthquake?	No.

## ADRISEISMIC



How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	Only what is insured is covered (depending on the chosen insurance package).
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	/
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	/
Additional information regarding optional earthquake insurance	/

### 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.4: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
<b>Title</b>	<b>Zakon o osiguranju</b> <b>Eng: Insurance Law</b>
Timeframe	2014
Does the document refer to the EU regulatory framework?	/
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Serbia
Target groups	Insurance companies, citizens
Is the document publicly available? Please provide references (e.g. web link...), if possible.	Serbian version: <a href="https://www.paragraf.rs/propisi_download/zakon_o_osiguranju-2014.pdf">https://www.paragraf.rs/propisi_download/zakon_o_osiguranju-2014.pdf</a>  English version: <a href="https://www.nbs.rs/internet/english/20/laws/law_insurance_139_2014.pdf">https://www.nbs.rs/internet/english/20/laws/law_insurance_139_2014.pdf</a>



#### INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION

Does the document refer to pre-earthquake period, post-earthquake period or both of them?	n/a
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This law regulates the pursuit of insurance business in the Republic of Serbia (hereinafter: the Republic), i.e. conditions for the establishment and operation of insurance and reinsurance undertakings, carrying on insurance and reinsurance brokerage, carrying on insurance agency, supervision of insurance activities, protection of the rights of the insured, policyholders, insurance beneficiaries and injured parties, as well as the pursuit of insurance activities in the Republic for the persons from the European Union member states and foreign countries.</p> <p>This is a general law and does not deal with the insurance against earthquakes in particular. It does mention the following in Article 7, paragraph 6:</p> <p>By way of derogation from paragraphs 3 and 4 hereof, an insurance undertaking may reinsure in the Republic and/or abroad the full amount of risk under property insurance against natural disasters (hail, frost and other hazards and/or natural disasters such as <b>earthquakes</b>, flooding and drought), as well as the risk under insurance against financial losses due to bad weather.</p>	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

All documents relevant for the scope of the project have been entered (to the best of our knowledge).



## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Insert topic**

TOPIC	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

## 2nd stage SURVEY – EXISTING NORMS AND INCENTIVES IN SLOVENIA (WP T1, Activity T1.1)

The 2nd stage survey will help project partners within ADRISEISMIC project to get additional information on current national and/or local planning and regulatory instruments and approaches to seismic norms and incentives, seismic vulnerability standards as well as related financial and economic incentives in each involved Partner State.

The 2nd stage survey proceeds from the 1<sup>st</sup> stage survey. The word documents, provided by each PP country, have been processed by ZAG. For each PP country, the submitted document (of the 1<sup>st</sup> stage survey) remains the same but has some changes/updates.

The 2nd stage survey is prepared in a way that some of the information, provided by each project partner, needs further explanation (please, see comments in track changes by ZAG) and it varies between PP countries.

For every PP country, there is a new (red coloured) table at the beginning of each topic in order that each project partner country adds a short description of the situation regarding this topic in his PP country. This information will help us for the upcoming activities (report on collected norms and incentives, comparison matrix).

Also, there is additional (red coloured) table at the end of each topic, intended to your comment on the number of documents entered for your country.

During the review of the received material from the 1st stage survey, we found out that the topics were properly selected, so we will keep them for the 2nd stage survey. There is only one novelty (change). As mentioned at one of the meetings by several PPs, there have been some differences in the interpretation of the topic "**Seismic incentive frameworks**". We have tried to arrange these matters in a way that the interpretation is consistent for all PPs. The documents, which have so far been included in the Seismic incentive frameworks, contained both, incentives (pre-earthquake, prevention measures) as well as actions/plans in case of earthquakes. In order to avoid confusion,



the chapter “***Seismic incentive frameworks***” is now intended only for incentives (pre-earthquake, prevention measures, e.g. documents in the field of economic incentives, financial funds...). All documents, prepared in order to respond better in the event of an earthquake (e.g. civil protection plans...) should be now classified in new topic “***Post earthquake planning***”. ZAG has already moved some documents collected in the 1st stage survey from *Seismic incentive frameworks* to *Post earthquake planning*. **Please, check if these changes were done appropriately** for your country.

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**Final instructions for completing the 2nd stage survey:**

- please review all of our comments in track changes regarding your information from the 1st stage survey and try to respond to them (by adding missing information/explanations...)
- please, answer the questions in additional tables/rows, added by ZAG in the 2nd stage survey – all marked red and
- in case any additional documents regarding seismic norms and incentives have been found after you filled out the 1st stage survey, please fill in additional tables.

## 1 Basic information

Please, fill in the table below with information relating to your country. The information will facilitate further analysis, assessment and systematization of the collected material.

**Table 1.1: Basic information about the country.**

BASIC INFORMATION						
<b>Project partner</b>			<b>PP6 – National Building and Civil Engineering Institute (ZAG)</b>			
Country			Slovenia			
Country area			20 273 km <sup>2</sup>			
Population			2,094,060			
Administrative division of the country Please, indicate existing country levels (e.g.: national, country, regional, province, local level) and their corresponding number in the following order from the highest to the lowest level.			<ul style="list-style-type: none"> <li>- National level: Slovenia</li> <li>- Regional level: 12 regions</li> <li>- Local level: 212 municipalities</li> </ul>			
<b>Recent earthquakes</b> Please, provide information on few most significant earthquakes that have occurred in your country or had an important impact on your country in about the last 500 years. If available, please insert GPS location of the earthquake epicentre.						
N	Year	Location (GPS)	Magnitude	Max. intensity	Fatalities	Comments (earthquake consequences...)
1	1511	Idrija - Cerklje	6.8	X	12000-15000	
2	1628	Brestanica - Krško	5.0	VIII		
3	1690	Villach (AUT)	5.9	VIII*		
4	1699	Metlika	5.0	VIII		
5	1857	Davča	5.4	VII-VIII		
6	1877	Laško	5.1	VII		
7	1880	Zagreb (CRO)	6.2	VII*		
8	1895	Ljubljana (46.1°N 14.5°E)	6.1	VIII-IX	7	The city began renovating and upgrading on the basis of a new regulation plan; new bridges,



**BASIC INFORMATION**

							monuments, parks, telephones, sewage; reform of city administration, health, education, tourism.
9	1897	Ljubljana	5.0	VII			
10	1917	Brežice	5.7	VIII			
11	1926	Cerknica	5.6	VII-VIII			
12	1956	Ilirska Bistrica	5.1	VII			
13	1963	Skopje (N MK) (42.16°N 22.66°E)	6.1				Earthquake consequences: the first Yugoslav seismic codes in 1964
14	1976	Gemona (ITA)	6.5	VIII-IX*	0**		
15	1976	Gemona (ITA)	5.9	VIII*	0**		
16	1998	Posočje	5.7	VII-VIII	0		Post-earthquake Reconstruction of Structures and Development Promotion in Posočje Act (adopted in 1998).
17	2004	Posočje	4,9	VI-VII	1		

\* max. intensity in Slovenia, the epicenter of the earthquake was outside the Slovenian border

\*\* fatalities in Slovenia, the epicenter of the earthquake was outside the Slovenian border

## 2 Seismic norms

Please, fill in the table below with information regarding **seismic norms**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>seismic norms</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>The first seismic regulations for the territory of Slovenia were issued after the earthquake in Skopje, in 1963. This was followed by the Yugoslav legislation in 1964 (Pravilnik o privremenim tehničkim propisima za građenje u seizmičkim područjima, 1964). At the beginning of the 1980s, after the Montenegrin earthquake (1979), a new Regulation (Pravilnik o tehničkim normativima za izgradnju objekata visokogradnje u seizmičkim područjima, 1981) entered into force. Today, the design and construction of structures are regulated by European standards - Eurocodes, which came into force in Slovenia in 2005. In seismically active areas, the requirements of Eurocode 8-1 apply: Design of structures for earthquake resistance: General rules, seismic load and rules for buildings (SIST EN 1998-1: 2005). Design according to Eurocode 8 is based on the fact that the structure must be designed and constructed in such a way that it will withstand the design earthquake without being partially or completely destroyed.</p> <p>In the analysis of existing masonry buildings, we also occasionally referred to the Italian standard NTC 2008.</p>

**Table 2.1: Seismic norms**

SEISMIC NORMS	
Title	<p><b>Eurocode 8: EN 1998-1 (2004)</b></p> <p><b>6 National Annexes:</b></p> <ul style="list-style-type: none"> <li>- <b>SIST EN 1998-1 (2006)</b></li> <li>- <b>SIST EN 1998-2 (2007)</b></li> <li>- <b>SIST EN 1998-3 (2007)</b></li> <li>- <b>SIST EN 1998-4 (2007)</b></li> <li>- <b>SIST EN 1998-5 (2006)</b></li> <li>- <b>SIST EN 1998-6 (2007)</b></li> </ul>



SEISMIC NORMS	
Subsection: <ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>	<ul style="list-style-type: none"> <li>- design of new structures</li> <li>- assessment of existing structures</li> <li>- retrofitting structures</li> </ul>
Timeframe	2008 →
Does the document refer to the EU regulatory framework?	Eurocode 8: yes 6 National Annexes: no
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Eurocode 8: European Committee for Standardization (CEN) 6 National Annexes: Slovenian Institute for Standardization
Target groups	Civil engineers
Is the document publicly available? Please provide references (e.g. web link...), if possible.	/
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No <i>"Although the provisions of this Standard are applicable to all categories of buildings, the seismic assessment and retrofitting of <u>monuments and historical buildings</u> often requires different types of provisions and approaches depending on the nature of the monuments."</i>
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	
<p>In the eurocode series of European standards (EN) related to construction, Eurocode 8 (EC8): Design of structures for earthquake resistance describes how to design structures in seismic zone, using the limit state design philosophy. It was approved by the European Committee for Standardization (CEN) on 23 April 2004. Its purpose is to ensure that in the event of earthquakes: human lives are protected, damage is limited, structures important for civil protection remain operational.</p> <p>The random nature of the seismic events and the limited resources available to counter their effects are such as to make the attainment of these goals only partially possible and only measurable in probabilistic terms. The extent of the protection that can be provided to different categories of buildings, which is only measurable in probabilistic terms, is a matter of optimal allocation of resources and is therefore</p>	

### SEISMIC NORMS

expected to vary from country to country, depending on the relative importance of the seismic risk with respect to risks of other origin and on the global economic resources.

Special structures, such as nuclear power plants, offshore structures and large dams, are beyond the scope of EN 1998. EN 1998 contains only those provisions that, in addition to the provisions of the other relevant Eurocodes, must be observed for the design of structures in seismic regions. It complements in this respect the other EN Eurocodes.

Eurocode 8 comprises several documents, grouped in six parts numbered from EN 1998-1 to EN 1998-6.

Part 1: General rules, seismic actions and rules for buildings

Part 2: Bridges

Part 3: Assessment and retrofitting of buildings

Part 4: Silos, tanks and pipelines

Part 5: Foundations, retaining structures and geotechnical aspects

Part 6: Towers, masts and chimneys

6 National (Slovenian) Annexes are the original national standardization documents that contain information on parameters which are left open in Eurocodes for national choice and known as Nationally Determined Parameters (NDP). They are used in the design of buildings and civil engineering works to be constructed in the country concerned. There are national guidelines for the application of standards in these annexes.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We have entered all currently existing documents in this field in our country.



### 3 Building regulations

Please, fill in the table below with information regarding **building regulations**. Please, copy the table for each entered document.

Please, add a short description of the situation in the field of <b>building regulations</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
In Slovenia, there is only one existing document regarding the building regulations. It is called “Building Law” and is valid on the national level. The seismic issue is addressed in the document in Act 16, which deals with mechanical resistance and stability of structures.

**Table 3.1: Building regulations**

BUILDING REGULATIONS	
Title	Gradbeni zakon Eng: Building Law
Timeframe	Date of entry into force: 17. 11 2017 Date of application: 1. 6. 2018
Does the document refer to the EU regulatory framework?	No.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Slovenia
Target groups	Civil engineers
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO7108">http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO7108</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period (construction of buildings)
Does the document specifically deal with cultural heritage?	Yes, it is mentioned in several articles of the law.

### BUILDING REGULATIONS

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

Building Law regulates the conditions for the construction of facilities and other issues related to the construction of facilities.

The law sets out essential requirements for structures:

Act 16: mechanical resistance and stability:

(1) Facilities must be mechanically resistant and stable during construction and use, taking into account the impacts to which they will be exposed. These impacts must not lead to the collapse of the whole or part of the building, deformations and oscillations greater than permissible, damage to other parts of the building, wiring and installed equipment due to major deformations of the load-bearing structure, except in earthquakes with low probability of occurrence.

(2) Permanent, variable and accidental influences must be taken into account when ensuring mechanical resistance and stability. Persistent impacts are in particular impacts due to gravity, ground and water pressure, and deformations that occur during construction. There are variable effects in particular Useful load, snow and ice load, wind load, water and wave load, heat and freezing, crane impact, dynamic machine impact, construction load and corrosion. Accidental impacts include in particular impacts, explosions, earthquakes and fire impacts.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We have entered all currently existing documents in this field in our country.

## 4 Urban planning regulation

Please, fill in the table below with information regarding **urban planning regulation**. Please, copy the table for each entered document.

<p>Please, add a short description of the situation in the field of <b>urban planning regulation</b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters</p>
<p>In Slovenia, the Spatial Planning Act is in force in the field of urban planning. In this field also the manual Regulatory Elements is currently in force. In the manual, <u>earthquake</u> is mentioned as one of the health, safety, sanitary and technical aspects that define the purpose of determining deviations.</p>

**Table 4.1: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	Zakon o urejanju prostora (ZUreP-2) (Eng.: Spatial Planning Act (ZUreP-2))
Timeframe	2017 →
Does the document refer to the EU regulatory framework?	Yes
Level at which the document is used – see Administrative division of your country (Table 1.1)	National
Promoter	National Assembly of the Republic of Slovenia
Target groups	Municipalities and local authorities in general. Also individual regional development or construction plans, within the boundaries of the Municipality; architects
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO7341">http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO7341</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	both
Does the document specifically deal with cultural heritage?	yes

URBAN PLANNING REGULATION
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>This Act sets out the objectives, principles and rules of spatial planning, participants working in this field, types of spatial acts, their content and interrelationships, procedures for their preparation, adoption and implementation, and the joint planning and permitting procedure. It also determines spatial measures, instruments and measures of land policy and regulates the monitoring of the situation in space, the operation of the spatial information system and the issuance of certificates in the field of spatial planning.</p> <p>The purpose of spatial planning is to achieve sustainable spatial development by comprehensively addressing, coordinating and managing its social, environmental and economic aspects.</p> <p>The document does not specifically deal with the reduction of seismic vulnerability.</p>

**Table 4.2: Urban planning regulation**

URBAN PLANNING REGULATION	
Title	Regulacijski elementi Eng: Regulatory elements
Timeframe	January 2020
Does the document refer to the EU regulatory framework?	No.
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Republic of Slovenia, Ministry of the Environment and Spatial Planning
Target groups	Municipal urban planners, designers, mayors, administrative workers in the field of spatial planning and spatial planners
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.gov.si/assets/ministrstva/MOP/Dokumenti/Prostorski-red/regulacijski_elementi.pdf">https://www.gov.si/assets/ministrstva/MOP/Dokumenti/Prostorski-red/regulacijski_elementi.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre-earthquake period
Does the document specifically deal with cultural heritage?	Yes, but not in connection with seismic vulnerability

### URBAN PLANNING REGULATION

Description of the document/incentive (explain how does it affect seismic vulnerability)  
(max 2000 characters)

The manual "Regulatory elements" deals with the location of buildings, deviations and basic regulation elements, regulation line, construction line, street construction boundary and courtyard construction boundary, and regulation of the heights of the constructed structure.

The manual emphasizes the various aspects that need to be taken into account, as well as the technical, functional and ambient principle of placing control elements in space.

In the manual, earthquake is mentioned as one of the health, safety, sanitary and technical aspects that define the purpose of determining deviations.

The document was issued as part of the preparation of the new National Spatial Order (DPR), which according to ZUreP-2 (or ZUreP-3, which is currently being adopted) will replace the currently valid Spatial Order of Slovenia. The document has a recommended weight, but the MESP (at least as planned) will include certain content as a minimum standard in the DPR.

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

We have entered all currently existing documents in this field in our country.

## 5 Seismic incentive frameworks

Please, fill in the table below with information regarding **seismic incentive frameworks**. Please, copy the table for each entered document.

The topic includes all incentives related to earthquake, which were adopted at national/regional/local level in order to reduce seismic vulnerability (pre-earthquake, prevention measures, for example seismic funds etc.).

Please, add a short description of the situation in the field of <b><i>seismic incentive frameworks</i></b> in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters
In Slovenia, there are no existing financial or economic incentives for the purpose of reducing seismic vulnerability of built environment. In an indirect sense, an incentive is represented by the POTROG project. Within the latter, an application for damage assessment of buildings, intended for the general public, has been developed.

**Table 5.1: Seismic incentive frameworks.**

SEISMIC INCENTIVE FRAMEWORKS	
Title	Aplikacije POTROG POTROG applications
<u>Subsection</u>	Raising awareness
Timeframe	2013 →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief
Target groups	Municipality, Civil Protection, property owners...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://potrog2.vokas.si/">http://potrog2.vokas.si/</a>



SEISMIC INCENTIVE FRAMEWORKS	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	No
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>POTROG applications were developed as part of the POTROG, POTROG 2, POTROG 3 and POTROG 4 projects, funded by the Ministry of Defense, the Administration of the Republic of Slovenia for Civil Protection and Disaster Relief - ACPDR. They were developed to provide a tool for rapid response in the event of an earthquake. <a href="http://potrog2.vokas.si/OceniSvojoStavbo">http://potrog2.vokas.si/OceniSvojoStavbo</a></p> <p>The applications use data from various sources and simplifications, which are the default on the basis of developed expert bases.</p> <p>Applications POTROG:</p> <ul style="list-style-type: none"> <li>- Evaluate your building</li> <li>- Earthquake assessment</li> <li>- Base of individually rated buildings</li> <li>- Occupation of buildings</li> <li>- Road transport analysis</li> <li>- Assessment of building damage and usefulness</li> </ul>	

<p>Has your country introduced / intends to introduce seismic certificates (similar to energy performance certificate) for buildings?</p> <p>Do you have Earthquake funds?</p>
<p>Slovenia has not yet introduced seismic certificates for real estate. This topic has been proposed by several earthquake experts. It is worth mentioning that recently this type of certificates has been the subject of discussions among experts in the field of seismic issues.</p>

<p>Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.</p>
<p>We have entered all currently existing documents in this field in our country.</p>

## 6 Post-earthquake planning

Please, fill in the table below with information regarding **post-earthquake planning**. Please, copy the table for each entered document.

The topic can be divided into the following **subsections**:

- general legislation documents relating to civil protection,
- organization of earthquake response/rescue,
- training programs for the earthquake (earthquake emergency search and rescue, professional firefighters, command-and-control, members of civil protection),
- planning (national/local protection and rescue plans, earthquake hazard assessments, earthquake risk assessments, earthquake risk management capability assessments...),
- tools (computer applications...),
- action plans (earthquake exercise plans...) and
- other.

Please, add a short description of the situation in the field of **post-earthquake planning** in your country (e.g. do you have many different documents, are the documents defined at different levels (national/regional/local). The description will help us in the upcoming activities (Report, Comparison matrix) – max. 1000 characters

Many documents of various forms and priority exist within the post earthquake planning in Slovenia. They describe different subtopics: general legislation relating to civil protection, organization of response/rescue and planning. The documents deal with preparation as well as emergency response and also short term rehabilitation on national, regional and local level.

**Table 6.1: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	<p><b>Zakon o varstvu pred naravnimi in drugimi nesrečami (ZVNDN) (Uradni list RS, št. 51/06 – uradno prečiščeno besedilo, 97/10 in 21/18 – ZNOrg)</b></p> <p><b>Eng: Protection Against Natural and Other Disasters Act</b></p>
<u>Subsection</u>	General legislation documents relating to civil protection
Timeframe	1 <sup>st</sup> version: Oct 1994





POST-EARTHQUAKE PLANNING	
	Last version: Jan 2019 →
Does the document refer to the EU regulatory framework?	<p>Yes - This Act transposes the following European Community directives into the legal order of the Republic of Slovenia:</p> <ul style="list-style-type: none"> <li>- Council Directive 89/391/EGS</li> <li>- Council Directive 89/618/EURATOM</li> <li>- Council Directive 96/29/EURATOM</li> <li>- Council Directive 96/82/ES</li> </ul>
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Slovenia
Target groups	Government, Ministries, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO364">http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO364</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (discussed in articles: 1, 7, 8, 36, 39, 51, 59, 64, 69, 105, 119).
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>(1) This Act regulates the protection of people, animals, property, <b>cultural heritage</b> and the environment <b>against natural and other disasters</b> (hereinafter: protection against natural and other disasters).</p> <p>(2) The aim of protection against natural and other disasters is to reduce the number of accidents and to prevent or reduce the number of victims and other consequences of such disasters.</p> <p>(3) The state, municipalities and other self-governing local communities (hereinafter: local communities) shall organize protection against natural and other disasters as a unified and comprehensive system in the country.</p> <p>(4) The protection system referred to in the preceding paragraph shall include programming, planning, organization, implementation, supervision, financing of measures and activities for protection against natural and other disasters.</p> <p>The Act deals with “earthquake” in the context of the interpretation of natural disasters.</p>	

**Table 6.2: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Resolucija o nacionalnem programu varstva pred naravnimi in drugimi nesrečami v letih od 2016 do 2022 (Uradni list RS, št. 75/16)</b> <b>Eng: Resolution on the National Programme for Protection against Natural and Other Disasters 2016-2022</b>
<u>Subsection</u>	General legislation documents relating to civil protection
Timeframe	2016-2022
Does the document refer to the EU regulatory framework?	<p>Yes - The program is in line with Decision no. 1313/2013 / EU of the European Parliament and of the Council of 17 December 2013 on a Union civil protection mechanism aimed at strengthening cooperation between Member States in the protection and safeguarding of the population, property and the environment, including the cultural heritage of natural and other disasters and to increase the coherence and effectiveness of international rescue interventions.</p> <p>The program is based on the Resolution on the National Security Strategy of the Republic of Slovenia (Official Gazette of the Republic of Slovenia, No. 27/10), with which the state defines guidelines for effective protection of sovereignty, independence, territorial integrity, preservation of national identity, culture and identity of the Slovenian nation and other values. ensuring a lasting balance in nature and society and the personal and property security of the population.</p>
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Slovenia
Target groups	Government, Ministries, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available?	<a href="http://www.pisrs.si/Pis.web/pregledPredpisa?id=RESO116">http://www.pisrs.si/Pis.web/pregledPredpisa?id=RESO116</a>

POST-EARTHQUAKE PLANNING	
Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (discussed in sections: 1, 2.2, 7, 9.1).
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The National Program for Protection against Natural and Other Disasters takes into account all dangers of natural and other disasters that endanger people, animals, property, <b>cultural heritage</b> and the environment. It also takes into account natural and other conditions that affect disasters and protection against them, as well as human and material resources that can be used to manage hazards and protect those at risk. The program pursues the general goal of protection against natural and other disasters, which is: to reduce the number of disasters and to prevent or mitigate their consequences in order to make life safer and of better quality.</p> <p>Reducing seismic vulnerability is addressed within:</p> <ul style="list-style-type: none"> <li>- preventive measures in the renovation of construction facilities that significantly increase seismic resistance,</li> <li>- seismic risk assessments, protection and rescue plans</li> <li>- description of previous research and development work (POTROG application...)</li> <li>- objectives for protection against natural and other disasters (increase of seismic monitoring networks)</li> <li>- preparation of a new seismic hazard map of the Republic of Slovenia for the design of seismic-resistant structures</li> <li>- development of a strategy and operational program for planned and continuous reduction of seismic risk of construction works</li> <li>- civil protection capacity development: technical earthquake rescue</li> <li>- adoption and implementation of the program of earthquake rehabilitation of residential and important public buildings of education, childcare, care of special groups of the population, health care and other public activities, industrial and infrastructural facilities.</li> </ul>	

**Table 6.3: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Uredba o metodologiji za ocenjevanje škode (Uradni list RS, št. 67/03, 79/04, 33/05, 81/06 in 68/08)</b>

POST-EARTHQUAKE PLANNING	
	<b>Eng: Decree on the methodology for damage assessment</b>
<u>Subsection</u>	General legislation documents relating to civil protection
Timeframe	July 2003 →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	National Assembly of the Republic of Slovenia
Target groups	Government, Ministries, Civil Protection, Rescue Units, NGOs, municipalities, property owners...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED2969">http://www.pisrs.si/Pis.web/pregledPredpisa?id=URED2969</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (however, it is only mentioned in article: 2)
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) This Regulation lays down a methodology for identifying, assessing and documenting damage and other consequences caused by natural and other disasters such as <b>earthquakes</b> , landslides, floods, landslides or avalanches, high snow, strong winds, sleet, frost, drought, storm, hail and industrial disaster. The damage assessed according to this methodology is the basis for the preparation of proposals for the elimination of the consequences of disasters and the direction of preparations for protection against natural and other disasters.	

**Table 6.4: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Uredba o organiziranju, opremljanju in usposabljanju sil za zaščito, reševanje in pomoč</b> <b>Eng. Decree on the Organization Equipment and Training of Protection and Aid Forces</b>

POST-EARTHQUAKE PLANNING	
Subsection	Organization of earthquake response/rescue
Timeframe	Oct 2007 →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief – Branch in Ljubljana
Target groups	Government, Ministries, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://pisrs.si/Pis.web/pregledPredpisa?id=URE D3994">http://pisrs.si/Pis.web/pregledPredpisa?id=URE D3994</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (discussed in Article 27)
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The Regulation regulates the criteria for the organization, equipment and training of Civil Protection, fire brigades and other forces for protection, rescue and assistance in the event of natural and other disasters.</p> <p>Reducing seismic vulnerability is addressed within:</p> <ul style="list-style-type: none"> <li>- organization of technical rescue units in the seismic prone municipalities,</li> <li>- information and communication support of the Civil Protection Headquarters after the event of an earthquake,</li> <li>- establishment of commissions for inventory and assessment of damage to buildings in earthquakes and other disasters in which a large number of buildings are damaged.</li> </ul>	

**Table 6.5: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
Title	Državni načrt zaščite in reševanja ob potresu

POST-EARTHQUAKE PLANNING	
	<b>National plan for civil protection and disaster relief in case of earthquake</b>
<u>Subsection</u>	Planning
Timeframe	Jan 2020 (v3.1) →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	National level
Promoter	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief
Target groups	Government, Ministries, Civil Protection, Rescue Units, NGOs, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.sos112.si/slo/tdocs/potres_drzavni_nacrt.pdf">http://www.sos112.si/slo/tdocs/potres_drzavni_nacrt.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (discussed in chapters 7.1.14, 8.1.2 and 8.1.5).
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The document presents Slovenian National plan for civil protection and disaster relief in case of earthquake and is obligatory by Slovenian law. Its first version was created in 2003 in collaboration with Administration of the Republic of Slovenia for Civil Protection and Disaster Relief and Ministry of Defence of the Republic of Slovenia.</p> <p>The contents of the document are divided into the following chapters:</p> <ul style="list-style-type: none"> <li>- general about earthquake,</li> <li>- planning,</li> <li>- implementation of protection, disaster relief and assistance,</li> <li>- forces and resources to implement the plan,</li> <li>- observation, notification and alarm,</li> <li>- activation of forces and assets,</li> <li>- management and guidance,</li> <li>- protection and disaster relief tasks,</li> </ul>	

POST-EARTHQUAKE PLANNING
<ul style="list-style-type: none"> <li>- personal and mutual protection and</li> <li>- damage assessment.</li> </ul> <p>The document forms the basis for related (obligatory) documents at lower national levels.</p>

**Table 6.6: Post-earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Regijski načrt zaščite in reševanja ob potresu na območju ljubljanske regije</b> <b>Regional earthquake protection and rescue plan in the Ljubljana region</b>
<u>Subsection</u>	Planning
Timeframe	May 2015 (v3) →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Regional level
Promoter	Administration of the Republic of Slovenia for Civil Protection and Disaster Relief – Branch in Ljubljana
Target groups	Civil Protection, Rescue Units, municipalities...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="http://www.sos112.si/db/file/Ljubljana/Nacrt_ZiR_potres_2015.pdf">http://www.sos112.si/db/file/Ljubljana/Nacrt_ZiR_potres_2015.pdf</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period
Does the document specifically deal with cultural heritage?	Yes (discussed in chapters 1.3.1, 1.5, 4.1.2, 5.2.3, 7.1.9, 8.1.2, 8.1.5 and appendix P-31)
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters) The document presents Regional earthquake protection and rescue plan for the Ljubljana region and is prepared on the basis of Slovenian legislation.	

### POST-EARTHQUAKE PLANNING

The topics of the document are addressed at the regional level. The contents are divided into the following chapters (similarly as the National plan for civil protection and disaster relief in case of earthquake):

- general about earthquake,
- planning,
- implementation of protection, disaster relief and assistance,
- forces and resources to implement the plan,
- observation, notification and alarm,
- activation of forces and assets,
- management and guidance,
- protection and disaster relief tasks,
- personal and mutual protection and
- damage assessment.

**Table 6.7: Post earthquake planning.**

POST-EARTHQUAKE PLANNING	
<b>Title</b>	<b>Načrt Mestne občine Ljubljana za zaščito in reševanje ob potresu</b> <b>Plan of the City of Ljubljana for earthquake protection and rescue</b>
<u>Subsection</u>	Planning
Timeframe	Nov 2015 (v3) →
Does the document refer to the EU regulatory framework?	No
Level at which the document is used – see Administrative division of your country (Table 1.1)	Local (municipality) level
Promoter	City administration - Department of Protection, Rescue and Civil Defense
Target groups	Municipality, Civil Protection, Rescue Units...
Is the document publicly available? Please provide references (e.g. web link...), if possible.	<a href="https://www.ljubljana.si/sl/moja-ljubljana/cuvamo-svoje-mesto/zascita-resevanje-in-pomoc/naartti-zalatite-in-relevanja/">https://www.ljubljana.si/sl/moja-ljubljana/cuvamo-svoje-mesto/zascita-resevanje-in-pomoc/naartti-zalatite-in-relevanja/</a>
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	Pre- and post-earthquake period



### POST-EARTHQUAKE PLANNING

<p>Does the document specifically deal with cultural heritage?</p>	<p>Yes (discussed in chapters 5.4 - Informing and alerting endangered people and 8.1 - Protective measures and tasks of protection, rescue and assistance, holders of individual tasks and the manner of their implementation and the course of protection and rescue activities).</p>
<p>Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)</p> <p>The document presents plan for civil protection and disaster relief in case of earthquake for the city of Ljubljana and is obligatory by Slovenian National plan for civil protection and disaster relief in case of earthquake. As Ljubljana is positioned on the earthquake prone area, the document is obligatory.</p> <p>Its first version was created in 1997 and now the 3<sup>rd</sup> version is in force.</p> <p>The topics of the document are addressed at the municipality level. The contents are divided into the following chapters (similarly as the National plan for civil protection and disaster relief in case of earthquake):</p> <ul style="list-style-type: none"> <li>- general about earthquake,</li> <li>- scope of planning,</li> <li>- implementation of protection, disaster relief and assistance,</li> <li>- forces and resources to implement the plan,</li> <li>- observation, notification and alarm,</li> <li>- activation of forces and assets,</li> <li>- management and guidance,</li> <li>- protection and disaster relief tasks,</li> <li>- personal and mutual protection and</li> <li>- damage assessment.</li> </ul>	

Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.

In general, we have entered all the existing legally adopted official documents that are representative of this topic. As far as protection and rescue plans are concerned, we have entered only 1 case per regional and per local level, with, of course, more in force at each of the two levels. In this context, we still have a lot of documentation in Slovenia (instructions, articles, studies, research documents ...), which is not legally determined.

## 7 Insurance against earthquakes

Please, fill in the table(s) regarding optional earthquake insurance in section 7.1. In case there is legislation/policy regarding the earthquake insurance in your country, please, fill in also the table(s) in section 7.2.

### 7.1 Optional earthquake insurance

Please, fill in the table below with information regarding **optional earthquake insurance**. Fill in one table per insurance company and copy the table as many times as necessary. The questionnaire in table 7.1 can be sent directly to insurance companies for their completion.

Please, provide information what proportion of the insured buildings in your country are also insured against earthquake. This information will help us in the upcoming activities within WP T1.
According to data obtained from 4 out of 5 insurance companies that offer real estate insurance in Slovenia, the proportion of the insured buildings that are also insured against earthquakes, is around 15 % (in some cases even up to 35 %).

As earthquake insurance (premium) depends on the location of the insured building, please, provide information on the division of seismic zones of your country in reference to optional earthquake insurance. What is the basis for this division (is the division determined by insurance/reinsurance companies)? Is the division into seismic zones related to the map of earthquake hazard?
Slovenia is divided into four seismic hazard zones. According to the data obtained, the division is made internationally and is determined by reinsurance companies.

**Table 7.1: Insurance against earthquakes – optional insurance – Zavarovalnica 1.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	Zavarovalnica 1
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	No, although it is possible to take out earthquake insurance as an extension of insurance covering fire damage.

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Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	No.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	Yes. The insurance company does not check whether the insured building holds a building/occupancy permit.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	A multistorey building can be insured as entire building or as an individual apartment. In the second case the damage to common areas is also covered in the respective share. The insurance premium for single apartment does not depend on its location within a building.
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Earthquake insurance in an extension of insurance to cover fire hazards (e.g. fire insurance, home insurance for private individuals, construction insurance).
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	Yes, the earthquake insurance premium depends on the year of construction, before or after 1965.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Slovenia is divided into four seismic hazard zones. The earthquake insurance premium depends on the zone in which the property is located.
Does the optional earthquake insurance (premium) depend on the property area?	Yes.
To what extent is the damage recovered?	The insurance company deducts 2 % or 5 % of the insurance sum from the damage incurred.
Does the damage recovered depend on the intensity of an earthquake?	No.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect	If the fire is caused by an earthquake, the property has to be insured both, against consequences of earthquake as well as of fire.

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damage (e.g. fire damage, caused by an earthquake)?	
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Due to the expected catastrophe of the event, the insurance company disperses the risk among many reinsurance companies. Notwithstanding the above, the insurance company pays the damage to the insured.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>Earthquake insurance premium depends on the construction materials, possible structural interventions after the construction (strengthening...)...</p> <p>An approximate insurance premium for typical single-family house with gross area 150 m<sup>2</sup>:</p> <ul style="list-style-type: none"> <li>- built before 1965 costs between 45-170 €</li> <li>- built after 1965 costs between 35-130 €.</li> </ul>
Additional information regarding optional earthquake insurance	<b>Among those Triglav policyholders who have taken out real estate insurance, we observe that the demand for additional seismic insurance varies depending on the form of insurance they take out. On average, between <u>15 and 35</u> % of policyholders who have one of the possible forms of real estate insurance with Zavarovalnica Triglav, also decide to take out the seismic insurance.</b>

**Table 7.2: Insurance against earthquakes – optional insurance – Zavarovalnica 2.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	Zavarovalnica 2
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	The condition for taking out the seismic insurance is the insurance for basic fire hazards for the same subject of insurance, with the sum insured, which must be the same as for basic fire risks.
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	No. We, the insurance companies, want the facilities to be of high quality seismic construction and appropriate anti-seismic rehabilitation of

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	<p>those facilities that were not built according to seismic standards.</p> <p>Of course, there are still many buildings in Slovenia that were built before the legislation on earthquake construction, or the construction was poorly carried out and not properly rehabilitated. For such facilities, a risk assessment is performed and an appropriate premium is charged.</p>
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	<p>The following factors are important for the insurance company to take out insurance:</p> <ul style="list-style-type: none"> <li>- Defined ownership of the building</li> <li>- Value or the sum insured of the object of insurance, which is given to us by the insured on the basis of invoices or is evaluated with the help of the square footage of the object</li> <li>- Building class (massive construction, prefabricated, timber)</li> <li>- Location of the facility</li> <li>- Additional above-standard devices or installations that are built into the building or functionally serve to operate the facility</li> <li>- Intended use of the facility</li> </ul> <p>If the insurance company finds that the facility does not meet the criteria for insurance or there is a great possibility of an insured event occurring or it is already in the process, of course taking out of the insurance may be refused.</p>
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	<p>Insurance companies strive to ensure that all policyholders, as much as possible, insure multi-apartment buildings with one policy. Namely, there is a desire that in the event of catastrophic damage, the facilities are rehabilitated or completely built. If the individual owner wishes to insure an individual apartment, it is also possible to insure this together with common areas. The premium does not depend on the position of the apartment in the multi-apartment building.</p>
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	

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What type of optional earthquake insurance packages does insurance offer?	Seismic insurance is always linked to the basic fire hazards that are insured for the same objects of insurance. The earthquake can be insured for both real estate and movable property and is taken out as an extension of non-life insurance, where we have designed suitable products for different customer needs. In addition, you can also take out earthquake insurance for vehicles under comprehensive vehicle insurance.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	The premium is higher for older buildings that were not built in accordance with earthquake standards, ie before 1964.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Slovenia is divided into four seismic hazard zones. The earthquake insurance premium depends on the zone in which the property is located.
Does the optional earthquake insurance (premium) depend on the property area?	Yes. The area of the property is one of the criteria for determining the sum insured, but it is not the only one.
To what extent is the damage recovered?	<p>Upon the occurrence of an insured event on movable property, the insurance company pays the insurance indemnity, including cleaning costs, but not more than the sum insured of all insured movable property in an individual building or residential unit.</p> <p>The insured participates in each damage in the amount agreed on the policy. This is usually 2%, 5% or 10% of the sum insured.</p>
Does the damage recovered depend on the intensity of an earthquake?	No.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	Seismic insurance covers damage caused by an earthquake, i.e. partial or complete collapse of buildings, cracks in buildings, etc. Seismic insurance also covers damage caused by a fire caused by an earthquake.
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Any earthquake insurance is reinsured.

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Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	House area:	150 m2		Insured value:	117.30 €
	Built after 1964	Seismic zone			
	Deductible	I.	II.	III.	IV.
	2%	22.52	45.04	78.83	118.24
	5%	18.02	36.04	63.06	94.59
	10%	13.52	27.02	47.3	70.94
	Built before 1964	Seismic zone			
	Deductible	I.	II.	III.	IV.
	2%	33.78	67.56	118.24	135.13
	5%	27.02	54.05	94.59	108.11
	10%	20.27	40.54	70.94	81.08
The price is without sales tax on insurance transactions					
Additional information regarding optional earthquake insurance	The key data for determining the seismic insurance premium are: <ul style="list-style-type: none"><li>- sum insured of the facility or equipment</li><li>- seismic zone (geographical location of the building). Slovenia is divided into four earthquake zones</li><li>- year of construction (before 1964 or later)</li><li>- purpose of use of the facility</li><li>- the amount of the insured's participation (2%, 5%, 10%)</li></ul> <b>Earthquake insurance is taken out in more than <u>15 %</u> cases of those who have taken out an insurance within the DOM product.</b>				

**Table 7.3: Insurance against earthquakes – optional insurance – Zavarovalnica 3.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	Zavarovalnica 3
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	Yes, things that are insured against an earthquake must first be insured against basic fire hazards.
Is construction of the property in accordance with seismic codes one of	No, as older buildings are also insured against the risk of earthquakes.



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compulsory conditions for the possibility of taking out optional earthquake insurance?	
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	Yes, insurance without building permit is possible. The insured must properly maintain the insured buildings.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	We can insure individual dwellings (with associated common parts) or the building as a whole for the risk of earthquakes, provided that the building is fire insured with our insurance company. Only the common parts of the building can't be insured. The amount of the premium does not depend on which floor the apartment is located on.
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Earthquake insurance is never a "stand-alone" cover, but is always taken out as an additional cover (e.g. to basic fire hazards). We most often insure buildings, equipment and stocks against the danger of an earthquake, but we can also insure the consequent damage - operational downtime that occurs as a result of the earthquake.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	Yes.
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes. Premium rates are set for each "postal code" in Slovenia.
Does the optional earthquake insurance (premium) depend on the property area?	The amount of the premium depends on the insured sum of the property, and it is indirectly affected by the area of the building.
To what extent is the damage recovered?	The damage is reimbursed in accordance with the provisions of the conditions and the insurance policy (the insurance premium, for example, depends on the amount of the agreed deductible, the method of insurance). Normally, buildings are insured at a new value, which means that depreciation is not deducted in



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	the event of damage. Most often, policyholders decide to take out insurance with a 2% deductible from the sum insured, less often by 5% or 10%. Things are insured at so called full value (per sum insured), where it is very important that they are insured with a sum insured, which must correspond to the insured value of the thing. Otherwise, there may be underinsurance and a proportional reduction in the insurance premium.																		
Does the damage recovered depend on the intensity of an earthquake?	The amount of the premium depends, among other things, on the seismic exposure at the place where the subject of insurance is located.																		
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	Yes, the insurance also covers all damage due to basic and additional hazards that arise as a result of the earthquake, such as fire, explosion, landslide, flood (loosened embankment), etc. of course solely provided that such damage occurred directly as a result of the action of the earthquake																		
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Of course, insurance companies could easily reimburse all the damage that we have committed to reimburse through insurance contracts, which we have proven many times. Insurance companies must properly manage and monitor their exposure to earthquake hazards and balance risks over time and space with appropriate reinsurance programs.																		
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	<p>Predmet zavarovanja: stanovanjska hiša Zavarovalna vsota v EUR 150.000,00 Franšiza: 2% od zavarovalne vsote</p> <p>Letna premija v EUR brez davka od prometa zavarovalnih poslov po področju izpostavljenosti in glede na letnico izgradnje:</p> <table><tr><th></th><th>stanovanjske zgradbe zgrajene do 31.12.1964</th><th>stanovanjske zgradbe zgrajene po 01.01.1965</th></tr><tr><th>Področje izpostavljenosti</th><th></th><th></th></tr><tr><td>11</td><td>45</td><td>30</td></tr><tr><td>12</td><td>90</td><td>60</td></tr><tr><td>13</td><td>157,5</td><td>105</td></tr><tr><td>14</td><td>180</td><td>120</td></tr></table>		stanovanjske zgradbe zgrajene do 31.12.1964	stanovanjske zgradbe zgrajene po 01.01.1965	Področje izpostavljenosti			11	45	30	12	90	60	13	157,5	105	14	180	120
	stanovanjske zgradbe zgrajene do 31.12.1964	stanovanjske zgradbe zgrajene po 01.01.1965																	
Področje izpostavljenosti																			
11	45	30																	
12	90	60																	
13	157,5	105																	
14	180	120																	
Additional information regarding optional earthquake insurance	Earthquake insurance is taken out on the basis of the insurance company's internal rules, which are set out in premium systems. However, due to the nature of the risk (the frequency is extremely low, and the size of the damage can have catastrophic proportions), these are																		

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	<p>related to the agreements that insurance companies have with their reinsurers.</p> <p>We do not have a catalog, but we do have a premium price list, which is a business secret of every insurance company.</p> <p><b>According to our estimates, only 15% of residential buildings are insured against earthquake hazards.</b></p>
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**Table 7.4: Insurance against earthquakes – optional insurance – Zavarovalnica 4.**

INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE	
Insurance company	Zavarovalnica 4
CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	<p>General condition of the building, assessed by the person at the place of insurance.</p> <p>The internal instruction to persons taking out insurance is to insure only property that is in good condition and is properly maintained (applies to all types of insurance).</p> <p>A precondition for taking out seismic insurance is the insurance of at least the basic dangers of fire insurance (fire, explosion, storm, plane crash).</p>
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	There are no special conditions, since from 1964 all buildings should be built in accordance with earthquake regulations.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	<p>Buildings under construction that do not yet have a use permit, can be insured, even in the event of an earthquake (but our insurance company does not offer construction / assembly insurance!).</p> <p>Buildings without a building permit should not be insured.</p>
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake insurance of common areas? Is optional earthquake insurance premium dependent on the	In principle, multi-apartment buildings and multi-apartment-business buildings should be insured with a common policy, but in practice this is not always the case, because each individual apartment owner can take out his own building insurance, including coverage on his share of common areas. Therefore, the share of the

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level of the apartment (e.g. ground floor, the top floor...)?	individually insured floor is excluded from the common shelf.
<b>INSURANCE PACKAGES AND INSURANCE PREMIUMS</b>	
What type of optional earthquake insurance packages does insurance offer?	Earthquake insurance is always considered with the full sum insured, while only the deductibles are optional, which are: 2%, 5% or 10% of the value of the building. Earthquake insurance is property insurance for property damage (buildings, equipment, supplies), but also an insurance for business interruption due to the earthquake, can be taken out, which falls within the so-called non-life insurance of financial losses.
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	The earthquake insurance premium depends on the year of construction (before 1964 or 1964).
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes. There are 4 earthquake zones in Slovenia (e.g. Murska Sobota - 1st earthquake zone, Ljubljana - 3rd, Kobarid - 4th).
Does the optional earthquake insurance (premium) depend on the property area?	The premium depends on the value of the subject of insurance (buildings, equipment, supplies).
To what extent is the damage recovered?	Depending on the extent of the damage. The damage is calculated according to the costs of repairing the damaged insured object, in case of total damage, the sum insured is paid. Before the transfer, a deductible is first deducted from the calculated insurance premium.
Does the damage recovered depend on the intensity of an earthquake?	Yes, the damage is covered only if an earthquake with an intensity equal to or greater than the 6th degree according to the EMS is measured at the insured place.
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	As previously stated, the condition for taking out an earthquake insurance is fire insurance. Therefore, if fire and seismic insurance is taken out, the damage resulting from the earthquake is covered in any case, e.g. also a consequent fire. However, if the earthquake insurance is not taken

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	out, but there is a fire due to the earthquake, the fire will not be covered.
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	All earthquake insurances are reinsured, so there is no fear that due to a catastrophic earthquake one insurance company would go bankrupt.
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	/
Additional information regarding optional earthquake insurance	<p>In Slovenia, there is no legislation relating to earthquake insurance, but every insurance company is obliged to use the price lists prescribed by the reinsurer.</p> <p>The seismic insurance premium depends also on the activities for which the insured facility is intended (industry or civil risk).</p> <p><b>Earthquake insurance (on 30<sup>th</sup> April 2020) is taken out in 28 % of all non-life insurances that are taken out at Insurance company Merkur.</b></p>

**Table 7.5: Insurance against earthquakes – optional insurance – Zavarovalnica 5.**

<b>INSURANCE AGAINST EARTHQUAKES – OPTIONAL INSURANCE</b>	
<b>Insurance company</b>	<b>Zavarovalnica 5</b>
<b>CONDITIONS FOR TAKING OUT OPTIONAL EARTHQUAKE INSURANCE</b>	
Is there any condition that has to be fulfilled in order to take out optional earthquake insurance?	No, but the condition for taking out earthquake insurance is taking out fire insurance.
Is construction of the property in accordance with seismic codes one of compulsory conditions for the possibility of taking out optional earthquake insurance?	No, there is no such condition. However, earthquake insurance is 50% more expensive if the building was built before 1964.
Is it possible to take out optional earthquake insurance for the building that does not have a building/occupancy permit?	Yes, the building/occupancy permit is not a necessary condition.
Multistorey residential buildings: is it possible to take out optional earthquake insurance only for a single apartment or the entire building has to be insured? What about optional earthquake	You can also insure an individual apartment or common areas. In this case, the part of the common areas that falls on common areas is also insured. The premium is the same for all

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insurance of common areas? Is optional earthquake insurance premium dependent on the level of the apartment (e.g. ground floor, the top floor...)?	apartments, regardless of the floor on which the insured apartment is located.		
INSURANCE PACKAGES AND INSURANCE PREMIUMS			
What type of optional earthquake insurance packages does insurance offer?	We do not market the earthquake insurance, there are only different variants of deductions.		
Do optional earthquake insurance (premium) depend on the age and quality of the facility/building?	It depends only on the age of the building (built before/after 1964).		
Does optional earthquake insurance (premium) depend on the location of the property? For example, is an optional earthquake insurance premium higher in areas with a higher earthquake hazard?	Yes. There are 4 tariff earthquake zones in Slovenia.		
Does the optional earthquake insurance (premium) depend on the property area?	Not directly, it depends on the insurance value of the property. Of course, the value of the property depends on the area.		
To what extent is the damage recovered?	It depends on the chosen variant. The damage is reimbursed in full, whereby the insured participates in each damage with a deduction of 2, 5 or 10% of the sum insured.		
Does the damage recovered depend on the intensity of an earthquake?	No.		
How is defined the damage that is covered by optional earthquake insurance? Do the insurance cover only direct seismic damage or also indirect damage (e.g. fire damage, caused by an earthquake)?	The fire is also covered.		
Would the insurance company be able to recover all damage in case the devastating earthquake occurred?	Yes, as the earthquake insurance is reinsured.		
Please, provide earthquake insurance premium for the case of a typical single-family house in your country.	Potresna cona, gradnja pred letom 1965	Zavarovalna vsota (EUR)	Letna premija (EUR)
	1	138.900	41,67
	2	138.900	83,34
	3	138.900	145,85
	4	138.900	166,68
	Potresna cona, gradnja po letu 1965	Zavarovalna vsota (EUR)	Letna premija (EUR)
	1	138.900	29,17

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	2	138.900	55,56
	3	138.900	98,62
	4	138.900	112,51
Additional information regarding optional earthquake insurance	In Slovenia, there is no legislation relating to earthquake insurance.		

## 7.2 General legislation relating to earthquake insurance

Please, fill in the table below with information regarding **general legislation relating to earthquake insurance**. Please, copy the table for each entered document.

**Table 7.6: Insurance against earthquakes – general legislation.**

INSURANCE AGAINST EARTHQUAKES – GENERAL LEGISLATION	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	

<p>Please, explain whether you have entered all the documents available in this field in your country or not (e.g. whether a document has been entered only for a certain region and similar documents exist for other regions). The information is important in the further processing of the collected documents and in the comparison of the situation between the participating PP countries.</p>
<p>In this field in Slovenia there are no existing documents.</p>

## 8 Additional topics

Please, fill in the table below with information regarding any of the collected norms and incentives that could not be classified in previous 6 topics in chapters 1-7. Please, copy the table for each entered document.

**Table 8.1: Insert topic**

TOPIC	
Title	
Timeframe	
Does the document refer to the EU regulatory framework?	
Level at which the document is used – see Administrative division of your country (Table 1.1)	
Promoter	
Target groups	
Is the document publicly available? Please provide references (e.g. web link...), if possible.	
Does the document refer to pre-earthquake period, post-earthquake period or both of them?	
Does the document specifically deal with cultural heritage?	
Description of the document/incentive (explain how does it affect seismic vulnerability) (max 2000 characters)	