Interreg – IPA CBC

EUROPEAN UNION

Greece - Republic of North Macedonia

FLOOD SHIELD

Joint flood risk governance and management in the Axios/Vardar cross border area

D.3.1.1 Assessment of legal & institutional bottlenecks in crossborder cooperation

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DECEMBER 2023

The Project is co-funded by the European Union and national funds of the participating countries.

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Abbreviations / Definitions

Abbreviations	Definitions
AHMA	Administration for Hydro meteorological activities
ALI	Adult Literacy Index
ALR	Adult Literacy Rate
CA	Contracting Authority
CBC	Cross Border Cooperation
CGDP	Combined Gross Enrollment Index
CMC	Crisis Management Centre
DAM–T	Decentralized Administration of Macedonia – Thrace
DPR	Directorate for protection and Resque
DRR	Disaster reduction and rescue
EA–WS	Environmental administration- Water Sector
EC	European Commission
EI	Education Index
EU	European Union
EWS	Early Warning System
FD	Floods directive
FVI	Flood Vulnerability Index
GDP	Gross Domestic Product
GDPpc	GDP per capita at PPP
GEI	Gross Enrollment Index
GIS	Geographic Information Systems
GR	Greece
HDI	Human Development Index
HMS	Hydro meteorological services
IPA	Instrument for Pre-Accession Assistance
IPCC	International Panel of Climate Change
IPS	Information & Publicity Strategy
LB	Lead Beneficiary, also known as project partner 1 (PP1) or Lead Partner (LP)
LE	Life Expectancy

LEI	Life Expectancy Index
LSGU	Local Self-government Unites
LW	Law on waters
MAFWE	Ministry of agriculture forestry and water economy
MEPP	Ministry of environment and physical planning
MEPP- EA	Ministry of Environment and Physical Planning- Environmental Administration
PB(s)	Project Beneficiary(ies)
PP(s)	Project Partner(s)
PWD	Persons With Disabilities
RBD	River Basin Districts
RNM	Republic of North Macedonia
UN	United Nations
WFD	Water Framework Directive
WME	Water Management enterprise

Executive Summary

The "Assessment of legal and institutional bottlenecks in crossborder cooperation" provides insights into the civil protection systems of Greece (GR) and the Republic of North Macedonia (RNM), elaborating into their legal frameworks, organizational structures, and strategies for disaster management, focused on flood incidents.

Civil Protection as a concept is "linked to actions aiming at protecting the lives and property of citizens, the infrastructure of a country and the natural environment from the occurrence of disasters caused by natural or man-made factors, which can be either rapid or slow-moving. It is related to many policies in place, draws on the scientific and technological potential of various disciplines, is shaped in the context of the existing organization of each country and its implementation requires political commitment, institutional regulation and social participation. In other words, Civil Protection acts as a protective mechanism of the state to safeguard society as a whole. 'Civil Protection' is widely used as a term in Europe and in many other countries around the world, while organized efforts to respond to threats are called 'emergency management' or 'disasters' management planning'. To deal with disasters, and all kinds of emergencies, the establishment of Civil Protection mechanisms at national, regional and local levels in each country has been a successful strategy.

As internationally foreseen, an integrated cycle of Civil Protection is defined as a cycle that includes:

- prevention,
- preparedness,
- early warning,
- rapid response,
- consequences management and
- rehabilitation.

Civil protection includes preventive measures to reduce the impact of future emergencies or disasters and to provide assistance to populations in need due to a natural or man-made disaster.

In Greece, the civil protection system has evolved significantly since its establishment in 1995, with key legislative updates and the creation of the Ministry of Climate Crisis and Civil Protection in 2021. The system follows an integrated cycle encompassing prevention, preparedness, early warning, response, consequences management, and rehabilitation. Central bodies such as the General Secretariat for Civil Protection coordinate with decentralized entities like regional governors and mayors. The National Crisis and Hazard Management Mechanism (Nat-CHAMM) prioritizes risk prevention, preparedness, and response, with a focus on flexibility, interoperability, and scientific knowledge utilization. The system also includes a hierarchy of states of preparedness and emergency to facilitate resource mobilization.

In the Republic of North Macedonia (RNM), the civil protection system addresses various natural and man-made disasters, including those stemming from climate change, earthquakes, and terrorism. The state is committed to establishing standards for prevention and crisis response, aligning with international frameworks and directives. Flood risk management is a key focus, involving multi-sectoral collaboration and strategic prevention measures. Cross-border cooperation agreements, such as the Memorandum of Cooperation with Greece, underscore the importance of mutual support during crises.

Greece and North Macedonia has set in force numerous international instruments for cross border cooperation in the field, including the signature of a Memorandum of Cooperation in the field of Civil Protection, including terms for mutual support in case of a crisis.

This assessment highlights the significance of coordinated efforts, legal frameworks, and international partnerships in enhancing civil protection and disaster resilience in their respective countries, identifying the bottlenecks at national level that hinder cross- border cooperation for flood management and reduction. Recommendations are including in legal and institutional level to overcome main obstacles for cross-border cooperation.

1 Introduction

1.1 General Project Information

Project Title: Joint Flood Risk Governance and Management in the Axios/Vardar Cross-Border Area

Acronym: FLOOD SHIELD

Timeline: 21/07/2022 to 15/12/2023

Project Budget: 1,474,450.00 €

Partnership:

Decentralized Administration of Macedonia and Thrace – GR (Lead Partner)

General Secretariat of Natural Environment and Water – GR

Ministry of Environment and Physical Planning – RNM

Protection and Rescue Directorate – RNM

The project is implemented within the framework of the INTERREG IPA CBC program "Greece – Republic of North Macedonia 2014 – 2020" under Priority Axis 2 "Protection of Environment – Transportation." It falls under Thematic Priority c: Promoting sustainable transport and improving public infrastructure and addresses specific objective 2.4: "Prevention, mitigation, and management of natural disasters, risks, and hazards."

1.2 Scope of the Assessment

The present assessment constitutes a joint deliverable within the context of the FLOOD SHIELD project (deliverable "D.3.1. Report on Civil protection system in Greece and North Macedonia).

Within this framework, the historical documentation of the term, the regulatory framework, and the organization and management of this system in cases of disasters and emergencies in Greece are presented through an extensive literature review, considering the specifications set by Law 4662/2020. Specifically, the organizational structure, strategic and operational planning, coordination function, as well as the utilization of scientific knowledge and applied research are examined. Special emphasis is placed on the role of organized volunteer civil protection groups, as stipulated by Law 4662, Government Gazette A' 27/07.02.2020, "National Crisis and Disaster Management Mechanism, restructuring of the General Secretariat for Civil Protection, upgrading of the civil protection volunteer system, reorganization of the Fire Brigade, and other provisions." Additionally, all relevant stakeholders at the local, regional, or national level in the cross-border region of Greece and the Republic of North Macedonia are documented, and the

responsibilities of each competent authority or service are analyzed. Regarding the risk management from the occurrence of disasters, prevention and preparedness plans have been developed, and in this context, the General Civil Protection Plan "XENOKRATIS" for addressing natural disasters is presented.

In Annex I, the Civil Protection Guidelines for citizens for protection from natural disasters are presented, and in Annex II, the Information Guidelines of Civil Protection for citizens via 112 are presented.

The term "Civil Protection" as a concept "is related to actions aimed at protecting the lives and property of citizens, the infrastructure of a country, as well as the natural environment from the occurrence of disasters resulting from natural or anthropogenic factors," which can be of rapid or slow development. It is associated with many applicable policies, utilizes the scientific and technological capabilities of various sciences, is shaped within the existing organization of each country, and its implementation requires political commitment, institutional regulation, and social participation. Civil Protection, therefore, serves as the protective mechanism of the state for the preservation of the entire society. The term "Civil Protection" is widely used in Europe and many other countries worldwide, while organized efforts to address threats are called "emergency management" or "disaster planning." For the management of disasters and all kinds of emergencies, the creation of Civil Protection mechanisms at the national, regional, and local levels of each country has been a successful strategy.

In **Europe**, the foundations of cooperation for the creation of Civil Protection at the community level were laid in May 1985 at the ministerial meeting in Rome. In 1987, the first organized network of Civil Protection in the European Union (EU) was established, called the Permanent Network of National Correspondents (PNNC), and in 1997, the EU Council approved the first action programs of Civil Protection. In 2001, the **Mechanism of Civil Protection of the European Union** was established and institutionalized, which, among other things, includes the structural goal of enhancing cooperation between national civil protection authorities. For the implementation of the Mechanism, the Commission is assisted by a committee of representatives of the Member States. In addition to the 27 EU countries, eight third countries participate in the mechanism, including the Republic of North Macedonia. Furthermore, any country in the world can request assistance through the EU Civil Protection Mechanism when a state of emergency exceeds the capabilities of disaster management it possesses.

The Emergency Response Coordination Center (ERCC) of the EU mechanism monitors events worldwide and coordinates EU efforts to address disasters. The EU Civil Protection Mechanism also contributes to coordinating preparedness and disaster prevention activities carried out by national authorities and the exchange of best practices.

The European Council approved positions in 2022 to address extreme weather events attributed to climate change. These positions call for further adaptation of national civil protection systems to the consequences of climate change, focusing on prevention, preparedness, response, and recovery.

In Greece, the General Secretariat for Civil Protection (GSCP) was established in 1995, and in 2021, the Ministry of Climate Crisis and Civil Protection was formed.

Before the establishment of GSCP, the Armed Forces played a dominant role in responding to emergencies, continuing to support official authorities as needed. The international symbol for civil protection consists of an equilateral blue triangle on an orange background, representing the stages of disasters: Preparedness-Response-Recovery.

Figure 1 – Civil Protection Signal in Greece
(Source: [online]: https://civilprotection.gov.gr/ [Accessed: 10.04.2023])

The comprehensive cycle of civil protection internationally includes:

- prevention,
- preparedness,
- early warning,
- rapid response,
- consequences management, and
- rehabilitation.

It involves **risk assessment**, **risk reduction**, **emergency management**, and **disaster recovery actions**.

It is evident that in an organized society, the development of a national strategy in the field of civil protection constitutes a powerful tool for coordinating dozens of actions related to the management of hazardous situations and crises, especially when significant natural, human, and economic resources are at risk. Such a strategy needs to incorporate three fundamental elements. Firstly, it must define a general approach to the major risks affecting the country, emphasizing the identification of risk acceptance levels, the goals of risk management, and the policy choices to achieve these goals. Secondly, it should establish principles under which responsibilities for implementing strategic choices are shared, specifically between Central and Local Administration. Thirdly, it should establish a comprehensive institutional framework through which these principles can be consistently applied.

Consequently, essential components for the proper organization and operation of the Civil Protection System include the institutional framework (legislation, regulations, etc.) governing its functioning, its organizational structure (basic components of the civil protection system - public organizations, private entities, etc.), and its resources (human capital, financial funding, etc.).

2 Civil Protection System in the European Union

The European Commission has a key role in promoting risk reduction and preventive actions. In 2016, the European Commission agreed to the Action Plan for the implementation of the Sendai Framework for Action, supporting a disaster risk communication approach in all EU policies. The EU focuses on vulnerability, not just hazards. The EU is pursuing a broader approach to risk mitigation.

Over the past years, risk management has been systematically integrated into EU humanitarian aid programs and projects in all sectors. In 2017, 65 percent of all humanitarian projects funded by the EU included a disaster preparedness component.

The EU allocates part of its annual humanitarian budget (€50 million in 2018) to targeted projects related to disaster preparedness, focusing on Sendai Priority 4 (Improving disaster preparedness and effective response using a multi-hazard approach)). This funding strengthens the ability of national and local preparedness systems to respond earlier and better.

The EU is also investing in early warning systems, monitoring and building national and local response capacities. The EU supports partners in developing effective risk mitigation methods and gathering evidence to justify preparedness for early action.

Any disaster preparedness strategy and resource allocation include a defined exit strategy, where local capacities are deemed adequate or where local authorities or development partners can take over.

In addition, the EU engages and supports local and national government structures in all countries around the world through the EU Civil Protection Mechanism, particularly in the areas of prevention and preparedness.

The EU Aid Volunteers initiative, which offers opportunities for European citizens to get involved in humanitarian aid projects, aims to strengthen the capacity and resilience of vulnerable communities in non-EU countries by implementing joint actions between experienced humanitarian operators and local organizations.

Weather-related disasters may be due to the effects of climate change, a trend that will increase in the future, making disaster risk mitigation a key factor in the successful implementation of development strategies.

In June 2013, the institutions of the European Union (the European Parliament at the proposal of the European Commission) adopted an Action Plan for countries with difficulties in dealing with crises 2013-2020, in which proposals are made for progress in the implementation of the principles and the priorities stated in the Communication and Conclusions of the Council. It lays the foundations for more effective cooperation in the EU to build resilience, bringing together humanitarian action, long-term development cooperation and ongoing political engagement.

Under the Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks), all EU countries are required to assess all areas where significant floods could take place map the flood extent and assets and humans at risk in these areas take adequate and coordinated measures to reduce this flood risk.

The rights of the public to access this information and to have a say in the planning process are also important elements of the Directive.

EU countries are required to create and update Flood Hazard Maps and Flood Risk Maps. Flood Hazard Maps should cover the geographical areas which could be flooded and Flood Risk Maps show the potential adverse consequences associated with these flood scenarios. These maps form the basis for the drafting of flood risk management plans.

Flood risk management is an integral part of integrated river basin management. The Floods Directive is therefore closely coordinated with the Water Framework Directive. In particular, coordinating flood risk management plans, river basin management plans, and public participation procedures.

2.1 European Union Civil Protection Mechanism

In 2001, the Civil Protection Mechanism of the European Union was established, which is activated in cases where a member state is unable to cope with an emergency on its own. Participating states can assist by providing resources and expertise. The Mechanism can be activated in cases of natural and man-made disasters, terrorist actions, and technological, radiological, or environmental accidents, including accidental marine pollution, during peacetime. Any country affected by major disasters can request assistance and the mobilization of operational resources voluntarily offered to the EU by Mechanism countries. In addition to the 27 EU countries, eight third countries, including the Republic of North Macedonia, participate in the mechanism. Any country worldwide can seek help through the EU Civil Protection Mechanism when an emergency exceeds its disaster management capabilities.

The General Secretariat for Civil Protection actively participates in the EU Civil Protection Mechanism and is connected through the specialized graded electronic platform "CECIS" to the Emergency Response Coordination Centre (ERCC) of the European Commission. Greece contributes with units of Civil Protection, such as search and rescue teams, forest firefighting units, medical units, etc., as well as experts. The ERCC monitors events worldwide and coordinates EU efforts to address disasters. The EU Civil Protection Mechanism also contributes to coordinating disaster preparedness and prevention activities conducted by national authorities and the exchange of best practices.

Since February 2010, Civil Protection has been transferred to the Directorate-General for Humanitarian Aid (DG Humanitarian Aid – ECHO), now referred to as the Directorate-General for Civil Protection and Humanitarian Aid Operations. Whenever there is a disaster or a humanitarian emergency, the EU provides assistance to affected countries, following the fundamental principles of humanitarian aid: humanity, impartiality, neutrality, and independence.

EU humanitarian action also incorporates the principle of solidarity, as defined in the Lisbon Treaty (see section "3.2 The Lisbon Treaty"). Civil protection and humanitarian aid are complementary concepts. In the case of humanitarian aid, DG Civil Protection and Humanitarian Aid Operations of the European Commission (DG ECHO), jointly with EU member states, is one of the world's leading humanitarian aid donors. Regarding civil protection, the EU plays a supportive role, coordinating voluntary contributions of aid from countries participating in the EU Civil Protection Mechanism.

In the period from October 15 to October 25, 2018, the "Peer review" Program was implemented in the Republic of North Macedonia (a formal evaluation by experts from other countries working on the same issue, who analyze the disaster risk management system) within the framework of cooperation with the EU on civil protection and disaster risk management. The aim of the process is to ensure the exchange of good practices, to strengthen common learning and common understanding, and to make credible and professional recommendations.

The evaluation team submitted a report, in which good practices were identified, but also the areas in which improvement is needed and a series of recommendations were made for them. Since the problems and challenges identified during the evaluation are systemic and structural in nature, the report formulated a strategy for dealing with the factors from which they arise and offered a series of short, medium and long-term recommendations. It is emphasized that these recommendations, if operationalized by policy makers, can improve the safety and security of citizens in North Macedonia.

All subjects of the crisis system have an obligation to implement the recommendations of the "Peer review" prepared by the EU, where basically the reform of the crisis system, protection and rescue, ensuring functional unity, efficiency and effectiveness of the system in management is proposed, protection and rescue in crisis conditions.

In 2019, this Mechanism was upgraded with the addition of rescEU. The European Civil Protection Pool is based on a voluntary contribution system from participating countries. However, in cases of limited availability, rescEU comes into play, as there is now a European emergency air fleet available that can be deployed and take action immediately.

Greek teams/units participate in Mechanism exercises, and some of them have been deployed to real events that have taken place both in European territory and

globally. To address extreme weather events due to climate change, the European Council approved conclusions in 2022 calling for further adaptation of national civil protection systems to the consequences of climate change, both in the prevention and in the areas of preparedness, response, and recovery.

In 2022, the EU Commission Progress monitoring report for North Macedonia[1] refers to the progress made on civil protection in the reporting period- "the new national strategy for protection and rescue for the period 2022- 2025 was finalized. As regards the Union Civil Protection Mechanism (UCPM), North Macedonia is a participatory state already. The country submitted the required summary of the national risk assessment in March 2022. Further steps were taken to finalize the technical connection to the Union's Common Emergency Communication and Information System (CECIS). Wildfires and COVID-19 crisis highlighted the need to strengthen the legal framework and institutional capacities of the civil protection authorities".

The 2023 progress report for North Macedonia stated that on civil protection, the European emergency call number E 112 has been available to people across the country since February 2022. Furthermore, the fleet of firefighting planes was serviced and new firefighting equipment was acquired. North Macedonia signed the revision of the administrative arrangement with the Union Civil Protection Mechanism. Also, it stated that despite its longstanding participation in the system, no progress has been made in linking the national emergency communication system to the European Commission's Common, Emergency, Communication and Information System (CECIS) or in better defining the role of the national coordinator for the National Platform on Disaster Risk Reduction. The new national protection and rescue strategy for 2022-2025 is yet to be adopted. The country needs to take concrete steps to introduce a mandatory training programme for all territorial, fire and rescue/civil protection staff[2]

The basic objectives of the Platform are prevention, first of all by reducing the risks of disasters, early warning, acting in disaster conditions, reducing the consequences of disasters and acting after catastrophes.

2.2 European Forum for Disaster Risk Reduction

The European Forum for Disaster Risk Reduction is a regional forum for the exchange of knowledge, expertise, experience and information, with the aim of ensuring a coordinated approach to threats of different nature, where standardized procedures and mechanisms are defined and are binding for national authorities. The European Forum aims to ensure continuous actions to reduce disaster risk and prevent the emergence of new risks, to support national contact points and to

[1] North Macedonia Report 2022.pdf (europa.eu)

[2] SWD_2023_693 North Macedonia report.pdf (europa.eu)

encourage national coordination, coherence and enhanced monitoring of progress, to raise awareness of reduction of disaster risks as an integral part of sustainable development, to ensure adaptation to climate change through environmental improvement, reduction of urban pollution, etc., to encourage investments in risk prevention, to strengthen the commitment of all stakeholders and from the public and private sector, to develop mechanisms for informing citizens how to act in case of certain threats, etc. The Republic of North Macedonia has been a member of this forum since 2009, and 46 European countries are included in it.

2.3 The Lisbon Treaty

The Lisbon Treaty extends the European Union's authority in some way. In the realm of civil protection, these new powers are of a supportive nature. Among other things, the Lisbon Treaty aims to improve the European Union's capacity to address natural or man-made disasters.

It states that the EU will provide assistance, relief, and protection to victims of natural and man-made disasters, encouraging cooperation between member states for this purpose (Lisbon Treaty, Articles 196 and 214).

Thus, Article 196 of the Treaty grants the European Union the ability to take measures related to:

- ✓ risk prevention,
- ✓ preparedness of civil protection entities,
- ✓ intervention in cases of natural or man-made disasters,
- ✓ operational cooperation between national protection services, and
- ✓ the coherence of actions undertaken at the international level.

Additionally, Article 222 of the Treaty on the Functioning of the European Union introduces the "solidarity clause." In this context, the Union and member states act jointly in a spirit of solidarity when a member state faces a terrorist attack or a natural or man-made disaster. In such a case, following a request from the affected member state's authorities, the Union mobilizes all available means, including military resources provided by other member states.

2.4 Framework for action from Sendai 2015 - 2030

The United Nations Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015. It outlines seven (7) clear targets and four (4) priorities for action to prevent new and reduce existing disaster risks: (i) Understanding disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing in disaster reduction for resilience and; (iv) Enhancing disaster

preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction.

It aims to achieve the substantial reductiotn of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years.

Priority 1: Understanding disaster risk- Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of people and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2: Strengthen disaster risk management- Disaster risk management at national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery and rehabilitation. It encourages cooperation and partnership.

Priority 3: Investing in disaster risk reduction and building resilience- Public and private investments in the prevention and reduction of disaster risks through structural and non-structural measures are essential to improve the economic, social, health and cultural resilience of people, communities, countries and their assets, as well as the environment.

Priority 4: Improving disaster preparedness and effective response in recovery, rehabilitation and reconstruction

The growth of disaster risk means that there is a need to strengthen disaster response preparedness, take action in the wake of events and ensure effective response and recovery capacities at all levels. The recovery, rehabilitation and reconstruction phase is critical to build for the better by integrating disaster risk reduction measures into development networks.

2.5 NATO

With the ratification of the protocol for the accession of the Republic of North Macedonia to the North Atlantic Alliance, RNM also gains access to the Euro-Atlantic Disaster Response Coordination Center (EADRCC), which is the main civilian response mechanism of NATO in the Euro-Atlantic area. It is active throughout the

year, operational 24/7. The center functions as a system for coordinating aid requests from member states and response from NATO aid structures, mainly in the case of natural and man-made disasters.

3 Civil Protection System in Greece

3.1 Establishment and Organization of Civil Protection in the Greek State

Since the establishment of the Greek state, the response to and restoration of disasters (natural, technological, etc.) have been subject to legislative regulations. From the early 20th century, there have been efforts by the Greek state to protect its citizens from the country's disasters, resulting in laws, decrees, and decisions by various ministries, forming part of the current institutional framework. The chronological legislative regulations include:

In **1929**, Presidential Decree 2/1929 was issued on "Dangerous Constructions" (Official Gazette 153/4/22-4-1929). Subsequent laws on civil defense and related matters were enacted due to World War II. In **1939**, Act 1954 (Official Gazette 405/A) was issued concerning the "Organization of the Civil and Economic Mobilization of the country," aiming to prepare the Greek state for war during peacetime. In **1940**, Act 2372 (Official Gazette 16δ/A) on the "Passive Air Defense of the country" distinguished the responsibilities of ministries for regulations and measures to protect the civilian population, including the construction of public and private shelters, installation of alarm sirens, blackout systems, provision of first aid stations, population training, exercises, etc. In **1941**, Regulatory Decree 17/1941 was issued on the "Removal of danger from damage to buildings due to war, earthquakes, and any other catastrophe" (Official Gazette 310/A/20-9-1941).

Perhaps the first targeted effort in Civil Protection was in 1954 with Ministerial Council Act 1339, which ratified the "Emergency Response Plan for the Country." This plan was abolished in 1971 by Act 857, which dealt with the "Handling of peacetime emergencies of the country." It specified that the government through the Ministry of National Defense and the Prefectures, depending on the level of destruction, had the authority to aid in cases of emergencies. This was one of the early post-World War II attempts by the Greek state to organize the protection of its citizens from natural disasters.

(In **1966**, Presidential Decree 972/1966 was issued, "Organization of the Directorates under the Ministries of Social Welfare: a) Popular Shelter, and b) Shelter and Emergency Care for populations affected by disasters" (Official Gazette 265/A/2-12-1966).)

In **1968**, with Act 368 on "Emergency Planning," the establishment of organized systems for population protection during emergencies in peacetime was introduced

in Greece. This marked the utilization of provisions for Civil Defense in addressing natural disasters. The Minister of Defense was appointed responsible for providing guidelines and coordinating the involved services. Act 398/1968 on "Emergency Planning" was complemented by Act 708/7-11/1970 (Official Gazette 237A), later abolished by Act 17/1974 (Official Gazette 236A).

In **1971**, Act 857/1971 "Dealing with peacetime emergencies of the country" (Official Gazette 57/A/18-3-1971) was issued. This law was the first to specifically address natural disasters, simultaneously repealing Ministerial Council Act 1339/1954.

In **1974**, Act 17/2-9-1974 (Official Gazette 236A) on "Emergency Planning" was issued. This text was the first institutional document defining responsibilities for addressing emergencies in peacetime and ensuring National Defense during wartime. It separated Civil Protection from Civil Defense, transferring disaster management responsibilities from military to civilian forces.

In **1983**, Act 1349/83 "Establishment of the Organization for Antiseismic Planning and Protection (OASP) and other provisions" (Official Gazette 52/A/25-4-1983) was issued. This law founded the Organization for Antiseismic Planning and Protection (OASP) to formulate and design the country's antiseismic policy in response to seismic events in major urban centers. Until 1978, the Political Planning for Emergency Needs (PSEEA) had been responsible for emergency planning. The concept of Civil Protection was later institutionalized in Greece in 1995.

Specifically, in **1995**, the term "Civil Protection" was introduced into Greek law for the first time with Law 2344/1995 (Official Gazette 212A) "Organization of Civil Protection and other provisions." With the provisions of this law, Civil Protection was separated from Civil Defense, and the relevant disaster management responsibilities were transferred from military to civilian forces. (To facilitate the transition from Civil Defense to Civil Protection, the Earthquake Restoration Service of Northern Greece (YASVE) was established in response to catastrophic events such as the 1978 Thessaloniki earthquake. Later, in 1983, the Organization for Antiseismic Planning and Protection (OASP) was established with the aim of seismic protection in the phases of prevention, emergency management, and recovery. In 1985, the Transitional Emergency Plan "Xenokratis-Earthquakes" was issued, tasked with effectively managing emergency situations due to earthquakes. Additionally, structural regulations were institutionalized, such as the General Building Regulation (GOK) in 1985 (Law 1577) and the new Antiseismic Regulation in 1984. In 1987, and following the destructive earthquake in Kalamata in 1986, the Special Unit for Disaster Response (EMAK) was established.

With Law 2344/1995 (Official Gazette 212A), **the General Secretariat for Civil Protection (GSCP)** was established within the Ministry of Interior to implement government policy in the field of civil protection. It directed and coordinated all public administration entities at both the central (Ministries, Agencies, etc.) and

regional levels (Regions, Prefectures, Municipalities). The existing entities until then (OASP, Fire Brigade, General Secretariat of Forests) continued to operate in conjunction with the GSCP, which operated at the national level, and the Prefecture or Region at the regional level. The General Secretary was responsible for coordinating the action of state services and providing all state resources in cases of general, large-scale, or maritime disasters, while the Prefect or Regional Governor was responsible at the local level.

In **1998**, Law 2641/98 "Civil Defense and other provisions" (Official Gazette 211/A/15-9-1998) was issued. On September 15, 1998, Law 2641/98 was published, attempting to unify Civil Protection and PSEEA into a single law. Specifically, Article 1 provided for the organization of Civil Defense in times of peace, defining its main mission as local defense, civil defense, and civil protection during periods of tension, mobilization, and war, as well as civil defense and civil protection in times of peace.

Additionally, in **1998**, the "Xenokratis" plan was issued to take the necessary preparatory and preventive measures for the coordinated mobilization of the country's civil protection forces to effectively address disasters and provide all possible assistance.

The destructive earthquakes in Greece in 1995, particularly in Kozani and Grevena on May 13, 1995, with a magnitude of 6.6R, and in Aigio on June 15, 1995, with a magnitude of 6.1R, prompted the establishment of the National Civil Protection System. However, the major earthquake in Athens in 1999 revealed weaknesses in the existing Civil Protection system, leading to a revision of the relevant institutional framework with Law 2013/2002 (Official Gazette 102A).

Specifically, in **2002**, Law 3013/2002 (Official Gazette 102A) on the "Upgrade of Civil Protection" was issued. This legislation aimed to improve the existing legal framework at the time and was an attempt to capitalize on the seven years of experience with the implementation of Law 2344/1995, which was repealed. On May 1, 2002, Law 3013/02 came into effect, becoming the main law governing Civil Protection in Greece until today. It separated Civil Protection from Civil Defense during peacetime, abolishing all provisions of Law 2641/98 related to Civil Protection.

This law expressed *"the government's pursuit to transfer authority, resources, and responsibility to the administration level closest to the citizen, which is simultaneously the closest to the problem-solving administration level,"* within the framework of decentralization, namely the regional and local self-government of the first and second degree.

According to Law 3013/2002, it was defined that *"the country's civil protection aims to protect the life, health, and property of citizens from natural (rapid or slow*

development), technological (including biological, chemical, and nuclear events), and other disasters that cause emergency situations during peacetime. Within the same purpose, care is provided for material and cultural goods, wealth-producing sources, and the country's infrastructure with the aim of minimizing consequences."

Additionally, under Law 3013/2002 (Official Gazette 102A), issues related to emergency response to disasters were institutionally linked to the concept of Civil Protection. The General Secretariat for Civil Protection was upgraded, and its purpose and objectives were redefined in accordance with modern data. According to Law 3013/2002 (Official Gazette 102A), the main points of the mission of the General Secretariat for Civil Protection are listed below:

the study, planning, organization, and coordination of actions for prevention, preparedness, information, and response to natural, technological, and other disasters or emergency situations. This encompasses the organization of all phases of preparation, mobilization, and coordination of civil protection actions.

In particular, its concerns include:

- Coordination of the preparation of personnel and resources of the country's civil protection for addressing potential disasters, within the framework of existing planning, by risk category. This includes planning and requisitioning personnel and materials/supplies to cover relevant needs.
- Establishment of a documentation center on civil protection issues.
- Development, coordination, assignment to third parties, and funding of training programs for civil protection personnel at central and regional levels. This also applies to training programs for volunteers and specialized social groups (e.g., students). Approval and funding of applied research programs and/or studies for civil protection.
- Contribution to the formulation and implementation of policy in the field of civil protection, in line with government directives. Drafting regulations and specifications in collaboration with other competent ministries according to disaster categories. Promotion of the country's relations in the field of civil protection with relevant international organizations and similar entities in other countries. Coordination of providing scientific or material assistance to other countries affected by disasters and the utilization of similar assistance at the national level.
- Development of the Volunteering System within the framework of Civil Protection for the prevention, response, and restoration of disasters. This involves recording and utilizing specialized volunteers and organizations and potentially financing the actions of Volunteer Organizations included in the Volunteer Organizations Register maintained by it.
- 24-hour, uninterrupted organization and operation of the European emergency number in our country, known as 112, and the corresponding operations center.

Additionally, in Article 8 of Law 3013/2002, the mission of the General Secretary of Civil Protection is defined as "managing emergency situations, including the declaration of an emergency in a region," as described in Article 8 of Law 3013/2002.

In **2003**, with Ministerial Decision 1299/2003 (Official Gazette 423B), the General Plan of Civil Protection "XENOKRATIS" was issued, aiming to: *"create an effective system for addressing catastrophic phenomena and, thus, protecting the lives, health, property of citizens, and the natural environment."*

Specific points include:

- identifying involved services and entities, directing and coordinating operational forces at all levels,
- providing essential elements to competent services for situation assessment, risk assessment, marking vulnerable areas, and subsequently developing specific plans within the framework of the basic plan "XENOKRATIS" to address case-specific risks,
- providing guidelines for formulating strategic and tactical approaches, organizing and equipping services correctly, and forming an operational philosophy for timely mobilization, activation, direction, and coordination of human resources and means,
- the creation of administrative care capabilities to address problems of both operational forces and affected citizens is envisaged and
- establishing a communication and information flow system among all involved services and factors in crisis management.

Since 2003, Laws, Decisions, and Presidential Decrees have been issued that complement the institutional framework of Civil Protection. In particular:

In **2004**, Presidential Decree 151/2004 "Organization of the General Secretariat of Civil Protection" (Official Gazette 107/A/3.06.2004) was issued, organizing the administrative structure of the GSCP. The mission of GSCP includes:

- *Studying, planning, organizing, and coordinating actions for the prevention and response to disasters or emergencies.*
- *Preparing, mobilizing, and coordinating the country's resources for disaster response based on planning.*
- *Utilizing scientific data for risk management.*
- *Coordinating disaster response actions during the occurrence of events and restoring the damages caused.*

In **2006**, Law 3448/2006 "On the further use of public sector information and the regulation of issues under the Ministry of Interior, Public Administration, and Decentralization" (Official Gazette 57/A/15-3-2006) was issued. It introduced

Victim Identification Teams to recognize and identify victims of accidents, disasters, as well as criminal and terrorist acts.

In **2006**, Ministerial Decision 3384/9-6-2006 "Supplement to the General Plan of Civil Protection with the code name 'XENOKRATIS' with the Special Plan 'Management of Human Losses'" (Official Gazette 776/B/28-6-2006) was issued. This plan addresses the management of incidents with numerous casualties resulting from natural, technological, and other disasters, as well as criminal and terrorist actions. It is applied after the completion of survivor selection, pre-hospital care, and evacuation.

In **2006**, Ministerial Decision 7270/21-11-2006 "Formation of the Support Team for the Management of Chemical, Biological, Radiological, and Nuclear Threats and Incidents in the General Secretariat of Civil Protection" (Official Gazette 102/YODD/07.12.2006) was issued, aiming to address threats or incidents caused by accidents, terrorist activities, or potential threats. The committee provides specialized expertise and scientific information.

In **2007**, Law 3536/2007 "Special regulations on migration policy and other issues under the Ministry of Interior, Public Administration, and Decentralization" (Official Gazette 42/A/23-2-2007) was issued. Article 27 amended the basic law 3013/2002. Additionally, Law 3613/2007 (Official Gazette 263/A/23.11.2007) institutionalized the operation of the European Emergency Number (112) and further amended the basic law 3013/2002.

In **2009**, Presidential Decree 184/2009 (Official Gazette 213/A/7-10-2009) led to the establishment of the Ministry of Citizen Protection, transferring the GSCP among other entities, and determining its competencies.

In **2010**, Law 3852/2010 "New Architecture of Local Government and Decentralized Administration - Kallikratis Program" (Official Gazette 87/A/7-6-2010) was issued, establishing new Regional Service Units for civil protection.

In **2012**, the inclusion of the Fire Brigade within the General Secretariat for Civil Protection was decided. Additionally, the Ministry of Citizen Protection was renamed to the Ministry of Public Order and Citizen Protection.

In **2014**, Law 4249/2014 (Government Gazette 73A) was enacted, titled "Reorganization of the Hellenic Police, the Fire Brigade, and the General Secretariat for Civil Protection, upgrading services of the Ministry of Public Order and Citizen Protection, and regulating other matters within the competence of the Ministry of Public Order and Citizen Protection and other provisions." This law aimed at addressing issues related to Civil Protection entities and attempted a partial restructuring of the Civil Protection system, with modifications to Law 3013/2002. However, this law remained largely unimplemented.

In **2020**, following a series of catastrophic events (floods in Samothrace on 25/09/2017, in Western Attica on 15/11/2017, wildfires in Attica on 23/8/2018, etc.), a comprehensive restructuring of the institutional framework for civil protection was undertaken. This led to the enactment of **Law 4662/2020 (Government Gazette 27A) titled "National Crisis Management and Hazard Response Mechanism, restructuring of the General Secretariat for Civil Protection, upgrading of the civil protection volunteer system, reorganization of the Fire Brigade, and other provisions.** Article 2 of Law 4662/2020 established the National Mechanism for Crisis Management and Hazard Response (Nat-CHAMM), hereafter referred to as the "National Mechanism," encompassing the entire disaster management cycle and constituting all operational and administrative structures and functions of Civil Protection.

The Ministerial Decision approving the General Plan with the code word "XENOKRATIS," issued based on the legal framework established by Law 3013/2002, remained unchanged.

Law 4662/2020 has been partially suspended until the issuance of the regulatory acts provided for by the law's administration. Specifically: *"until the issuance of these regulatory acts, the General Secretary of Civil Protection can determine that operational and administrative structures of the General Secretariat for Civil Protection continue to operate or revive in accordance with the regulatory framework as it existed before the enactment of Law 4662/2020."*

Based on the above, it is concluded that **the institutional and regulatory framework currently in force, governing the operation of the existing civil protection system, is essentially Law 3013/2002 and the General Plan with the code word "XENOKRATIS."** For its effective use, revision is deemed necessary in accordance with current provisions. Legislative and administrative changes since 2003, when the plan came into effect, have caused serious difficulties in its implementation and/or updating based on current regulations.

In **2021**, the Ministry of Climate Crisis and Civil Protection (Civil Protection) was established.

Today, 21 years after the enactment and implementation of Law 3013/2002, the existing Civil Protection mechanism has been shaped according to the "New Architecture of Local and Decentralized Administration – Kallikratis Program" (Law 3852/2010), Ministerial Decision H.P. 31822/1542/E103/2010 (Government Gazette 1108 B/2010) (which incorporated EU Directive 2007/60/EC of the European Parliament and of the Council of October 23, 2007, on the "assessment and management of flood risks" into national law) as amended and in force by Ministerial Decision 177772/924/2017 (Government Gazette 2140 B/2017), Law 3199/2003 (Government Gazette 280 A/2003) as amended, among others, by Article 29 of Law 4519/2018 (Government Gazette 25 A/2018), and Law 4662/20.

The competent authorities for the assessment and management of flood risks are as follows:

a. At the national level, the National Water Committee, the National Water Council, and the Special Secretariat for Water.

b. At the regional level, the Water Council of Decentralized Administration and the Water Directorates of Decentralized Administration.

It should be noted that, in the first implementation cycle of Directive 2007/60/EC (Article 10) and Article 9 of Ministerial Decision 31822/1542/E103 (Government Gazette 1108/B/21-07-2010), the Preliminary Flood Risk Assessment for the 14 River Basin Districts of the country has already been published, and the first revision is in progress. The Flood Risk Maps and Flood Risk Management Plans for all River Basin Districts of the country (prepared by the Special Secretariat for Water upon request from the Coordinators of Decentralized Administrations, according to Article 3(2.2) of Ministerial Decision H.P. 31822/1542/E103/2010, as amended and in force) are being developed. The General Secretariat for Civil Protection, the decentralized administrations, and the General Secretariat for Public Works collaborate closely for the timely prevention and response to potential flood risks.

3.2 The concept and purpose of Civil Protection

Civil protection encompasses preventive measures to reduce the impact of future emergencies or disasters and to provide assistance to populations in need due to natural or man-made disasters. In Greece, the institution of Civil Protection has evolved significantly, largely due to the parallel increase in disasters.

Specifically, the term Civil Protection was first introduced in Greece by Law 2344/1995. Article 2 of this law defined Civil Protection as "the planning, prevention, material and psychological preparedness, and mobilization of the country's forces and resources, aiming to protect citizens, safeguard all kinds of goods, materials, and wealth-producing sources, installations, and monuments of the country, as well as to minimize the consequences in cases of emergencies caused by natural, technological, or other disasters."

In 2002, with Law 3013/2002, issues related to the management of emergencies resulting from disasters were linked to the concept of Civil Protection, and the General Secretariat for Civil Protection (GSCP) was upgraded. According to this law, the purpose of Civil Protection is defined as follows: *"Civil protection of the country aims to protect the lives, health, and property of citizens from natural (rapid or slow onset), technological (including biological, chemical, and nuclear events), and other disasters that cause situations of emergency during peacetime. In the context of the same purpose, care is taken for natural and cultural goods, national wealth-*

producing sources, and the country's infrastructure, with the goal of minimizing the consequences of disasters."

To achieve this purpose:

- Prevention plans and programs are developed by risk category. Preparedness measures are taken, and actions for prevention, preparedness, response, and recovery are implemented.
- Human resources are utilized, and public and private resources at the national, regional, and local levels are employed.
- Recommendations are submitted to the relevant ministries, as appropriate, for the amendment of relevant legislation.

National Crisis and Hazard Management Mechanism

According to Law 4664/2020, *"the National Crisis and Hazard Management Mechanism (Nat-CHAMM) is established to cover the entire disaster management cycle, constituting the set of operational and administrative structures and functions of Civil Protection. The National Mechanism prioritizes prevention, preparedness, and protection of citizens' lives, health, and property, as well as the environment, cultural heritage, infrastructure, vital services, and material and immaterial goods from natural and technological disasters and other related threats that may cause or are likely to cause situations of emergency during peacetime. The fundamental operating principles of the National Mechanism are fulfilled through the prevention, preparedness, response, and recovery of risks. The functioning of the National Mechanism contributes to achieving the goals of European and international mechanisms and systems of civil protection. "*

The basic principles governing the activation and operation of the National Mechanism, as stated in Article 5 of Law 4662/2020, are as follows:

i. Unified and comprehensive implementation regardless of the type, size, complexity, and cause of disasters.
ii. Flexible, interoperable, pyramid-like structure of all operational entities, with the ability to scale the response level according to the degree of need.
iii. Utilization of scientific knowledge, findings from applied research and innovation, infrastructure, applications, and Information and Communication Technologies (ICT) tools.
iv. Continuous and specialized training and certification of human resources.

While the actions are summarized in the four-level system of prevention, preparedness, response, and recovery, which constitutes the operational basis of the National Mechanism. In more detail:

*(1)"**Prevention:** It depends on the level of social and technological achievements and includes all actions, initiatives, projects, means, and measures aimed at minimizing the potential impacts of disasters and*

providing permanent protection against them. This involves reducing vulnerability and its components (danger, exposure, susceptibility).

(2) ***Preparedness:*** *Involves a set of measures and actions at the local, regional, and national levels taken in advance to ensure an effective response to the impacts of risks, minimize loss of life, enhance resilience, and reduce societal vulnerability. It includes a) issuing timely and effective warnings in case of imminent disasters and scenarios of potential risks, b) organizing plans, preparedness programs, self-protection measures, and public awareness, c) preparedness exercises, and d) organizing with the necessary equipment, resources, and human personnel to limit the impacts.*

(3) ***Response:*** *Involves providing assistance to the population (urgent rescue operations) and managing the emergency that arises during or immediately after the disaster. The goal is to protect human lives, reduce health impacts on the population, address immediate survival needs, and generally ensure assistance and support to mitigate the effects (relief/response management).*

(4) ***Short-term recovery:*** *Involves the coordinated implementation of measures and actions for the immediate relief of the affected, urgent technical interventions to limit the impacts of disasters, activation of the state mechanism for damage assessment, coordination of relevant services of the state mechanism, and the Ministries' Directorates for the swift restoration of essential services and infrastructure repair to restore society's functionality. "*

3.3 The organization of the existing Greek Civil Protection System today (Organizations for Planning and Implementation of Civil Protection Policy)

The organization of the existing Greek Civil Protection System today follows the constitutionally defined system of public administration. There are four systems through which public administration can be organized: a) the decentralized, b) the centralized, c) the decentralized, and d) the system of self-government. The administration of the Greek state is currently organized according to the standards of the decentralized system, without, however, abandoning its previous centralized structure. It distinguishes between central state bodies with material jurisdiction throughout the country and regional state bodies that assist the central ones, exercising both material and local competence.

The organization of the Civil Protection System refers to both central and decentralized levels, including at the regional level the Decentralized Administration and at the local level the Municipalities of both first and second degree, adapting to the hierarchical system of Public Administration.

The Central Planning and Implementation Bodies of Civil Protection include:

1) The Interministerial Committee for National Civil Protection Planning (ICNCP),
2) The General Secretariat for Civil Protection (GSCP),
3) The Central Coordinating Body for Civil Protection (CCBCP),
4) The Decentralized Bodies for Civil Protection Planning and Implementation (Decentralized Administration Coordinators, Regional Governors/Deputy Regional Governors, Mayors).

The General Secretary for Civil Protection is tasked with coordinating and directing the work of Civil Protection for the prevention, preparedness, response, and recovery from relevant incidents and possible disasters.

The Decentralized Bodies, namely the General Secretaries of the Decentralized Administrations, the Regional Governors, and the Mayors, with their respective organizational units of Civil Protection (Directorates of Municipal Police, Departments and Offices of Civil Protection), act as connecting links between the involved organizational units of their entity for an immediate and coordinated response.

1) Interministerial Committee for National Civil Protection Planning (ICNCP):

The Interministerial Committee for National Civil Protection Planning (ICNCP) is the primary central body for planning and implementing civil protection policies in Greece. It functions as a government committee with defined powers, as stipulated by Law 4662/2020. *"Its responsibilities include approving the National Disaster Risk Reduction Policy and the National Civil Protection Plan, following recommendations from the General Secretariat for Civil Protection. Additionally, the ICNCP conducts an annual effectiveness assessment of the National Civil Protection Plan, programs, measures, and actions related to prevention, preparedness, response, and recovery."*

The establishment of this committee is outlined at the ministerial level, as part of the initial implementation of the legislative framework for civil protection. It was formed by Ministerial Council Decision No. 10/26.4.2021, which was subsequently amended by Ministerial Council Decision No. 46/29.10.2021, expanding its members and jurisdictional authorities.

2) General Secretariat for Civil Protection (GSCP):

The General Secretariat for Civil Protection (GSCP) is the competent authority for coordinating the actions of our country in civil protection matters. It serves as an executive coordinating body, both in terms of "prevention and mitigation" and "preparedness – response – recovery."

It was established in 1995 by Article 4 of Law 2344/1995, later upgraded to an organization in 2004 by Presidential Decree 151/2004. In 2009, it was placed under the newly established Ministry of Citizen Protection, following administrative changes. Subsequently, the powers and structure were redefined by Chapter D (Articles 28-35) of Law 4662/2020, which had initially been modified by Laws 4070/2012, Government Gazette A 82/10.4.2012, and 4249/2014 (Government Gazette A 73/24.3.2014). By Presidential Decree 70/2021, the GSCP is now under the newly formed Ministry of Climate Crisis and Civil Protection. Additionally, responsibilities related to European issues and policies on climate change adaptation were transferred to the GSCP from the Ministry of Environment and Energy.

Now, *"the GSCP constitutes the administrative and overarching operational structure of the National Civil Protection Mechanism. Its mission is to study, process, plan, organize, and coordinate all civil protection actions involving relevant stakeholders. This includes prevention, preparedness, response, and recovery from natural, technological disasters, and other threats that may cause emergencies during peacetime. The goal is to protect citizens' lives, health, property, the natural environment, and cultural heritage. The GSCP is tasked with monitoring the implementation of these actions, ensuring compliance, and informing citizens on these matters. Furthermore, it organizes and oversees the Unified Registry of Civil Protection Volunteering. As part of its mission, the GSCP oversees the Fire Department, which constitutes its operational structure. "*

The role of the GSCP is particularly strengthened in the relevant regulatory framework throughout all phases of the disaster management cycle. Specifically, according to Law 4662/2020, its responsibilities are defined as follows:

- *"Processes, plans, determines, and monitors the implementation of policies in the field of civil protection. In this context, it ensures, promotes, and coordinates processes for shaping the National Disaster Risk Reduction Policy, proposes its approval to the National Civil Protection Committee (ΔΕΕΣΠΠ), and monitors and controls its implementation at the national level.*
- *Promotes and coordinates processes for shaping the National Civil Protection Plan, following the National Disaster Risk Reduction Policy. It formulates relevant proposals, suggests its approval to the ΔΕΕΣΠΠ, and monitors and controls its implementation.*
- *Monitors the implementation of the National Civil Protection Plan and conducts checks on its application in collaboration with competent authorities and services.*
- *Prepares, in collaboration with relevant state bodies, the procurement program for all mechanical materials and means necessary for the country's civil protection, based on the National Civil Protection Plan. "*

- "Promotes applied research, study, and processing of issues within its competence related to prevention, preparedness, response, and short-term recovery from natural and technological disasters and all kinds of threats.
- *"It is responsible for maintaining the Special Disaster File for each major disaster, containing information on all actions within the framework of the corresponding planning for addressing disasters, as well as reports on the actions of individual competent entities and proposals for improving actions in case of similar events. These are incorporated into the report on actions according to the three-year National Civil Protection Plan. The file also includes information on the extent and intensity of the disaster and the estimated cost of recovery. The disaster file is completed by filling in the financial data related to the total cost of addressing and recovering from the disaster after the relevant procedures are completed. The above information is recorded in the National Database."*
- *"The General Secretariat for Civil Protection (GSCP) is responsible for coordinating the involved entities in all phases of the disaster and threat cycle, with the reservation of the operational and operational autonomy of search and rescue procedures at sea coordinated by the Single Coordination Center for Search and Rescue, following the provisions governing these actions."*
- *"Coordinates and directs the information and awareness efforts for citizens in the field of Civil Protection, both in terms of general information and the provision of specific instructions to address specific disasters or emergencies."*
- *"Maintains the Unified Volunteering Register for Civil Protection."*
- *"Coordinates the involved entities and services for the development of General, Regional, and Local Civil Protection Plans, approves these plans, and conducts checks and monitoring of their implementation."*
- *"Is responsible, through the National School of Crisis Management and Risk Response, for the education and training of personnel from involved entities of the National Mechanism, volunteers, personnel from municipalities of the first and second degree, public servants, as well as citizens, on civil protection matters. In this context, it may assign the planning and/or implementation of similar training programs to third parties or/and to the Academy of Civil Protection of the National School of Crisis Management and Risk Response and the National Center of Public Administration and Local Government. "*
- *"Promotes the country's relations in the field of Civil Protection with relevant international organizations and similar entities in other countries, coordinating the provision of scientific or material assistance from and to other countries affected by disasters and utilizing similar assistance for the country."*

- *"Proposes to the Minister of Climate Change and Civil Protection any necessary measures for the planning and implementation of the country's Civil Protection."*

The General Secretary for Civil Protection (GSCP) oversees these responsibilities, including additional responsibilities specified beyond those outlined in Article 41 of Law 4622/2019, such as:

- Coordinating and directing civil protection efforts in all phases of the disaster and threat cycle, issuing declarations of a state of emergency for a region, and/or special civil protection mobilization decisions.
- Deciding on the inclusion/integration of citizens with special knowledge and experience, as well as all kinds of means belonging to natural and legal persons with their respective operators, into the civil protection personnel during disasters or emergencies.
- In cases of civil protection mobilization, deciding on the immediate procurement and deployment of materials, supplies, and resources beyond those budgeted.
- Having the authority to delegate his responsibilities to lower-ranking entities, with the exception of those delegated by the Minister of Civil Protection.

By joint decision of the Prime Minister and the Minister concerned, a Deputy General Secretary for Civil Protection may be appointed, along with their respective responsibilities. The work of the GSCP and the General Secretary for Civil Protection, in general, is supported by various structures and entities. Some of these are mentioned in the following paragraphs.

3) Central Coordinating Body for Civil Protection (CCBCP)

The CCBCP was established by Article 5 of Law 3013/2002 (Government Gazette 102/A/1-5-2002), amended by Article 112 of Law 4249/2014 (Government Gazette 73/A/2014), and abolished by Article 182 of Law 4662/2020 (Government Gazette 27/A/07.02.2020). The CCBCP was composed of the General Secretary for Civil Protection (GSCP) as its president, at the level of General Secretaries of Ministries (and in special cases at the level of Ministers), with the participation of the Deputy Chief of the Hellenic National Defense General Staff, the Chief of the Fire Brigade, and the presidents of the Union of Regions of Greece (URG) and the Central Union of Municipalities of Greece (CUMG). Its responsibilities included coordinating the response and restoration efforts for major disasters and informing the public.

The CCBCP developed the National Civil Protection Plan for approval by the Supreme Council for Civil Protection (SCCP) and was responsible for monitoring and evaluating its implementation. During large-scale disasters, it operated 24/7.

In the framework of Law 4662/2020, the functioning and responsibilities of other coordinating bodies for civil protection are defined (Coordination Body for Civil

Protection - COBCP, Regional Operational Coordination Bodies for Civil Protection - ROCBCP, Local Operational Coordination Bodies for Civil Protection - LOCBCP).

4) **Decentralized Administration and Local Government** (Decentralized Bodies - Coordinators of Decentralized Administration, Regional Governors/Deputy Governors, Mayors)

At the level of Decentralized Administration and Local Government, the implementation of laws and regulations related to managing risks arising from natural or man-made factors, the maintenance of infrastructure, and the management of local incidents of small extent is generally assigned.

This administrative chain is complemented, both institutionally and technically, by the contribution of Security Forces (Hellenic Police, Fire Brigade, Coast Guard) and the Armed Forces, which bear the responsibility for the initial response in cases of emergencies resulting from the occurrence of disasters.

It is evident that in such an organizational system, collaboration, synergy, and interoperability among the involved entities are the key parameters for the successful implementation of the Civil Protection Cycle in our country.

3.4 Relevant national policies and plans for the organization of Civil Protection in Greece

The organization of Civil Protection in Greece is based on two (2) national-scale strategic plans that reflect the national policy in Civil Protection, serving as a framework for medium to long-term goals. These plans specify various areas of planning, such as environmental management, safety, health, education, labor, etc., incorporating this approach.

Specifically, the national policies and plans on which the organization of Civil Protection relies are:

1) National Hazard Mitigation Policy

"The General Secretariat for Civil Protection (GSCP), following the recommendation of the Coordinating Body for Civil Protection, designs the National Hazard Mitigation Policy every six (6) years. The top-level National Policy aims to increase the safety of citizens and enhance the sustainable development of the country. In its formulation, factors such as the analysis of disaster risk in relation to available financial resources, horizontal and sectoral policies, especially those related to environmental protection and climate change, health, safety, education, and training are taken into account. Public bodies by virtue of their competence, academics, research institutions, productive sector entities, and other private sector entities associated with disaster risk management may participate, following a decision by the General Secretary for Civil Protection. The National Hazard Mitigation Policy is submitted for approval to the Interministerial Committee for

National Civil Protection Planning. The approved program is integrated into the country's development planning and constitutes a key axis for achieving sustainable development."

2) National Civil Protection Planning

"A three-year 'National Civil Protection Planning' is established, encompassing all civil protection actions concerning all phases of the disaster cycle at the national level. The preparation of the National Planning Program is in accordance with the National Hazard Mitigation Policy and within its prescribed limits. Relevant actions are financed primarily by the state budget and European Union resources. The General Secretariat for Civil Protection promotes and coordinates the processes for preparing the proposal for the three-year National Civil Protection Planning program, in the form of an Operational Program for Civil Protection. The General Secretary for Civil Protection proposes the approval of the proposal to the Interministerial Committee for National Civil Protection Planning after the necessary consultation among the bodies and structures of the National Mechanism. The National Civil Protection Planning is formulated at both national and regional levels, including programs, measures, and actions of central ministries and supervised entities, taking into account the specificities of islands, especially small and more remote ones. The National Civil Protection Planning includes the budget for civil protection of each ministry, as well as the budget of the General Secretariat for Civil Protection in terms of operational and investment expenses, with a three-year forecast, which is taken into account in the preparation of the state budget each fiscal year."

3.5 Operational and Support Structures of the National Mechanism of Civil Protection in Greece

In support of the central and decentralized bodies of Civil Protection, planning, decision-making, and coordinating functions, specific single-member or collective bodies, administrative structures, groups, and committees are recommended at all levels of public administration.

The operation of Coordinating Bodies is foreseen both at the central level and at the level of local government, both at the first and second degrees. These are broadly composed administrative collective bodies with members from various entities related to civil protection, having coordinating responsibilities throughout the disaster management cycle.

A) Civil Protection Coordination Body (CPCB)

The Civil Protection Coordination Body (CPCB) is formed at the central level and constitutes the highest operational structure of the National Mechanism. Its composition includes the Secretary-General of Civil Protection (SGCP) as the

president, the Coordinator of the Civil Protection Coordination Body as the vice president, representatives of security forces, EMS, and the 13 Regional Coordinators of Civil Protection.

The CPCB's mission is to coordinate actions for the preparation, scientific documentation, and implementation of civil protection planning at the national level. This includes specialization through proposals to the General Secretariat of Civil Protection for the planning of the National Disaster Risk Reduction Policy. It also involves taking measures for the assessment and prediction of hazards, vulnerabilities, and threats for the optimal handling of emergency situations, reducing the negative consequences of impending disasters, informing citizens about these issues, coordinating restoration actions, ensuring their implementation, and collaborating with public entities on matters within its competence.

Organizational and functional issues, such as staffing and other service-related matters, are regulated by the decision of the responsible Minister upon the proposal of the Secretary-General of Civil Protection.

B) Regional Operational Civil Protection Coordination Bodies (RO-CPCBs)

The Regional Operational Civil Protection Coordination Bodies (RO-CPCBs) are established at the Regional level for the operational mission of the CPCB. They constitute a basic operational structure of the National Mechanism and are defined as Decentralized Regional Civil Protection Bodies. The composition of the RO-CPCB, established by decision of the Regional Governor who serves as its president, includes members and personnel from regional self-government, operational agencies (Fire Brigade, Police, Coast Guard, EMS), the forestry service, and any other individual or representative of an entity that, at the president's discretion, can contribute to the RO-CPCB's objectives.

According to Law 4662/2020, their responsibilities include directing, at the regional level, the work of the Local Civil Protection Coordination Bodies (LCPCBs) for addressing emergency situations throughout the disaster management cycle, coordinating the operation planning of the Regional Civil Protection Plans, monitoring their implementation phases, planning, organizing, and implementing citizen information and alert actions, concluding memoranda of cooperation with other regional bodies for mutual assistance in human resources, materials, and civil protection means.

C) Local Civil Protection Coordination Body (LCPCB)

The Local Civil Protection Coordination Body (LCPCB) is a collective body established as a Decentralized Civil Protection Body for the operational mission of the RO-CPCB at the municipal level. It is formed by decision of the Mayor, who acts as the president. Alternatively, the Deputy Mayor for Civil Protection or an authorized Advisor for Civil Protection appointed by the Mayor can serve as the

president. Its composition includes members and employees of the municipality, operational agencies (Fire Brigade, Police, Coast Guard, EMS), the forestry service, and anyone else who, at the president's discretion, can contribute to the LCPCB's objectives. The SGCP may regulate other organizational, functional, and technical issues by decision.In some cases, LCPCBs have operated, mainly in the context of addressing the pandemic or preventing wildfires. However, their functioning seems to be relatively limited.

"The LCPCB's responsibilities include: a) directing the local-level civil protection work for emergency situations throughout the disaster management cycle, b) planning, organizing, and implementing citizen information and alert actions, and concluding memoranda of cooperation with other local bodies for mutual assistance in human resources, materials, and civil protection means."

3.6 Information Management and Operation Centers

National Coordination Center for Operations and Crisis Management (NCCOCM)

The National Coordination Center for Operations and Crisis Management is an operational structure of the National Mechanism and Special Central Service of the Fire Department. It is subordinate to the Chief of the Fire Department and has the following main responsibilities:

- ✓ Operational coordination of the mobilization of firefighting forces, equipment, and resources, following the orders of the natural leadership of the Fire Department, in the context of fulfilling its mission.
- ✓ Assistance to domestic entities and entities of other countries within the framework of international agreements.
- ✓ Operational coordination and collaboration of all relevant services in the implementation of the National Civil Protection Plan at national, regional, and local levels, to address serious incidents.

Regional Civil Protection Operational Centers (RCPOC)

The Regional Civil Protection Operational Centers constitute operational structures of the National Mechanism at the regional level. They are primarily responsible for collecting, processing, and transmitting information related to ongoing events or threats, for accurate situation assessment and decision-making by the competent authorities.

They have not been established yet, pending the decision of the Chief of the National Mechanism regulating their staffing, organization, and operation.

Other Operation Centers

In the General Plan with the code name "XENOKRATIS," the option is provided to organize other Operation Centers at the regional level, but this option has not been extensively utilized. The establishment of Operation Centers at the municipal level is not envisaged. Despite the administrative reform of "Kallikratis," which theoretically strengthened municipal structures, it did not bring any changes to this area. However, some municipalities, on their initiative, organize KEPIK (e.g., Heraklion, Neapoli-Sykies, Argiroupoli, Penteli, Rafina-Pikermiou, Vyronas, etc.), usually staffed with volunteers.

In many other entities, the decision is left to organize Operation Centers, which, although not part of the National Mechanism's structures, play a significant role in ensuring effective communication and rapid information flow, especially in emergency situations. For example, the Hellenic Police and the Fire Department, given their decentralized operating system, 24-hour organization, and available resources, are called upon to conduct the "initial" assessment and collect information about the prevailing situation (progression of the disaster, affected areas, etc.) and inform the Regional Civil Protection Operational Center (RCPOC) and the relevant regional Civil Protection agencies. The Unified Coordination Center for Operations and Crisis Management of the Hellenic Police and the Regional Operational Centers of the Regional Fire Departments of the Fire Department play a crucial role, and their assistance in this direction is essential.

Operation Centers are established on a case-by-case basis or as needed in other entities, contributing to information management. For instance, the Unified Search and Rescue Coordination Center and the Operation Center in the Coast Guard, the Health Operation Center in the Emergency Medical Aid Service, for coordinating the provision of immediate assistance and emergency medical aid in situations of emergencies and crises, the Operational Readiness Center (Law 4313/2014, Article 81) of the Ministry of Infrastructure for addressing emergencies and crisis management related to all objects of the Ministry, etc.

3.7 According to the National Mechanism: Gradation of Readiness Status

According to Law No. 4662/2020 regarding the National Mechanism, the characterization and categorization of disasters are abolished, and the mobilization of resources is graduated and distinguished into: a) **State of Preparedness** and b) **State of Emergency**.

The **State of Preparedness** is graded as follows:

- Normal Readiness State (**Green Code**): Entities involved in civil protection activities monitor, upon warning of the occurrence of a mild-risk event or mobilization, following the manifestation of a low-risk event. They check the

availability of human resources, materials, and assets, and implement specific action plans and memoranda of actions as needed.

- Increased Readiness State (**Yellow Code**): Involved entities enhance their readiness upon the manifestation (or warning) of a medium-risk event and activate specific Operational Plans.
- Standby State (**Orange Code**): Entities exhaust preparedness measures and stand by, increasing staffing levels, following the manifestation of an increased-risk event or a warning of any kind of threat.
- Mobilization State (**Red Code**): Activated immediately after the occurrence of a catastrophic event or in the case of a serious probability of disaster or any kind of threat. The National Mechanism is fully mobilized, activating and deploying the necessary human resources, materials, and assets, initiating short-term actions for restoration, assistance, and support to mitigate the impact of the disaster.

According to the above, the graduated mobilization of human resources and assets occurs based on the escalation of the threat or warning or the dangerousness of an event.

The State of Emergency is defined as follows:

"The state of emergency of civil protection arises in the case of a large-scale natural or technological disaster affecting the population and infrastructure, for the management of which the immediately available resources, means, and materials of the managing entities at the local, regional, or national level are insufficient. Urgent measures of a specified duration are required, as defined in the institutional framework, by the guiding directives, circulars, and regulatory acts of the administration, regarding the declaration of areas in a state of emergency of civil protection. Any specific issues not included in the above are regulated by a joint decision of the Minister of Citizen Protection and the respective competent Minister."

A significant innovation of the National Mechanism is the declaration of a State of Special Civil Protection Mobilization due to an impending danger or warning of increased risk of natural and technological disasters. In this case, measures of a specified duration are taken, corresponding to those of declaring an area in a State of Emergency of Civil Protection.

3.8 Plans of the Civil Protection System in Greece

For the achievement of the purpose of civil protection, the development of civil protection plans by the involved public administration entities is stipulated. In the General Plan, with the code name "XENOKRATIS" (which stands for "FOREIGN RULE"), the entities that prepare civil protection plans by risk category (earthquakes, forest fires, floods, landslides, etc.) are specified, and basic requirements for their design and coordinating guidelines for their preparation are

provided. In this context, General Plans are to be drafted by the General Secretariat for Civil Protection (GSCP), and Special Action Plans (SAPs) are to be prepared by Ministries, Decentralized Administrations, and Regions. Municipalities also have an obligation to prepare emergency plans, as defined by the latest provisions of the Kallikratis reform (Law No. 3852/2010). Moreover, the drafting of Action Memoranda on a case-by-case basis is also envisaged.

The preparation of civil protection plans follows a linear process, from the central to the local level, with the GSCP coordinating the design. The development of civil protection plans by the obligated entities and the harmonization of planning have proven to be an extremely challenging process.

For the customization of approved General Plans, as they vary according to the mission of each entity and local specificities, the GSCP issued the "Manual for Drafting and Harmonization of Special Plans by Disaster at the Ministry or Another Central Authority Level" in 2007. In 2009, it also issued the "Manual for Drafting and Harmonization of Emergency Plans by Disaster for the Region and the Prefectural Self-Government in Implementation of Ministerial Decision 1299/2003 XENOKRATIS."

However, it was only in 2020 that templates for first-degree local authorities (OTA) were issued. While the development of General Plans by risk category by the GSCP was relatively delayed, with the first one issued in 2009 for technological accidents. A year later, the General Plan for forest fires was formulated, followed by the plan for the management of human losses. The majority of General Plans were issued or revised just a few days before the passage of Law 4662/2020 on the National Mechanism.

Simultaneously, the anticipated institutional regulations for the control, monitoring of the implementation of civil protection plans, and their approval were never implemented.

The Directorate of Civil Protection of the Decentralized Administration of Macedonia-Thrace issued the "Memorandum of Actions for the Prevention and Management of Risks from the Occurrence of Flood Phenomena" in 2020, as part of the "DARDANOS" plan. In October 2022, the 2nd Edition of the General Emergency Response and Immediate/Short-Term Management Plan for the Consequences of Flood Phenomena was created, under the code name "DARDANOS 2," within the framework of the General Civil Protection Plan with the codeword "XENOKRATIS." The Ministry issues maps of areas declared in a state of emergency due to floods, in correlation with flood risk zones. In October 2022, additional guidelines were issued regarding Projects and measures for flood prevention.

To facilitate Civil Protection entities, the GSCP issues annual guidelines regarding their responsibilities and their institutional role, as well as for civil protection actions. These guidelines are considered binding for public administration entities,

as they are issued within the framework of the GSCP's authority to prepare and mobilize the country's civil protection mechanism for any form of disaster.

According to the mandates of the new law on the National Mechanism, the process regarding the preparation of civil protection plans is revised. The GSCP prepares the General Plans, each region the Regional Plan, and each municipality the Local Plan. The GSCP now approves only the General Plans, while the Regional and Local Plans are approved by the respective regional and municipal authorities.

Until the issuance of the new plans, the existing ones remain valid, according to the table 1 below:

Name of the project	Year of Issue	Year of Review
General Civil Protection Plan	2003 "XENOCRAETES"	
General Plan for Major Technological Accidents (General PMTA)	2009	2018 2020 "HERACLITUS"
Special Human Loss Management Plan	2011	2017 2019
General Plan for Emergency Response and Immediate/Rapid Management of the Consequences of Flood Events	2019 "DARDANOS"	
General Plan for Emergency Response and Immediate/Rapid Management of Consequences of Earthquake Events	2020 "EGELADOS"	
General Plan for Emergency Response and Immediate/Rapid Management of Consequences of the Volcanic Activity in the Volcanic Complex of Santorini	2020 "TALOS"	
General Plan for Emergency Response and Immediate/Rapid Management of Consequences of the Snow and Frost Event	2020 "VOREAS"	
2nd Edition of the General Plan for Emergency Response and Immediate/Rapid Management of the Consequences of Flood Events	2022 "DARDANOS 2"	

Table 1 – General Civil Protection Plans

General Civil Protection Plan, codenamed "XENOKRATIS" (2003)

The General Civil Protection Plan, codenamed "XENOKRATIS," was created in 2003. Its purpose is to establish an effective system to address catastrophic events for the protection of life, health, property, and the natural environment.

According to the General Plan codenamed "XENOKRATIS":

- Specifies the types of disasters, the roles, and responsibilities of all involved entities at each level of administration (central, regional, local), and in all phases of the Civil Protection system's mobilization. It clarifies that the approval of all plans is done by the General Secretariat for Civil Protection (GSCP).
- Identifies the involved services and entities, as well as the bodies directing and coordinating operational teams at all levels.
- Provides basic elements for risk assessment, identifies vulnerable areas, and develops specific plans for each risk.
- Gives guidelines for devising strategies and tactics, organizing and equipping services, timely mobilization, activation, management, and coordination of human resources and assets, as well as administrative care for addressing issues of both operational forces and affected citizens.

General Plan for Coping with Emergency Needs and Immediate/Short-term Management of Consequences from Flooding Events, codenamed "DARDANOS 2"

The General Plan for Coping with Emergency Needs and Immediate/Short-term Management of Consequences from Flooding Events aims for the immediate and coordinated response of involved entities at the central, regional, and local levels. The goals are:

- ✓ Implementation of preparatory measures and civil protection actions contributing to the readiness of human resources and means for addressing emergency needs and the immediate/short-term management of consequences from the occurrence of flooding phenomena.
- ✓ Effective response to emergency needs arising from flooding events and the immediate management of their consequences. Actions aim to protect the lives, health, and property of citizens, as well as the protection of the natural environment, wealth-producing sources, and the country's infrastructure.

Prerequisites for achieving this purpose include synergy, cooperation, and interoperability of involved entities at the central, regional, and local levels.

The objectives of the General Plan for Coping with Emergency Needs and Immediate/Short-term Management of Consequences from Flooding Events, codenamed "DARDANOS 2," are:

- Determination of roles and responsibilities of all involved entities at the central, regional, and local levels and in all phases of the Civil Protection system.

- Implementation of preparatory measures and Civil Protection actions contributing to the readiness of human resources and means for addressing emergency needs and immediate/short-term management of consequences from flooding events.
- Coordinated action of involved entities in addressing emergency needs and immediate/short-term management of consequences from flooding events.
- Harmonization of the planning of all involved entities with this plan.

In addition, within the framework of the Programming Period 2021-2027, the Operational Program for Civil Protection has been drafted, providing financial tools for implementing the relevant strategy. The strategy focuses on creating a modern and effective civil protection mechanism, emphasizing risk prevention, readiness for response and intervention, aiming to protect life, health, property, the environment, cultural heritage, infrastructure, vital resources, and materials and immaterial goods from natural and technological disasters and other related threats that may cause or may lead to situations of emergency.

Finally, the Copernicus Emergency Management Service European Program offers the possibility for each EU member state, as well as participating states in the European Civil Protection Mechanism, to directly map events using satellite data and to use further tools for managing these emergency situations. Among the services of the program is the European Flood Awareness Systems (EFAS). The goal of EFAS is to provide early warning for implementing preparedness measures before serious flooding incidents, focusing on river basins at the borders of member states. In 2022, the General Secretariat for Civil Protection (GSCP) issued circular No. A516/01-07-2022 titled "Guidelines for activating the Copernicus Emergency Management Service European Program."

This program has already been applied in several cases. Below are indicative screenshots from incidents recorded at the national level and the mapping of a specific case.

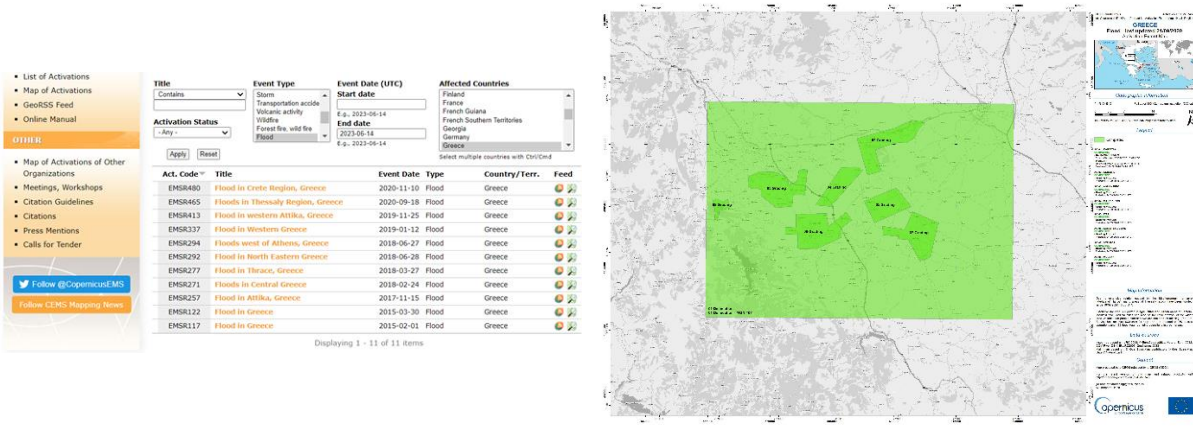


Figure 2 – Screenshots from the Copernicus Emergency Management Service

3.9 Volunteering in the Civil Protection System in Greece

In dealing with emergency situations, there are several cases where the increased intervention requirements exceed the capabilities of the respective states. Globally, the emerging trend is the self-management of situations, as expressed by the institution (or movement) of volunteering. Local populations are the people who know their areas best, and therefore, their experience and knowledge are often invaluable.

Civil Protection Volunteering System

In an initial attempt to organize society into networks and highlight the effectiveness of Volunteer Organizations (VO) and their intervention capabilities, the General Secretariat for Civil Protection (GSCP) piloted the Civil Protection Volunteering System in 2001. This system was later institutionalized by law, aiming for a more systematic utilization of VOs in addressing natural disasters. VOs are considered resources and actively participate in the Civil Protection system. A civil protection volunteer is defined as a natural person who is a member of a volunteer organization, integrated into the civil protection workforce, and provides non-profit and non-commercial services in collaboration with local government agencies and other operational bodies. Today, the GSCP maintains a Register of Volunteer Organizations in Civil Protection, where VOs are included by decision of the GSCP, with a specific reference to their geographical area of action (National, Regional, Prefectural, Municipal). Their operational integration is foreseen through active participation in the Coordinating Bodies of first and second-degree local authorities.

Civil Protection Volunteer Organizations support state agencies in all phases of the disaster management cycle, through the following actions:

a) Operational Actions:

1. Actions for forest protection to prevent forest fires.
2. Actions for forest firefighting to suppress forest fires.
3. Urban firefighting actions to suppress fires in urban environments.
4. First aid actions to apply a sequence of actions to prevent the worsening of the condition of the injured or patients.
5. Search and rescue actions involving the process of locating and providing assistance to people in danger or threatened by imminent danger.

b) Support Actions:

1. Telecommunications actions.
2. Psychological support actions.
3. Information and warning actions.
4. Care for the wounded actions.
5. Transportation actions.

Organization and operation of gathering places actions.

The organization of Volunteer Organizations with regard to their legal form usually follows the provisions of the Civil Code concerning the establishment of associations, clubs, non-profit legal entities, non-governmental organizations, etc.

4 Civil Protection System in Republic of North Macedonia

4.1 ESTABLISHMENT AND ORGANIZATION OF CIVIL PROTECTION IN NORTH MACEDONIA

4.1.1 National Platform for Disaster Risk Reduction in North Macedonia

The National Platform for Disaster Risk Reduction is a document that systematically encourages and obliges the subjects of the crisis management, protection and rescue system to act in a much more organized and effective way for early warning, prevention, reduction and remediation of the consequences of possible disasters. This platform in addition to the commitments from the Hyogo and the European Forum, the essential determinations from the Sendai Disaster Risk Reduction Framework, анд the Paris Agreement on Climate Change and other documents are also incorporated. Priority is given to the organization of the system for action in crisis conditions, institutional capacities, regional and international cooperation, as well as defining and concretizing the priority obligations of state institutions, mobilizing the public, the non-governmental sector, the expert and professional public in building the system for protection and increase of its operability, efficiency and effectiveness.

The national platform for disaster risk reduction is a sublimation of the priorities, expectations and obligations that are in function of building an effective and efficient system for protection and rescue.

The national platform for disaster risk reduction is based on obligations arising from the Constitution of the Republic of North Macedonia, the National Concept for Security and Defense, the National Strategy for Protection and Rescue, the Law on Crisis Management, the Law on Protection and Rescue, the Law on Police, the Defense Law, the Methodology for the content and method of hazard assessment and protection and rescue planning and other analyses, assessments, scientific papers, etc.

The laws also define specific obligations of state institutions, public enterprises, companies, citizens and other subjects of the crisis system, especially the President of the Republic of North Macedonia, the Parliament of the Republic of North Macedonia, the Government of the Republic of North Macedonia, the Center for Crisis Management, the Protection and Rescue Directorate, the Ministry of Internal Affairs, the Ministry of Defense, the Ministry of Health, the Army of the Republic of North Macedonia and other subjects of the crisis system.

Priorities are also drawn from international strategies and frameworks adopted by the UN such as the Hyogo Framework for Action and the Sendai Framework for Action.

The Platform specifically elaborates the obligations arising from the Sendai Framework for Action in which the top priorities are defined.

4.1.2 European Forum

The European Forum for Disaster Risk Reduction is a regional forum for the exchange of knowledge, expertise, experience and information, with the aim of ensuring a coordinated approach to threats of different nature, where standardized procedures and mechanisms are defined and are binding for national authorities. The European Forum aims to ensure continuous actions to reduce disaster risk and prevent the emergence of new risks, to support national contact points and to encourage national coordination, coherence and enhanced monitoring of progress, to raise awareness of reduction of disaster risks as an integral part of sustainable development, to ensure adaptation to climate change through environmental improvement, reduction of urban pollution, etc., to encourage investments in risk prevention, to strengthen the commitment of all stakeholders and from the public and private sector, to develop mechanisms for informing citizens how to act in case of certain threats, etc. The Republic of North Macedonia has been a member of this forum since 2009, and 46 European countries are included in it.

4.1.3 NATO

With the ratification of the protocol for the accession of the Republic of North Macedonia to the North Atlantic Alliance, our country also gains access to the Euro-Atlantic Disaster Response Coordination Center (EADRCC), which is the main civilian response mechanism of NATO in the Euro-Atlantic area. It is active throughout the year, operational 24/7. The center functions as a system for coordinating aid requests from member states and response from NATO aid structures, mainly in the case of natural and man-made disasters.

4.1.4 EU

The European Commission has a key role in promoting risk reduction and preventive actions. In 2016, the European Commission agreed to the Action Plan for the implementation of the Sendai Framework for Action, supporting a disaster risk communication approach in all EU policies. The EU focuses on vulnerability, not just hazards. The EU is pursuing a broader approach to risk mitigation.

Over the past years, risk management has been systematically integrated into EU humanitarian aid programs and projects in all sectors. In 2017, 65 percent of all humanitarian projects funded by the EU included a disaster preparedness component.

The EU allocates part of its annual humanitarian budget (€50 million in 2018) to targeted projects related to disaster preparedness, focusing on Sendai Priority 4 (Improving disaster preparedness and effective response using a multi-hazard

approach)). This funding strengthens the ability of national and local preparedness systems to respond earlier and better.

The EU is also investing in early warning systems, monitoring and building national and local response capacities. The EU supports partners in developing effective risk mitigation methods and gathering evidence to justify preparedness for early action.

Any disaster preparedness strategy and resource allocation include a defined exit strategy, where local capacities are deemed adequate or where local authorities or development partners can take over.

In addition, the EU engages and supports local and national government structures in all countries around the world through the EU Civil Protection Mechanism, particularly in the areas of prevention and preparedness.

The EU Aid Volunteers initiative, which offers opportunities for European citizens to get involved in humanitarian aid projects, aims to strengthen the capacity and resilience of vulnerable communities in non-EU countries by implementing joint actions between experienced humanitarian operators and local organizations.

Weather-related disasters may be due to the effects of climate change, a trend that will increase in the future, making disaster risk mitigation a key factor in the successful implementation of development strategies.

In June 2013, the institutions of the European Union (the European Parliament at the proposal of the European Commission) adopted an Action Plan for countries with difficulties in dealing with crises 2013-2020, in which proposals are made for progress in the implementation of the principles and the priorities stated in the Communication and Conclusions of the Council. It lays the foundations for more effective cooperation in the EU to build resilience, bringing together humanitarian action, long-term development cooperation and ongoing political engagement.

Under the Floods Directive (Directive 2007/60/EC on the assessment and management of flood risks), all EU countries are required to assess all areas where significant floods could take place map the flood extent and assets and humans at risk in these areas take adequate and coordinated measures to reduce this flood risk

The rights of the public to access this information and to have a say in the planning process are also important elements of the Directive.

EU countries are required to create and update Flood Hazard Maps and Flood Risk Maps. Flood Hazard Maps should cover the geographical areas which could be flooded and Flood Risk Maps show the potential adverse consequences associated with these flood scenarios. These maps form the basis for the drafting of flood risk management plans.

Flood risk management is an integral part of integrated river basin management. The Floods Directive is therefore closely coordinated with the Water Framework Directive. In particular, coordinating flood risk management plans, river basin management plans, and public participation procedures.

4.1.5 Evaluations and recommendations of the European Commission

In the period from October 15 to October 25, 2018, the "Peer review" Program was implemented in the Republic of North Macedonia (a formal evaluation by experts from other countries working on the same issue, who analyze the disaster risk management system) within the framework of cooperation with the EU on civil protection and disaster risk management. The aim of the process is to ensure the exchange of good practices, to strengthen common learning and common understanding, and to make credible and professional recommendations.

The evaluation team submitted a report, in which good practices were identified, but also the areas in which improvement is needed and a series of recommendations were made for them. Since the problems and challenges identified during the evaluation are systemic and structural in nature, the report formulated a strategy for dealing with the factors from which they arise and offered a series of short, medium and long-term recommendations. It is emphasized that these recommendations, if operationalized by policy makers, can improve the safety and security of citizens in North Macedonia.

All subjects of the crisis system have an obligation to implement the recommendations of the "Peer review" prepared by the EU, where basically the reform of the crisis system, protection and rescue, ensuring functional unity, efficiency and effectiveness of the system in management is proposed, protection and rescue in crisis conditions.

The EU Commission Progress monitoring report 2022 for North Macedonia[3] clearly states the progress made on civil protection in the reporting period- "the new national strategy for protection and rescue for the period 2022- 2025 was finalised. As regards the Union Civil Protection Mechanism (UCPM), North Macedonia is a participatory state already. The country submitted the required summary of the national risk assessment in March 2022. Further steps were taken to finalise the technical connection to the Union's Common Emergency Communication and Information System (CECIS). Wildfires and COVID-19 crisis highlighted the need to strengthen the legal framework and institutional capacities of the civil protection authorities".

The 2023 progress report for North Macedonia stated that on civil protection, the European emergency call number E 112 has been available to people across the

[3] North Macedonia Report 2022.pdf (europa.eu)

country since February 2022. Furthermore, the fleet of firefighting planes was serviced and new firefighting equipment was acquired. North Macedonia signed the revision of the administrative arrangement with the Union Civil Protection Mechanism. Also it stated that despite its longstanding participation in the system, no progress has been made in linking the national emergency communication system to the European Commission's Common, Emergency, Communication and Information System (CECIS) or in better defining the role of the national coordinator for the National Platform on Disaster Risk Reduction. The new national protection and rescue strategy for 2022-2025 is yet to be adopted. The country needs to take concrete steps to introduce a mandatory training programme for all territorial, fire and rescue/civil protection staff[4]

The basic objectives of the Platform are prevention, first of all by reducing the risks of disasters, early warning, acting in disaster conditions, reducing the consequences of disasters and acting after catastrophes.

4.1.6 Prevention

The state can contribute to the reduction of material damage and human casualties from disasters only if the actions undertaken by state and local institutions are aimed at successfully managing disaster risks before they occur, instead of managing disasters after they occur. Therefore, the emphasis should be placed on the prevention of new risks and the reduction of existing ones, and the primary responsibility of all institutions should be in that direction, prevention of natural disasters and disasters caused by the human factor.

Prevention is based on two foundations: hazard identification (identification of the real threats facing the community) and vulnerability assessment (assessment of the risk and capacity of the community to cope with the consequences of the disaster).

In accordance with modern challenges and developments, greater focus is placed on the prevention of risks caused by climate change, unplanned and rapid urbanization, poor land management, demographic changes, weak institutional engagement, citizens' lack of information, limited availability of technology, unsustainable use of natural resources, etc.

For prevention to be efficient and effective, it should cover the various types of dangers and be inclusive and accessible to all citizens. The government, which has the key, leading and coordinating role in the process, should include all stakeholders: women, children, people with special needs, people from lower social strata and senior citizens in the creation and implementation of policies, strategies and action plans. The public and private sectors, civil society organizations,

[4] SWD_2023_693 North Macedonia report.pdf (europa.eu)

academic, scientific and research institutions, and the business sector should also be involved here in order to integrate disaster prevention in their management.

1. For better prevention, risk assessment and preparedness for an effective response to disasters, the understanding of disaster risks with all their dimensions and characteristics, vulnerability and exposure of people and property is of crucial importance.

In order to more accurately understand the risks of disasters, it is necessary (at the national and local level) to approach the collection, analysis and use of relevant data and practical information and their appropriate sharing, dissemination and distribution to different categories of citizens and institutions, such as and access and availability of this information in real time; to carry out periodic assessments of risks, vulnerability and exposure to hazards and to create risk maps using modern information and communication technology innovations, to publicly announce and explain material and human losses from disasters, through sharing experiences and lessons learned to adequately train and educate government representatives and representatives from the local self-government, the civil and private sectors on what activities to undertake, to improve the cooperation and dialogue between the scientific and technological communities and other relevant institutions in order to ensure a scientific approach in the creation of policies.

It is recommended that information on disaster risks, prevention and mitigation, preparedness, response and rehabilitation be embedded in all forms of formal and informal education at all levels, as well as in vocational education and training.

The top priority in the coming period is the renewal of all state and local disaster risk assessments, an obligation that is defined in several laws.

2. A clear vision, plan, guidelines, coordination and active participation of all stakeholders is needed for efficient and effective disaster management. In that direction, each member state of the United Nations should prepare and implement a strategy and action plan for disaster risk reduction, with specific time frames, goals and tasks aimed at preventing and preventing the creation of risks, reducing existing risks and strengthening the resilience of society.

Every three years, the Republic of North Macedonia will adopt an action plan with specific activities, holders of the activities and specific deadlines for the realization of the obligations.

3. The state should stimulate investments in the public and private sectors as a preventive measure against potential disasters, which will contribute to saving human lives and protecting material goods, and should contribute to strengthening the economic, social, health and cultural resilience of citizens and society as a whole, as well as the environment.

In that direction, the public and private sector should be encouraged to invest heavily in critical infrastructure and facilities such as schools, hospitals, kindergartens, sports facilities, etc., while adhering to the highest international standards for construction and building materials and using principles of universal design. and performance. For what has already been built, it is necessary to regularly renovate, reconstruct and maintain, and in general to create a culture of care for the infrastructure, by controlling the resistance of dams, bridges and other facilities.

In addition to state policies and strategies, the Republic of North Macedonia, as a member of the United Nations, has the responsibility to prevent, prevent and reduce the risks of disasters through international, regional, cross-border and bilateral cooperation.

The reduction of risks is a common obligation and concern of all UN member states and therefore it is necessary for them to cooperate, from where the obligations and recommendations of the Republic of North Macedonia derive.

4.1.7 Early warning

By building a developed and functional early warning system, the possibilities for reducing the consequences of disasters are enormous.

In this direction, through early warning, it is possible to prevent and reduce the risks and consequences of disasters such as floods, fires, winds, snow drifts, low temperatures, air pollution, etc., which is crucial to avoid human casualties. and to reduce economic damages.

Through an integrated water management system, timely detection of fires, detection of air pollutants, regulation of riverbeds, cleaning of the canal network, etc., the consequences of this and similar types of natural disasters can be greatly reduced.

The implementation of the "112" system will largely ensure timely information to the citizens and the competent institutions about possible disasters and activation of the crisis system. Quick information and mobilization of the subjects of the crisis system are key to efficient and effective action, prevention and reduction of the consequences of disasters.

Installation of earthquake forecasting systems, assessment of possible rainfall amounts, installation of fire alarm systems, monitoring of air pollution, alarming for possible accidents in industrial facilities, etc., necessitates the need to develop and use sophisticated warning systems which are crucial for early warning of possible disasters.

In this direction, through legal solutions, all subjects should have a legal obligation to develop a system for detecting possible disasters and a way of informing state institutions and citizens.

According to established practices and standards, during disasters, it is necessary to build a system for giving directions, how citizens and other subjects should act, and procedures must be elaborated, all in order to reduce the consequences. This process (educational and training) must be continuous.

In order to inform the citizens about possible or occurring disasters (crises), it is necessary to implement other projects, such as informing through phone messages, etc. Solutions that are already applied in some EU countries. In this direction, one of the efficient alerting systems is Alert Macedonia (.....) etc.

4.1.8 Response during crises

Crisis response, taking appropriate measures and activities in the wake of, during and immediately after crises (disasters) must ensure that its effects are minimized and that persons affected by the event receive assistance and support.

Priority goals are:

- providing information to the public;
- protection of human life;
- limiting the escalation or spread and mitigating the impacts of disasters;
- protecting the health of the population;
- Environmental Protection;
- property protection;
- maintaining normal services at an appropriate level (security, water supply, food, medicine, etc.);
- promoting and facilitating self-help in vulnerable environments;
- facilitating population recovery (including humanitarian aid, economic, infrastructural and environmental impacts).

It is necessary for all entities to undertake legal obligations and prepare action plans in the event of a disaster, that is, a crisis with potential consequences. Plans should be continuously renewed and supplemented.

4.1.9 Repairing the consequences of crises

The need for recovery is a top priority after occurring disasters and crises, ie natural and unnatural disasters, such as earthquakes, floods, fires, etc. Reconstruction is a complex and long process, while the approach is different in such cases and depends on the type and degree of threat and consequences of the crisis.

The recovery element as part of a comprehensive approach to disaster management - prevention, preparedness, response and recovery - can be the most

complicated and long-lasting, as it depends on material and other resources (personnel, etc.) among other things.

The best results are achieved by providing recovery strategies and matching opportunities with needs.

A joint, coordinated, adaptive approach is needed, where responsibility for disasters and recovery is shared among all sectors of the state, including individuals, families and community groups, businesses, etc.

An approach led by state institutions supports the rapid restoration of services essential to human needs and represents an opportunity to build and improve conditions in the affected areas and beyond.

Local self-government units, companies, and the non-governmental sector play a key role in disaster recovery planning, but state institutions, which have professional staff, financial resources, and other types of resources, also play a key role.

4.1.10Floods Risks - possible consequences of disasters, human casualties, property destruction (integrated water management system)

Floods can be divided into river floods, flash floods and urban floods. River floods mainly occur after heavy or torrential rains that last for a long time (several days) consecutively with and without a combination of melting of the existing snow on the mountains. It is a hydrological phenomenon where a sudden rise in the water level in rivers and lakes occurs as a result of meteorological phenomena (rainfall, melting snow), then as a result of the collapse of dams, but also when river channels overflow due to artificial or naturally built obstacles on bridges made of applied materials (wood, rubble, garbage, waste), non-properly dimensioned bridges and hydro- technical facilities, etc., all of which in certain situations call into question the normal functioning of infrastructure systems.

Flash floods are short-term floods with great destructive consequences and the occurrence of human casualties. They occur as a consequence of the occurrence of short-lasting torrential rains with high intensity and a large amount of water, which fall on relatively small catchment areas in a period of 15 minutes to 6 hours. The largest number of victims all over the world occur as a result of this type of flooding, and statistically speaking, the largest number of victims are children, frail persons and elderly persons.

Urban floods occur in a situation of short-term torrential intense rainfall, primarily in conditions of urban chaos, improperly built buildings and an inadequate water retention system in the upper parts of the basins and a regular storm water drainage system. In many situations, floods occur as a result of the negligence of city and urban authorities, who do not carry out normal operation and maintenance

of atmospheric and sewage systems. Drainage manholes and canals are not regularly maintained and cleaned after every heavy rain, and the irregular inspection of buildings and their atmospheric discharges, which regularly end up in the sewer network, remains a major problem. Legally, storm water may not be directed from buildings directly into the sewerage network, i.e. it is forbidden to run gutters from buildings into the sewage network for fecal and waste water.

Inadequate drainage of large amounts of water as a result of heavy rain can lead to flooding and cause extensive property damage. Also problematic are those places where there is no permanent river flow. In such cases, a sudden influx of water can occur in a short time. These situations should be taken very seriously because they can threaten human lives, economic and individual assets, as well as residential and other types of infrastructure facilities. The eddy currents cause aggressive soil erosion and this makes the area much more vulnerable. The significance of these meteorological phenomena is increasingly expressed as urbanization increases, that is, the usurpation of torrential flows, and if they are treated in an inappropriate and unprofessional manner, the consequences will be inevitable.

To ensure the protection, preservation and continuous improvement of the water regime, to improve the condition of aquatic ecological systems and ecological systems dependent on water and to protect and improve the aquatic environment through rational use of waters, progressive reduction of harmful discharges and gradual elimination of the emissions of hazardous substances, as well as mitigation of the consequences of the harmful effects of water and the lack of water, need appropriate implementation of the integrated water management system. In that direction, steps are being taken to regulate the right of natural and legal persons to use water, to discharge wastewater, i.e. to discharge and throw substances and substances into surface and underground waters, as well as to remove sand, gravel and stone from the riverbeds. and the shores of surface water bodies. It should greatly contribute to reducing the consequences of floods.

4.1.11Action Plan for Implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia 2022-2024

The obligation for preparation of an Action Plan for Implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia 2022-2024 arises from the National Platform for Disaster Risk Reduction of the Republic of North Macedonia (hereinafter: National platform). The document was adopted by the Government of the Republic of North Macedonia on the 152nd session that took place on September 3rd 2019. This document tasked the national coordinator for implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia with preparation of the action plan for a time period of three years (2022-2024). The National platform and the Action Plan are fully harmonized with the Sendai Framework for Disaster Risk Reduction 2015-2030 that was

adopted on the Third UN World Conference on Disaster Risk Reduction (hereinafter: Sendai Framework) on March 18th 2015.

The Sendai Framework is an instrument following the Hyogo Framework for Action (HFA) 2005-2015 that foresees building resilience of the nations and communities during disasters. The Sendai Framework, which in essence is based on preventive instead of reactive approach, and is built on elements that secure continuous activities and introduces numerous innovations such as: emphasizing the risk of disaster management, defining the eight global objectives, reducing the risk of disasters as an expected outcome, objective directed at preventing new risks, reduction of the existing risk and reinforcement of the resilience, as well as numerous leading principles including the primary responsibility of the countries for prevention and reduction of disaster risks, the inclusion of the society as a whole and of all national institutions. Beside, the scope of disaster risk reduction is significantly expanded and not focused only on natural hazards, but also on disasters caused by human factors, such as environmental, technological and biological hazards and risks. Special emphasis is put on promoting health resilience.

The Sendai Framework articulates several key actions:

- Need for better understanding of the disaster risks in all areas of their exposure dimensions;

- Vulnerability and types of hazards;

- Reinforcement of disaster risk management;

- Defining the responsibility in disaster risk management;

- Readiness for improvement of reconstruction "Build better";

- Identification of stakeholders and their role;

- Mobilizing the risk-sensitive investments in order to avoid creating new risks;

- Resilience of the health infrastructure, cultural heritage and the jobs;

- Reinforcement of the international cooperation and global partnerships and donors' policies and programs based on risks, including the financial support and loans from international financial institutions.

The UN Office for Disaster Risk Reduction seated in Geneva, Switzerland is tasked with the support of implementation, monitoring and revision of the Sendai Framework for action within all UN member-states.

The Action Plan for Implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia 2022-2024 is prepared to act as an operational implementation of the priorities of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia. The essential objective of its

implementation is to improve the situation in the area of disaster risk reduction – to decrease the risk by creating policies, programs and plans, to reinforce and increase the early warning capacities, to create more resilient communities for disasters and to prevent new risks in the Republic of North Macedonia. The Action Plan encompasses a three-year period (beginning of 2022 to the end of 2024) and will be elaborated in detail through activities to which the relevant ministries, state administration bodies, public enterprises and local self-government units are committed.

One of the basic goals of the Action Plan for Implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia 2022-2024 is to offer a different view of understanding, point of view and treatment of disaster risks and to initiate creating a single and integrated system for disaster risk reduction which is part of the multi-annual efforts of the Government of the Republic of North Macedonia for reforms in the current crisis management system and system for protection and rescue. Therefore,

the Action Plan is relying on the Sendai Framework; its basic postulates are prevention and integration, as a main precondition for building resilience of the society, using four basic principles:

- Building knowledge for disaster risk;

- Access of the whole society to disaster risk management;

- Promoting investments for disaster risk management, and

- Support for development of comprehensive approach for disaster risk reduction management.

The Action Plan for Implementation of the National Platform for Disaster Risk Reduction of the Republic of North Macedonia 2022-2024 is a resume of all projects of the entities in the crisis system by defining the activities, implementers and deadlines for their implementation. It identifies the activities and the sub-activities that the stakeholders are planning to implement on national and local level in pursuance with the efforts for planning of budget funds for the upcoming years and in accordance with the undertaken obligations, by defining the timeframe for realization, assessment of costs, financing sources, as well as the success indicators. The inputs are integrated in table that is part of this document and that will be used to follow-up the realization.

The general objective of the Action Plan is for the Republic of North Macedonia by 2022 to create a base for future development of disaster risk management system, to establish solid inter-institutional system for coordination resistant to disasters and other hazards that will be capable to conduct reconstruction upon disasters or any other hazards.

4.2 Relevant national policies and plans for the organization of Civil Protection in North Macedonia

4.2.1 National legislation directly related to flood management

The provisions regulating flood management in Macedonia is comprised of several sector laws focusing on various aspects related to flood management. The system is encompassing elements of prevention of damage caused by floods, protection by taking measures to reduce the likelihood of floods, information system about flood risks and in event of a flood, as well as emergency response[5] and mitigation of the impacts on the affected population. Without commenting on the relative advantages and disadvantages of this type of regulatory framework, this chapter aims to give an overview and analyse the key national legal documents applicable to flood management. Its final objective is to determine to what extent there is a consistent and clear national legal and policy framework and assessing the level of harmonization with the key EU *Acquis*[6].

4.2.2 Law on Waters

The core national legal instrument referring to issue of flood management is the Law on Waters (hereinafter: LW)[7]. It incorporates the basic principles and procedures of water resources management. In general the LW incorporates the flood management in the overall river basin district management principles: (i) the planning and management is based on the river basin district as geographical unit for flood management; (ii) the river basin management plan encompasses the flood risk management and ensures efficiency of the implementation of measures[8] and

[5] The Constitution of the Macedonia (Official Gazette of the Republic of Macedonia no. 52/91) and the amendments I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, XXV, XXVI, / XXVII, XXVIII, XXIX и XXX recognizes major natural disasters in the country as a state of emergency

[6] Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks,

[7] Law on waters (Official Gazette of the Republic of Macedonia no. 87/08; as amended 6/09, 161/09, 83/10, 51/11, 44/12, 23/13, 163/13, 180/14, 146/15, 52/16, 151/21). The LW is a framework law regulate the issues pertaining to surface and groundwater, the riparian lands and wetlands; management of waters, riparian lands and wetlands, including also the water resources distribution, water protection and conservation, as well as the protection against harmful impact of waters; water management structures and services; organizational arrangements and financing of water management; as well as the manner, the conditions and the procedures under which water can be used or discharged.

[8] LW Article 66 paragraph 4, stipulates that the river basin management plan shall among other contain program for protection against harmful effects of waters referred to in Article 124 of this Law, as well as the basic measures for protection against floods. Art 69 ensures the construction of planned facilities and implementation of planned measures of public interest for protection against floods- the RBMP shall determine the areas where construction

the development of programme for protection against harmful effects of waters should be carried out in coordination with and is integrated into reviews of RBMPs; (iii) acknowledges the extreme floods as exceptional circumstances allowing deviation from the environmental objectives for a particular water body; and (iv) sets the competences for planning and implementation of the measures for protection against harmful effects of the waters within the same management body.

LW sets explicitly provides establishing and managing the areas of international river basins with the respective neighboring countries, and obligation for undertaking activities for establishment and management of international river basin areas regarding the river basin areas on the territory of the Republic of North Macedonia that are part of the international river basin area. The cross border management shall be carried out in accordance with this Law and in accordance with the international agreements ratified by the Republic of North Macedonia.

The most relevant is the **Chapter V: *Protection against harmful effects of waters***, that contains provisions on activities and measures for protection and defence against floods, defence against erosion and torrents, defence against freezing of surface water bodies, as well as elimination of the consequences from such harmful effects of waters, and competences thereof. The LW establishes references to other relevant ***lex specialis***[9] stipulating that relevant provisions of other laws determining the conditions, manner and procedures for protection against the harmful effects of waters shall be also applicable.

For the purpose of protecting against harmful effects of waters, LW requires preparation of a ***program for protection against harmful effects of water*** within the respective river basin, as an integral part of the river basin management plans. The competence for preparation of the Programme lays within MEPP in cooperation with the MAFWE. The parts of the parts of the Program pertaining to urban areas under jurisdiction of municipalities, City of Skopje, and /or areas under jurisdiction of the water management enterprises shall prepared on the basis of the programs of the entities in jurisdiction of the area. The plan is to be adopted by the government in a procedure and as an integral part of the River basin management plan. The MEPP- EA is competent to monitor and enforce the implementation of the plan. Although the LW gives a legal basis for adoption of a subsidiary act on the content, the manner and procedure for adoption[10], the law instructs that this programme shall contain preventive measures, the construction of the protective facilities and installations and carrying out works for protection against harmful effects of waters (construction of embankments, accumulations, river regulations,

or other activity that may prevent the construction of the planned facilities and implementation of the planned measures of public interest are prohibited.

[9] E.g. Law on Protection and Rescue, Law on Crisis Management

[10] This subsidiary act is not prepared or any provisions in force by present time

torrential water regulation, protection against land erosion). Combined with the other provisions of this chapter, it is clear that these preventive measures are both, structural and non-structural, aiming to reduce the likelihood of floods and/or the impact of floods in a specific location[11].

According to the LW, the implementation of the Program shall be performed on basis of ***operational plans for protection and defence against floods*** for the endangered areas and which are to be adopted by the municipal councils at proposal of the mayors i.e. by the managing body of the Water management enterprises depending of the jurisdiction over the endangered area. The plans are effective if MEPP, Directorate for Protection and Rescue and the Centre for Crisis Management give consent of the operational plan. These plans contain: topographic, hydrologic, hydro-technical, demographic, economic and other bases and data, boundaries of the endangered area, activities and measures that are undertaken and implemented before the threat and during the flood defence, and bodies responsible for protection and defence against floods. The operational plan shall anticipate operational measures and other activities for protection and defence against floods and the necessary funds for its implementation, as well as the body or entity that shall conduct the protection and defence against floods.

The LW also sets some general obligations restrictions and prohibitions referring to the release of water in defended area[12], obligation for maintenance of water management facilities[13], monitoring and reporting requirements[14], development and maintenance of surface waters, and securing the flow of watercourses[15].

The LW stipulates instruments for implementation of the plans/ programmes:

Water management consent: construction of new or reconstruction or extension of existing water management protection facilities intended for development of water regime, that is: retention and inundated ponds, developed river beds, defensive embankments, developed torrential water and erosion areas, orbital canals, abstraction stations and similar[16].

[11] The basic measures for protection against floods are also: 1) a list and a map of flood plains, wetlands, riparian lands of lakes and accumulations, as well as other aquatic ecosystems; 2) a map of flood-prone areas where areas prone to floods are marked, the diffusion of flood waves and the highest levels of lakes and accumulations; 3) a flood forecasting and warning (alerting) system; 4) measures for protection and development of areas stated in the list and marked on the map; 5) technical assistance and advices for all issues connected to the implementation of the preventive and refurbishing measures for mitigation of the consequences in case of floods, and 6) measures for states of emergency and their organization
[12] WL article 128
[13] WL article 129 and article 161
[14] WL article 130 and article 158
[15] WL article 131, article 133
[16] WL article 174 and article 142

Water use permit: water use and construction of new or reconstruction or extension of dams with their accumulation areas[17].

4.2.3 Law on Protection and Rescue

The system of protection and rescue of people, the environment, material goods, natural resources, flora and fauna and cultural heritage against natural disasters and other accidents in peace, emergency and military situation in Macedonia is a subject matter of the Law on Protection and Rescue[18]. The law specifies the establishment and organisation of a protection and rescue system, the construction of protection and rescue facilities, risk assessment for possible hazards, the creation of a protection and rescue plan and spatial planning.

Floods are defined as natural disaster i.e. natural uncontrolled forces threatening the environment, human life and health, assets, flora and fauna and cultural heritage. The protection from natural disasters encompasses organizational, technical and other measures and the use of technical and other means of direct personal and protection, while the rescue is taking concrete measures, activities and procedures to protect of the consequences of the natural disasters.

The protection and rescue in the country is organized as a single system for detecting and preventing the occurrence and elimination of consequences of the occurred natural disasters and other accidents and providing assistance in peace, emergency and martial condition.

Protection and rescue is associated process of planning, programming, organization, management, command, coordination, implementation, financing and monitoring of timely and effective prevention and preparation, action and removing the causes and consequences natural and other disasters. The system includes activities of surveillance, detection, monitoring and study of possible hazards natural disasters and other disasters:

- Taking preventive measures to mitigate and prevent occurrence of possible dangers;
- Notification and warning of possible dangers and to instruct protection rescue and assistance through the single system for reporting;
- Education, training and exercises for training for protection, rescue and assistance;
- Organizing forces for protection and rescue and the establishment and maintenance of other forms of protection readiness, rescue and aid; Self-protection, self-help and mutual assistance; Mobilization and activation of forces and means for protection and rescue;

[17] WL article 26
[18] Official Gazette of Republic of Macedonia no. 96/2012 (as amended no 36/04, 49/04, 86/08, 124/1018/11 41/14, 129/15, 71/16, 106/16 and 83/18

- Determination and implementation of protective measures;
- Rescue and relief;
- Elimination of consequences of natural disasters, and other accidents, to providing basic living conditions;
- Overseeing the implementation of protection and rescue;
- Providing assistance to areas which suffered major damage from natural disasters and other disasters;
- Providing assistance to other countries that have suffered major damage natural disasters and other disasters, and who have expressed a need for it;
- Receive assistance from other states;
- Identification and assessment of hazards;
- Keeping a database of all sources of risks and hazards natural disasters and other accidents;
- Making the assessment of threat of natural disasters and other accidents and plans for protection and rescue and updating them.

The process of planning of the protection and rescue may be: development planning, operational planning and the ongoing short term, medium and long term.

The planning of development of the system is based on *National Strategy for Protection and Rescue* which is a five-year document for planning and preparation of activities for the implementation of measures protection and rescue and establishing strategic medium-term goals for protection and rescue. Also the *Annual programs for protection and rescue* intended for the implementation of the national strategy for protection and rescue.

For the purpose of organized implementation of protection and rescue, the participants in the system of protection and rescue have obligation to adopt ***plans for protection and rescue* from natural and other disasters** (operational planning) the plans contain preventive and operational measures, activities and procedures for protection and rescue. This plan is based on ***Assessment of the damages of natural disasters and other accidents*** which is a qualitative and quantitative analysis of data for early prevention, assessing possible risks and hazards of occurrence of natural disasters and other accidents, anticipating the possible consequences, and proposed degree of protection from the dangers and proposals for preventive and other measures for protection and rescue.

The law defines also the measures for protection and rescue - actions and procedures of preventive and operative character. The preventive measures are: (i) the assessment of threat of possible dangers and plan for protection and rescue of the estimated hazards; (ii) incorporation of anticipated and planned measures for protection and rescue in ongoing planning and work; (iii) spatial and construction of facilities for the purpose of protection and rescue; (iv) establishing the organization and system necessary for protection and rescue, and (v) provision of material facilities, personnel and other resources needed to carry out the planned

organization. These measures shall be applied during the planning and arranging the space and settlements, within projects for facilities and technological processes and during the construction of facilities and infrastructure.

The Law also sets operational functions of protection measures and rescue:

1. Activities and measures for protection in case of immediate danger (collection of information about the possible danger; putting into operation of the system and reporting coordination of the participants in protection and rescue; informing the citizens and the authorities and officials in charge of protection and rescue; high alert and activation of competent state administration bodies, competent institutions and forces for protection and rescue; ensuring public order and peace in the affected area and taking other measures related to the protection and rescue);
2. Activities and measures for protection and rescue for the duration of danger (self-protection activities of citizens and legal persons; use of force for protection and rescue; the evacuation and sheltering of the population and material goods; measures and activities to prevent the spread of hazards and their consequences and management and command all participants in protection and rescue);
3. Actions and measures to eliminate the consequences (assessment of the damage and consequences; rehabilitation of the area affected by the accident; securing and providing necessary assistance to vulnerable and affected population; implementation of health and hygienic-epidemiological measures; implementation of measures for the protection of animals and plants and products thereof and organizing supplies and utilities for fast normalization of life.).

The Law stipulates measures for protection and rescue from floods: regulation of water flows, construction of protective facilities, maintenance and repair of the damaged parts of the protective structures, monitoring and inspecting the conditions of water flows and high dams, facilities and environment protection, marking the altitude elevations of flooding wave, timely reporting and alerting the population in the affected area, implementing evacuation of the population and material goods from the endangered area to ensure transition and transportation by water, saving the endangered people on water and under water, pumping water from flooded buildings and extracting drowned, providing population in flooded areas with basic living conditions and participation in rehabilitation of consequences of floods.

4.2.4 Law on Crisis Management

The Law on Crisis Management[19] governs the crisis management system in the Republic of Macedonia such as: the organisation and functioning, decision-making and the use of the resources, communication, coordination and cooperation, assessment of the security jeopardy of the Republic of Macedonia, planning and financing. This law established the Crisis Management System, which aims to provide continuous consultations and high-level decision making, maximal coordination, timely response, efficient and appropriate utilization of available capabilities and resources in the event of a crisis, as well as timely, quality-based and real assessment of the risks and threats to the security of the Republic of Macedonia.

The crisis management system is organised and conducted for the purpose of prevention, early warning and to handling crises that represent a risk to the goods, health and the lives of the people and animals, and that are the result of natural disasters and epidemics or other risks and dangers that directly jeopardise the constitutional order and the security of the Republic or a part of it, where the conditions for declaring a state of war or state of emergency do not exist.

The crisis management system also includes gathering of information, assessment, situation analysis, objectives and tasks determination, development and implementation of the necessary actions for prevention, early warning and handling crises.

Crisis situation is a situation caused by risks and dangers (among which elementary and other disasters, technical and technological catastrophes, epidemics of quarantine and other contagious diseases of the people and animals, as well as large scale degradation and destruction of the environment) which can jeopardise the goods, the health and lives of the people and animals and the security of the Republic, for the prevention and/or handling of which the use of a larger scope of resources is necessary.

In January 2011, the Government adopted a Regulation on methodology for integrated assessment of all risks and hazards. This framework is implemented by the Crisis Management Centre and is a foundation for multi-risk, multi-hazard and multi sector assessments of all risks and hazards. For the first time the risk is defined and all aspects of risk including the socio-economic and vulnerability of population of assets and coping capacities of the system are taking into consideration. As per the Law on Crisis Management (CMC) and the Regulation, the CMC will prepare 1 national and 85 local risks and hazards assessments. The Methodology for assessments of all risks and hazards is in line with the EU Guidelines on risk assessment and mapping.

[19] Official Journal of Republic of Macedonia 29/05 as amended O J 36/11, 41/14, 104/15, 39/16 и 83/18

4.2.5 Law on Hydro-meteorological activities

The law on hydro-meteorological activities [20] governs the functioning of the Hydro-meteorological activity in the Republic of Macedonia and responsibilities of Administration for Hydro-meteorological activities. The Law establishes single meteorological and hydrological observation system of RM and also sets obligations for warning and notice of extreme weather conditions.

According the law the Administration for Hydro-meteorological activities (AHMA) is solely responsible for warning and notice of occurrence of extraordinary, dangerous and catastrophic adverse weather and hydrological phenomena and processes defined as natural disasters. AHMA is obliged to continuously provide radar, satellite tracking, analysing and forecasting the weather (hydro-meteorological security). The AHMA provides hydro-meteorological support to humanitarian emergencies caused by natural disasters. The AHMA shall, through the media, inform public about the occurrence of natural disasters. In the event of adverse phenomena, the administration acts in accordance with regulations for crisis management and regulations for protection and rescue and is an integral part of the national system for prevention and mitigation of the effects of natural disasters and other emergencies that require the protection of people and property.

4.2.6 Law on Local Self-government

The law on local self-government[21] regulates inter alia the competencies of the municipality; organization and operation of the municipal bodies; municipal administration; acts of the bodies; property – ownership of the municipality; oversight over the operation of the municipal bodies; mechanisms of cooperation between the municipalities and the Government of the Republic of Macedonia; and other issues of importance to the local self-government. The Municipalities have inherent responsibility for execution of preparations and undertaking of activities for protection and rescuing of citizens and goods against war destructions, natural and other disasters as well as against the consequences caused by them. They also have other competences in flood management which are delegated by other sector laws.

4.2.7 Law on Water Management Enterprise

The law on water management enterprise[22] regulates the management, utilization, operation and maintenance of hydro-systems and irrigation and drainage systems by the entities acting as water management activity providers. It provides information on some institutional and operational competences related to the integrated flood management system. The entities enclose the public water

[20] Official journal of Republic of Macedonia no. 103/08; 53/11; 51/15
[21] Official journal of Republic of Macedonia no 5/29
[22] Official journal of Republic of Macedonia no 51/2015

enterprises founded by the Government for water management activities, and the newly established joint stock company Water management Inc. owned by the state. With the commencement of the implementation of this law, the existing water management enterprises continue to operate as subsidiaries of Water Inc. The Water Inc. has competences to maintain and manage irrigation and drainage systems as a whole, in order to, inter alia, regulate the river beds; and land drainage.

In order to ensure efficient operation of the system, to protect or ensure the facilities belonging to the system, and perform protection and flood defence in accordance with the Law on Waters, Water Inc. funded by the programme of the body responsible for managing the environment, has competence to: (i) construct and maintain facilities for the protection and defence from floods; (ii) construct and maintain facilities for prevention and protection from erosion; (iii) construct and maintain facilities for regulation of the rivers and torrents; (iv) other duties in accordance with the law.

Water Inc. is established to conduct water management activities throughout the entire territory of Macedonia. Water Inc. has headquarters and subsidiaries to perform activities of a certain geographical area of action. Each subsidiary has its registered office located in the area of action which is determined by the statute of Water Inc.

The Law terminating the Law on water communities[23] is also important for some organizational aspects and definition of competences for flood management. This law terminates the Water communities previously established with the WC law ("OJ Republic of Macedonia "No. 51/2003, 95/2005, 113/2007 and 136/11). The WC are associations of owners or users of agricultural land for joint use, management, maintenance, construction, rehabilitation of small irrigation systems and / or drainage and weekday and / or distribution network irrigation systems for irrigation and/or drainage (infrastructure for irrigation and drainage) of the WC area determined on the basis of irrigation.

The WC according to the law which is now terminated had responsibilities to construct and maintain the irrigation and drainage infrastructure. This law transfers the responsibilities and the irrigation and drainage infrastructure to the subsidiary of Water Inc. whose area of action is the seat of the water community, i.e. Water Inc. subsidiary whose area of activity is closest to WC headquarters.

[23] Official journal of Republic of Macedonia no 72/2015

4.2.8 Other national legislation

Land Use and Planning laws (Law on Physical planning, Law on urban planning) that govern land use planning and zoning regulations, which may affect the flood management. Any legal and natural person, based on a written request submitted to the municipality, receives a certificate from the plan of the municipality. The extract from a detailed urban plan , that is, from the urban plan for the village and from the urban plan outside of populated area, with the corresponding data, is the basis for the creation of conceptual design for construction, which is required in the procedure for obtaining decision for location conditions. To understand the planning possibilities for planning the pro- the manure for drafting on urban plans, except detailed urban plan, the adopter of the plan is obliged to request conditions you for planning on the space from the organ on the state administration over - lying down for performing on things from the area on the spatial planning (Ministry for environment and physical planning). Conditions for planning on the space no everything looking for if previously for the planning one scope conditions for spatial planning have been issued, which derive from. The spatial one plan on Republic N. Macedonia who is on force. The report which is an integral part of the decision for conditions for spatial planning is prepared by the Planning Agency of the space. The decision for space planning conditions issued by the state administration body competent for performing works - and from the field of spatial planning (MoEPP). One of the main 9 principles in the process of ***spatial planning*** is protection from war destruction, natural and technological disasters and accidents. Each spatial plan (national SP; SPs for NUT III regions, SPs for areas of public interest as follow: national parks, other protected areas, protective zones around sources for water supply etc;), contain a chapter about it. Flood prone zones (generally) are presented in this document and there are proposed generally mentioned. General and Detail Urban Plans must be adapted to the spatial plan. Spatial Planning Agency prepared the so called "Conditions for planning" for each urban plan and if urban planner designs housing area on potential flood prone areas, SPA doesn't approve this. It is a preventive, non-structural measure.

The Law on Urban Planning (Official Gazette of Republic of Macedonia no. 32/20) regulates the planning of the space, defining the types and contents of plans, as well as specification of the procedure for their adoption. According to the Law, there must be a Spatial Plan of the Republic of Macedonia and regulations for its enforcement, as well as spatial plans of region, national park, area of the City of Skopje and municipalities. Adoption of spatial plans is compulsory. Urban plans are adopted at the local level as follows: General Urban Plan (GUP), Detailed Urban Plan (DUP), Urban Plan for Villages (UPV); Urban Plan Outside of Populated Places (UPOPP); Local urban planning documentation; Architectural urban planning

project. These are management documents, and present integrated development projects by means of which, space organization is defined for a particular territory. They set the goals, concepts and conditions for implementation of spatial development in various areas, and also establish principles for public participation. One of the main principles of spatial and urban planning is aiming at protection from war destruction, natural and technological disasters and accidents. The Law explicitly states[24] *inter alia* that each spatial plan (national SP; SPs for NUT III regions, SPs for areas of public interest as follow: national parks, other protected areas, protective zones around sources for water supply etc;) contains the basic land use guidelines for spatial use, spatial distribution of economic and non-economic infrastructure, a network of settlements, spatial arrangement of the road and other infrastructure, strategic assessment of environmental impact, guidelines and measures for the protection and promotion environmental and nature protection measures of cultural heritage, measures for protection from war destruction, measures for protection against natural and technological disasters and accidents parameters for implementation of the plan and adequate graphic presentations. The plans, for a particular planning space, define and present the flood prone zones, their size and spatial distribution, state of drainage infrastructure and regulation, production of sediment as well as erosion processes. Further the plans state the spatial planning goals and measures for active and passive protection from floods, expansion of protective water management infrastructure, protection of dams form production of sediment as well as protection of the space from erosion processes. General and Detail Urban plans must be adopted in accordance to the spatial plan. The Spatial Planning Agency ensures the accordance by issuing "Conditions for planning" for each urban plan and if urban planner design housing area on potential flood prone areas. It is a preventive non-structural measure.

The Law on construction (Official Gazette of RM, no. 130/09[25]) and supporting by-laws regulates the competences, manner and procedures for granting of the licence for designing and construction; categories of the constructions, construction permits, type and contents of technical documentation. This law also regulates usage, maintenance and reconstruction of various structures.

Law on the Implementation of the Spatial Plan (Official Gazette of RM, no. 39/04) specifies the execution of the spatial plan through the development of

[24] Article 8 and article 9 of the Law. The legal basis for hierarchically subordinated plans to the National Spatial plans can be also found in the: Spatial Plan of Republic of Macedonia (2004), Law on enforcement of the Spatial plan of RM (OJ 39/2004) and annual programmes of MEPP and the Government for preparation of the spatial plans. Additionally, the Law on spatial and urban planning, article 32 authorizes the Parliament of Macedonia, the municipal council, the municipal councils in the city Skopje and the Skopje City Council, in case of emergency or war destructions, natural and other disasters and accidents causing extensive material damage, to adopt plans in a shortened procedure.

[25] As amended 130/2009, 124/2010, 18/2011, 36/2011, 54/2011, 13/2012, 144/2012, 25/2013, 79/2013, 137/2013, 163/2013, 27/2014, 28/2014, 42/2014, 115/2014, 149/2014, 187/2014, 44/2015, 129/2015, 217/2015, 226/2015, 30/2016, 31/2016, 39/2016, 71/2016, 132/201635/18, 64/18 и 168/18, 244/19, 18/20, 279/20, 227/22 и 111/23

regional spatial plans, spatial plans for areas of special interest, municipal spatial plans and spatial plans for the City of Skopje as well as urban plans, and rights and responsibilities entities in the implementation of the Spatial Plan, financing and supervision over the implementation of the Spatial Plan.

Healthcare Act (Official Gazette of RM, no. 43/12) requires that the Ministry of Health and health institutions cooperate with the Protection and Rescue Directorate, the Red Cross and with other institutions and citizens when planning and operating in emergencies.

4.2.9 Strategic and planning documents

There are several long-term strategic and planning documents encompassing various flood management aspects.

Water Management Strategy (2011-2041). This document provides a direction for the Republic of Macedonia and sets the long term vision of where the water sector should be by 2040. It is a document explaining the status of waters, inter alia the river training and protection against harmful effects of waters (river training, flood protection, erosion protection, irrigation, surface water drainage); water management objectives, inter alia, for protection against floods and other harmful effects of water (river training, flood protection, erosion protection, irrigation, surface water drainage); as well as programme of activities and measures , inter alia, for protection against floods and other harmful effects of water.

The overview of measures and activities for achieving objectives for protection against floods and other harmful effects of water encompass the following measures: (i) construction of reservoirs, and (ii) preparation of *good practice* guidance for sustainable river training.

Flood Protection

Administrative instruments	1. Preparation of program for protection from harmful effects of waters within the respective river basin as an integral part of plans for river basin management. 2. Disabling of spatial construction work and other activities that could increase danger of flooding and damage. 3. Implementation of Floods Directive (Directive 2007/60/EC) (Preparation of preliminary flood risk assessment, flood hazard maps, flood risk maps and flood risk management plans according to Floods Directive) 4. Rising of public awareness. 5. Preparation of detailed flood plans for local/regional centres.

	6. Preparation of integral international plans for flood protection.
Structural flood protection measures	1. Maintenance of water buildings (dams, reservoirs, protective embankments etc.) in a way that ensures acceptance of flood waves, as well as providing protection from natural disasters. 2. Providing preventive measures (construction of dykes, reservoirs, river regulation, regulation of erosion, afforestation, etc.). 3. Utilising floodplains and wetlands as natural flood storage areas.
Rehabilitation measures	1. Removal of waste, rubble and barren from floodplains. 2. Non-structural flood protection measures. 3. Improvement of catchment level planning of flood management measures. 4. Integration of rural land use and flood management policies and funding. 5. Improvement of hydro meteorological prognosis. 6. Preservation of retention areas (floodplain and wetlands). 7. Arrangements of integral urban development plan (avoiding from areas with flood risk). 8. Intense control over interventions on areas with flood risk. 9. Education of engineers and other water related workers.

Erosion Protection

Administrative instruments	1. Preparation of program for protection from harmful effects of waters within the respective river basin as an integral part of plans for river basin management. 2. Preparation and implementation of legal framework for protection of accumulations from sedimentation. 3. Prohibition and restrictions for cutting of trees and shrubs and prohibition of grazing cattle. 4. Prohibition on removing soil, sand, gravel and stone within erosion area.
Structural erosion protection measures	1. Afforestation and grass slopes erosion control. 2. Considering of rules against erosion (i.e. planting of trees must be done in a way that provides protection from erosion). 3. Sustainable forest management. 4. Maintenance of erosion protection buildings.

Irrigation and Drainage

Administrative instruments	1. Water drainage monitoring - measure the amount and quality of discharged water.

Structural measures	1. Maintenance of canal network for drainage and irrigation. 2. Revitalization and reconstruction of existing systems (higher efficiency and decrease of losses). 3. Construction of irrigation systems.

National Platform of the Republic of Macedonia for Disaster Risk Reduction (DRR) elaborated above in part I of this document. The platform explains the foundations of the National Platform for DRR within the national conceptual and strategic documents of the Republic of Macedonia, especially the National Conception for Security and Defence and the National Security Strategy of the Republic of Macedonia, as well as the Law on Crisis Management. The Platform focuses also on the phases that led to the establishment of the National Platform, presenting the networking process of stakeholders in accident and disaster prevention and response, the declaration of the National Platform by the Government of the Republic of Macedonia and its international promotion. Further, the document covers: the organization and structure of the Platform, explains the necessary methodological steps to develop these strategies, policies and legislation based on thorough analysis and expertise and describes the activation of the platforms in stages from local to the national level.

Third National Communication on Climate Change (UNFCC National reporting) This strategic document for climate change action contains some flood management aspects analysed from the focus of the vulnerability and adaptation to climate change. As a long term measure, this document suggests *Development of flood action plan and development of Flood early warning system.*

Strategy for Sustainable Development of Forestry in the Republic of Macedonia. This document sets goals to ensure the maintenance of the protective forest functions and to increase positive contribution of the forest sector to environmental protection, water and soil protection, the protection of people and infrastructures against natural hazards, local and global greenhouse gas emission reduction etc. Among the measures it sets the stimulation of the maintenance of forest protection functions - rehabilitation of eroded and degraded lands and forests and protection of headwater areas.

The Spatial plan of RM contains the basic land use guidelines for spatial use, spatial distribution of economic and non-economic infrastructure, a network of settlements, spatial arrangement of the road and other infrastructure, strategic assessment of environmental impact, guidelines and measures for the protection and promotion environmental and nature protection measures of cultural heritage, measures for protection from war destruction, measures for protection against natural and technological disasters and accidents parameters for implementation of the plan and adequate graphic presentations. The floods protection and related issues are regulated in the chapter on the Water resources and Water infrastructure,

and the chapter on Protection against war destructions, natural and technical/technological disasters. The Planned commitments for protection against flood, the document anticipates active and passive measures for organized defence: planning (spatial and urban) in potentially endangered areas from floods, to provide for the arrangement by evading huge damages; construction of reservoirs with a possibility for the retention of floods waves; marking the area in the cadastral maps and on the ground; regular inspection of the situation on the river beds and intervention if needed; maintenance and renewal of the shoreline vegetation; Strictly controlling the sediment; Initiation of construction of stabilization thresholds for height fixing of the river beds and in preventing the side erosion; Initiation of the arrangement degraded rivers; Maintenance and reconstruction of systems for protection against floods. The plan defines measures for certain major defensive systems.

4.3 The organization of the existing North Macedonian Civil Protection System today (Organizations for Planning and Implementation of Civil Protection Policy)

4.3.1 Institutional framework for flood management in the Republic of North Macedonia – competent central regional and local level authorities

The relevant national legislation[26] assigns the competent authorities which are responsible for flood management. The main responsible body is the Ministry of Environment and Physical Planning, but also Local Self-governments and Water management enterprises. In a case of crisis situation, the legislation includes additional competent public and private entities.

For an overview of key players and their competences for flood management The institutional arrangements for implementation of the WFD and this Directive are identical and established. Local self-government unites (LSGU) and water management enterprises (WME) are responsible for assessment and management of flood risks at their respective areas. Areas not falling within the jurisdiction of LSGUs or WME areas are responsibility of the AE-WS. MoEPP-AE-WS is competent authority to coordinate the activities for planning and management of floods. Same units that are responsible to prepare river basin management plans (RBMPs) for each river basin district (RBDs) will be involved in the procedure for preparing FRMPs too (Flood Risk Management Plans). Flood risk assessment shall be prepared by WME for the territory they are responsible for or by municipalities for the territories that do not fall under competencies of the WME. MEPP in cooperation with Ministry of Defense, Ministry of Transport and Communications, Ministry of Agriculture, Forestry and Water Economy, Ministry of Health and Ministry of Local Self-Government, following prior cooperation with Crisis Management Centre and Protection and Rescue Directorate determines list and maps, flood hazard maps, flood forecast and flood warning system, protection measures, technical assistance and advice and emergency measures.

Steps to coordinate implementation of this Directive and WFD need to be undertaken thus focusing on improving efficiency, information exchange and achieving common synergies and benefits regarding environmental objectives set in Article 4 of WFD. In particular:

[26] Law on waters, law on local self-government, law on water management enterprises, law on termination of the water communities, law on hydro meteorological activities, law on protection and rescue, law on crisis management. On the content please see point 1.1 of these document meteorological activities, law on protection and rescue, law on crisis management.

- development of first flood hazards maps and flood risk maps and their subsequent reviews to be carried out in a way that the information they contain is consistent with relevant information presented according to WFD;
- development of first flood risk management plans and their subsequent reviews to be carried out in coordination with and may be integrated into the reviews of RBMPs
- active involvement of all interested parties under Article 10 of this Directive to be coordinated with active involvement of the interested parties under Article 14 of WFD.

Number of projects were conducted at national level aimng to implement the WFD and FD requirements. In the frame of the project "Plan for floods management in the region of Strumica River Basin Districts" (implementation period: 2014-2015) a Preliminary flood risk assessment in RB Strumica was prepared.

Project activities for the implementation of the Floods Directive:

- The project "Adaptation to Climate Change through Transboundary Flood Risk Management in the Drim River Basin" (CCAWB), implemented by GIZ.
- UNDP Project "Improving Resilience to Floods in the Polog Region" funded by the Swiss SDC
- UNDP Project: Building Integrated Climate-Resilient Transboundary Flood Risk Management in the Drin River Basin
- IPA II Project for Implementation of the Flood Directive
- EU Support to Flood Prevention and Forest Fire Risk Management in the Western Balkans and Turkey

Flood management policy development and implementation competences. According the legislation the main central level body is the Ministry of Environment and Physical Planning which have power for legislation and policy development and coordinate of implementation. It is competent for preparation and adoption of Programme of protection from adverse effects of waters as a part of River basin Management and also defines:

- list and maps of wetlands, flood plains, shorelines of lakes and impounded waters as well as other aquatic systems;
- list and flood risk areas maps, floodway and highest shorelines of lakes and impounded waters;
- a flood forecast and flood warning (alert) system;
- measures for development of the areas listed and mapped into the maps of flood risk areas;
- technical assistance and advice on all matters relating to the implementation of prevention and remedial measures to mitigate the impact if a flood occurs;
- emergency measures and their organisation;

The Ministry for environment, the council of the municipality, of the city of Skopje and of the municipalities of the city of Skopje and the water management enterprises adopt an operational plan for protection and defence against flood for affected areas.

The Environmental administration, and its Water department is the body within the MoEPP to perform the expert activities (planning; water right, concession and cross-sectoral cooperation, management of particular river basin districts)

The Administration for hydro-meteorological activities is competent for *meteorological* monitoring and *hydrological* monitoring (permanent and in case of high water flow additional monitoring) in accordance to the MoEPP monitoring programme.

The **Protection and Rescue Directorate** is established for the purpose of execution of activities for protection and rescue from natural disasters, epidemics, epizootics, epiphytic or other disasters as an independent state authority body with a status of a legal entity. In the realization of protection and rescue, the Directorate among the other is responsible for the following activities: Develops the Plan for protection and rescue from natural disasters, epidemics, epizootics, epiphytic or other disasters; Develops an Assessment of endangerment by natural disasters, epidemics, epizootics, epiphytic or other disasters in cooperation with the responsible state authorities; Organizes and prepares the protection and rescue system; Provides timely engagement and efficient utilization of the protection and rescue forces of the state and the rapid response teams; Develops education curricula and training programs for protection and rescue; etc.

The Administration for Hydro-meteorological Activities (AHMA) has leading competence for preparation of data and information for CM System. Standard Operative Procedures have been agreed for communication, coordination and cooperation amongst CMC/DPR (Protection and Rescue Directorate) and subjects of the Crisis Management System for flood protection. The HMS has the responsibility to operate the observation network and produce meteorological and climatological services. HMS provides technical and scientific support for other agencies. HMS actually participates in DRR providing basic data, information and weather forecasts to other organizations, at state, provincial and local levels. Thus, the level of integration of HMS into the DRR policy making is not very high. On the contrary, from an operational point of view, HMS is strongly involved in Disasters Preparedness and Prevention activities. As described by the following flow chart, HMS is strongly involved in Early Warning, but also (bottom part of the flowchart) in prevention, providing basic information and services for hazard characterization.

4.3.2 Roles and responsibilities for flood and drought risk assessment

The Crisis Management Centre is responsible for preparation and updating of the Integrated Assessment of all risks and hazards. In relation with the article 45 from the same law and for purposes of coordinated decision making, issuance of guidance and recommendations for taking measures for prevention, as well as for crisis situation, the Integrated Assessment is being adopted. This document integrates the contribution from the specific assessments that are being prepared by the competent entities from CMS and is providing multi-sector approach in the assessment of the whole spectrum of risks and hazards. Under the Decree, the CMC should consolidate and systematize risk data and analyses into a single database through a multi-hazard assessment process. In this framework, CMC has also the role for coordination with competent institutions for analysis and assessment of vulnerability and exposure related to floods and droughts. The new Regulation on Methodology for Preparation of Integrated Assessment of all Risks and Hazards adopted in January 2011 prescribes detailed framework for analysis and assessment of the vulnerability and exposure including all the elements of the risk (geographic characteristics, population, infrastructure, individual and industrial facilities etc). Under the law on Protection and rescue, the DPR makes assessments on natural disasters including floods, and proposes measures for protection and rescue. DPR receives information from the HMS and the Ministry of Agriculture, Forestry and Water Management. The DPR also maintains an inventory of all natural disaster and accident risks and hazards. Using this data DPR produces assessments of vulnerability to natural disasters and other accidents as well (technical, technological and industrial accidents) of the Republic of Macedonia. DPR develops National Protection and Rescue Plans. Assessments and Plans are then adopted by the Government.

The HMS has the responsibility to operate the observation network and produce meteorological and climatologically services. HMS provides technical and scientific support for other agencies. HMS actually participates in DRR providing basic data, information and weather forecasts to other organizations, at state, provincial and local levels. From an operational point of view, HMS is strongly involved in Disasters Preparedness and Prevention activities, providing basic information and services for hazard characterization.

The Crisis Management Centre is responsible for preparation and updating of the Integrated Assessment of all risks and hazards[27]. This document integrates the contribution from the specific assessments that are being prepared by the competent entities from CMS and is providing multi-sector approach in the

[27] Law on Crisis Management, Chapter III, article 21, par. 2, in relation to art 45. The new Regulation on Methodology for Preparation of Integrated Assessment of all Risks and Hazards adopted in January 2011 prescribes detailed framework for analysis and assessment of the vulnerability and exposure including all the elements of the risk (geographic characteristics, population, infrastructure, individual and industrial facilities etc)

assessment of the whole spectrum of risks and hazards. The CMC should consolidate and systematize risk data and analyses into a single database through a multi-hazard assessment process. In this framework, CMC has also the role for coordination with competent institutions for analysis and assessment of vulnerability and exposure related to floods and droughts. Under the Law on protection and rescue, the DPR makes assessments on natural disasters including floods, and proposes measures for protection and rescue. DPR receives information from the AHMA and the MAFWE. The DPR also maintains an inventory of all natural disaster and accident risks and hazards. Using this data DPR produces assessments of vulnerability to natural disasters and other accidents as well (technical, technological and industrial accidents) of the Republic of Macedonia. DPR develops National Protection and Rescue Plans. Assessments and Plans are then adopted by the Government.

The AHMA has the responsibility to operate the observation network and produce meteorological and climatologically services and provides technical and scientific support for other agencies. AHMA actually participates in DRR providing basic data, information and weather forecasts to other organizations, at state, provincial and local levels. From an operational point of view, HMS is strongly involved in Disasters Preparedness and Prevention activities, providing basic information and services for hazard characterization.

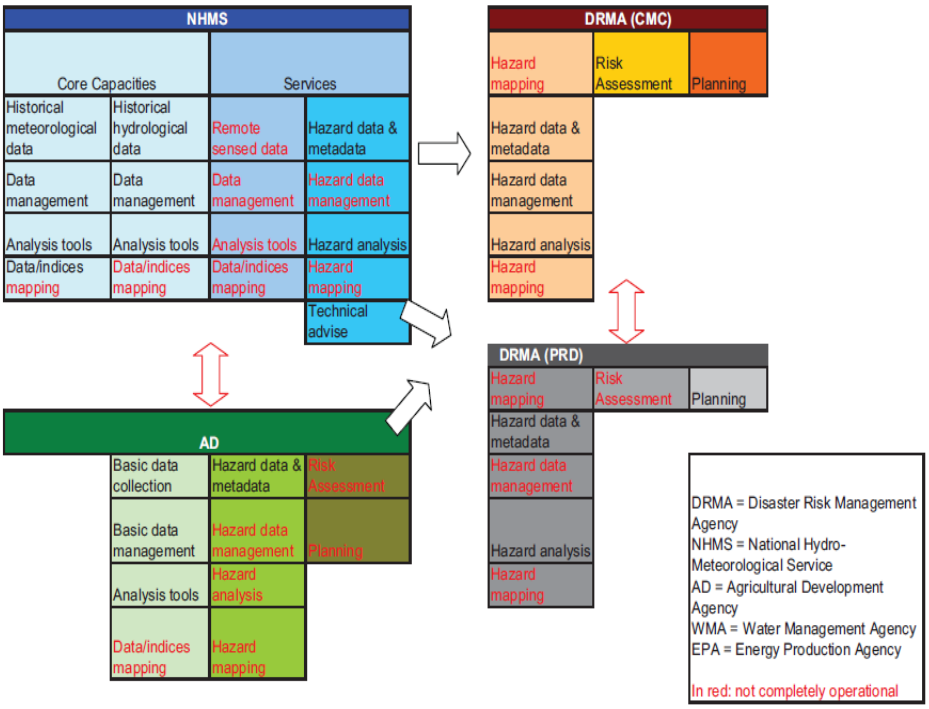
The local self-government unites establish commissions to assess disaster damages on the field and submit reports to Government Committee[28]. The Governmental Commission submits information to the Government, which decides the refund rate of damages. Impact data on agriculture are collected by local commissions for drought assessment. The MAWFE has information about affected areas for floods and yields for droughts. These data are not systematized in a database. The impacts of floods are collected by local commissions at municipality level with the participation of DPR local teams, using damage assessment methodologies defined by the Ministry of Finance. The damage assessments are sent to central level for analysis and stored by Ministry of Finance, Department of Statistic, Local authorities. Other line Ministries participate in the Crisis Management System and provide sectoral information to CMC.

Both, the CMC and the DPR, according to the law, are the key institutions for floods risk assessment. For floods risk assessment, there are several overlaps and lack of coordination between the two institutions. On the one hand, the protection and rescue system, which has been redefined in 2005 with the establishment of the DPR, addresses risks and hazards from natural and technological disasters in peace, emergency and war situations. With the development of the protection and rescue system measures and forces, the DPR has national and local operational capacities.

[28] Law on protection and rescue

On the other hand, the CMC is responsible for crises that threaten the basic values, interests and goals, and the constitutional order and security. CMC has developed multi-hazard and inter-sector approach in risks assessment. Both institutions have activities concerning floods risk assessment and their specific roles are not clearly defined, causing overlaps between these two institutions. Moreover there is the need to improve the operational linkages between the institutions involved in the CMS for inter-sector cooperation and collaboration.

The **National Protection and Rescue Strategy** (NPRS) is expected to bring better risk assessment, extended monitoring and forecasting and warning communication. It gives high priority to compatibility and regional and sub-regional information sharing on natural disasters and other accidents, by improving existing mechanisms and use of better communication technologies. The strategy implementation measures foresee local and national activities, such as: full cooperation among entities to reduce vulnerability, preparedness to involve all available resources in dealing with hazards, development of risk assessment programs and operational plans, upgrade of the National Protection and Rescue Plan, inclusion of natural disaster hazards assessment in development plans, etc. The Strategy envisages establishment of an IT centre and application of modelling and simulation methodology and technology in protection and rescue. The Strategy sets general guidelines but fails to provide an action plan containing developed measures and indicators for monitoring. In this framework, DPR makes hazard assessments but not yet risk assessment or vulnerability analysis because of lack of methodologies. However, DPR foresees to develop an information system ensuring suitable information both for disaster managing and for planning. This system should include data from the State Statistical Bureau as (population, households, assets, and infrastructures), the Ministry of Agriculture, Forestry and Water Management (land use, crops areas, forests, orchards). This system will not only underpin the warning and forecast of hazard impact, but also the vulnerability analysis for risk assessment and as consequence the plans for protect and rescue.



Operational linkages for flood and drought risk assessment

5 Cross-Border Cooperation between Greece and the Republic of North Macedonia in the Context of Civil Protection

5.1 Assessing constrains towards cross- border integrated flood management policy – summary of the main strengths, weaknesses and effects

5.1.1 Assessing the level of transposition and implementation – summary of the main strengths, weaknesses and effects

As noted in the EU progress reports for North Macedonia, the level of transposition and implementation of EU Acquis for civil protection is one of the main constrains for cross border action in the field of flood management and prevention

Main EU instrument to assess the harmonization process is the Floods Directive 2007/60/EC establishing legal framework for the assessment and management of flood risks across Member States, and aiming at reduction of the adverse consequences of floods to the human health, the environment, cultural heritage and economic activity. The basic requirements of the directive is to produce in certain time table preliminary flood risk assessment, flood hazard and risk maps and flood risk management plans. In contrast to the general EU water management Acquis, climate change is explicitly included in the Floods Directive, and the EU Member States are explicitly required to take into account the likely impacts of climate change on the occurrence of floods.

This Directive requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. This Directive also reinforces the rights of the public to access this information and to have a say in the planning process. The aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. The Directive requires Member States to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015 taking into account the public participation procedures in the preparation of these plans.

The comparison which follows below is an abstract concerning the main elements of the Directive and the criteria to be covered. The comparison also outlines the status of gaps and describes the means to bridge these gaps in the transposition

process. The transposition status of the Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks is at very early stage. The provisions of the directive are only partially transposed because at the time when the EU Water Acquis was transposed into national legislation the FD was not in force. Although the flood management was part of the EU overall objectives for sound European water management, at that time was not EC regulated in detail, leaving the regulation for the nation states. Thus, the national legislation has mainly been developed meeting the overall EU objective of sound protection against adverse effects of waters. This mainly is reflected as coordination with the WFD, particularly through the coordination of flood risk management plans and river basins management plans. The plans for protection from adverse effects of waters are explicitly included as compulsory content of the RBMP. Also the periodical approach accepted for revision of the planning documents for river basin management makes the management plan a suitable instrument for flood risk management. The Flood risk management should be comprehensively considered in the different steps of the implementation of the law and RBM planning and implementation process. With respect to the stages of the river basin management essential to be adjusted appropriately to changing climate conditions and incorporate flood projections, we may summarize as follows:

1. **Characterisation for each river basin** (an analysis of its characteristics, a review of the environmental impact of human activity and an economic analysis of water use). The specifications on the information to be collected and analysed, should include, inter alia: eco-regions and water body types, identification of significant pressures on the water body, point and diffuse source pollution, abstractions, impact of human activity on groundwater, characteristics of any special protected areas, drinking water bodies. Such analysis of pressures and impacts, as well as the economic analysis, should encompass the influences and flood risks ensuring that the probability of impacts on existing anthropogenic pressures and risks is taken into account. The planning process shall be accurate and sustainable only if it is able to identify and anticipate an ability of the categories for which the specification are given to change under flood impact, as it happens through monitoring. The monitoring programme should therefore be able to detect those impacts.

2. **The process of setting the water body objectives**. The Law sets the aim of ensuring that a 'good status' is achieved or preserved in all waters, i.e. groundwater, surface waters, freshwaters. For surface water, 'good status' is defined in terms of ecological criteria, hydro-morphological features and minimum chemical standards. The terms allow the application of particular objectives and usage in special cases. For groundwater, 'good status' is defined in terms of both quantity and chemical purity. Under the terms, no

polluting discharge is allowed into groundwater; abstractions are allowed only to the extent of the recharging which is not required for ecological reasons. The 'good status' provisions are defined by comprehensive technical standards in an ordinance, including ecological, physical, chemical, micro-biological and technical criteria. These standards may vary as result of the floods impact and therefore should be taken into account when developing the scenarios for achieving the 'goods status'; and

3. **The design of the programmes of measures**. A central component of each RBMP is the requirement to establish a programme of measures to ensure that all waters in the river basin achieve good status. Such measures are grouped into compulsory 'Basic Measures' and additional 'Supplementary Measures', encompassing many cross-references to other articles in the Low and other environmental management related legislation. The starting point of this programme would be the full implementation of any relevant legislation. If this basic set of measures is not adequate to ensure that good status is achieved, then the programme has to be supplemented with further restrictive ordinances and stricter control of emission sources or whatever further measures-such as educational or policy measures-might be necessary. The programme of measures for selected scenarios must be developed as flexible enough to act in response to the projected flood risks. In this context, measures should be designed to ensure that they will operate as expected under future climatic conditions.

Administrative arrangements – identification of the competent authority

The duties deriving from national water legislation which need to be carried out by competent authorities may generally be classified under planning, regulating, monitoring, supervising and reporting. Article 3 of the FD stipulates the identification of the appropriate competent authority within each river basin lying within the national territory, but allows for the possibility for the purpose of implementation to appoint competent authorities different from the river basin management bodies. The institutional setup- provided in the LW corresponds to these requirements and follows the requirement that 'decisions should be taken as close as possible to the locations where water is affected and used'. Namely, each river basin district shall be managed by units within the Ministry of Environment and Physical Planning (MOEPP) especially established for each river basin district set[29]. Further, the Law stipulates the shared competences between different authorities involved and responsible for the management process within the respective territorial jurisdiction: (i) the urban areas - the municipalities, the city of Skopje and municipalities in the city of Skopje, respectively; (ii) non- urban areas

[29] LoW article 8(2)

- the legal entities managing water management enterprises respectively; (iii) for the whole territory of the Republic of Macedonia, except for protection from adverse effects referred to in paragraph (1) and paragraph (2) -assigned water management enterprises by MOEPP[30].

On strengths and weaknesses and the implementation constrains connected with the institutional setup please see point on Institutional framework and key stakeholders below.

Description of past floods with significant adverse impacts

Floods Directive (FD) requires preliminary flood risk assessment of the river basins and associated coastal zones to identify areas where potential significant flood risk exists by 2011. It also encompasses assessment of the past floods at the first stage of the planning cycle where climate change should be considered with intention to anticipate to the extent in which this is possible the increased exposure, vulnerability and flood risk due to climate change, for further establishing areas of potential significant flood risk.

The assessment should be based on available information. Finally, Article 4 of the FD states that the preliminary flood risk assessment shall be based on, among other things, "impact of climate change on the occurrence of floods, allowing the consideration of impact on climate change to be mandatory".

On the other hand, the Low requires preparation of a Programme for protection from adverse effects of waters as part of the river basin management plans. This program aims at protection against adverse effects of waters, which includes the flood protection. Further in the chapter there is an obligation for the competent authorities to define: lists and maps of wetlands, flood plains, shorelines of lakes and impounded waters as well as other aquatic systems; lists and flood risk areas maps, floodway and highest shorelines of lakes and impounded waters; a flood forecast and flood warning (alert) system; measures for development of the areas listed and mapped in the flood risk areas maps; technical assistance and advice on all matters relating to the implementation of prevention and remedial measures to mitigate the impact if a flood occurs; emergency measures and their organisation.

Apparently, the law has failed to notice that all activities should be subsequent to "flood characterization", thus failing to create legal basis for flood trends detection leading to significant additional amount of uncertainty natural to flooding scenarios.

One possible solution is to incorporate the description of floods which have occurred in the past and which had significant adverse impacts on human health, the

[30] The latter is already amended in accordance to the The law on water management enterprise Official journal of Republic of Macedonia no 51/2015

environment, cultural heritage and economic activity in the regulation to be adopted[31].

The future stipulations of this implementing act should expressly take into account the descriptions on impact of the past climatology data, land use and demographic changes to the past flood occurrence, as well as data for the continuous monitoring of occurring floods relevant for detecting trends of changing flood patterns.

Additionally, the preliminary flood risk assessment may be based on the existing information available under the state water monitoring network in particular those on the water regime- parameters which define the quantitative and qualitative status of waters at a given place and in a given time: water level, current, flow direction, speed of the water, bed load/sediment transportation, physical, chemical, hydro- biological composition and properties of waters, and other parameters.

Finally, the assessment should be based on available or readily derivable information, such as records and studies on long term developments.

Similar to the previous RBMP "characterization", the climate change should be taken into account during the characterization phase of the flood management planning process and also, when creating scenarios for setting the objectives and measures. It is important that the preliminary risk assessment take into account of the medium and long-term implications of climate change to the occurrence of flooding.

Preparation of flood hazard maps and flood risk maps

The requirement for preparation of flood maps until 2013 arises from article 6 of the FD. It envisages elaboration of flood hazard maps showing flow extent, water level or flow velocity or the relevant water flow covering the geographical areas which could be flooded in future (with low, medium and high probability of flooding); and flood risk maps, associated with flood scenarios for all three categories of geographical areas referred in the flood hazard maps .

The Low requires elaboration of list and maps of wetlands, flood plains, shorelines of lakes and impounded waters as well as other aquatic systems; and list and flood risk areas maps, floodway and highest shorelines of lakes and impounded waters, provided as basic measures for protection of floods[32]. Both measures, basically fulfil the requirements for flood hazard mapping under FD, but are deficient in direct stipulations of the categories of geographical areas referred to in the flood hazard maps and the mapping of the potential adverse consequences in those areas. Furthermore, the mapping is not envisaged as part of a comprehensive planning process, but rather a basic measure for protection from floods. A possible solution is to incorporate the mapping of flood hazards and risks and the adverse impacts

[31] LoW Article 124 paragraph (5)
[32] Article 125 (1) Law on waters

on human health, the environment, cultural heritage and economic activity within the regulation to be adopted.

Objectives for the management of flood risks and measures

The FD requires MS to set the flood risk management objective "focussing on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity, and, if considered appropriate, on non-structural initiatives and/or on the reduction of the likelihood of flooding[33] as well as measures for achieving those objectives.

These are part of the Flood Risk Management Plans. The flood risk management plans shall mandatorily take into account relevant aspects such as costs and benefits, flood extent and flood conveyance routes and areas which have the potential to retain flood water.

The plans are required to address all aspects of flood risk management focusing on prevention, protection, and preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the particular river basin or sub-basin. Its required minimum content is: the conclusions of the preliminary flood risk assessment in the form of a summary map of the river basin district, or the unit of management, delineating the flood hazard areas identified under and which are the subject of this flood risk management plan; the flood hazard maps and flood risk maps and the conclusions that can be drawn from those maps; a description of the appropriate objectives of flood risk management and a summary of the measures and their prioritisation aiming to achieve the appropriate objectives of flood risk management.

Such a comprehensive data for a planning document is not envisaged in the Low. Instead, it envisages adoption of an operational plan for protection and defence against flood for affected areas aiming to implement the programme for protection from adverse effect of waters.

The operational plan should in particular contain topographic, hydrological, hydro-technical, demographic, economic and other documents and data, boundaries of the affected area, works and measures undertaken and executed before the danger of and during the defence against floods and the competent bodies with regard to the defence against floods. As conceptually foreseen, this operational plan is focused on emergency response and preparedness in cases of floods rather than all aspects of flood risk management focusing on prevention[34], protection[35],

[33] Article 7(2) FD
[34] preventing damage caused by floods by avoiding construction of houses and industries in present and future flood-prone areas; by adapting future developments to the risk of flooding; and by promoting appropriate land-use, agricultural and forestry practices
[35] taking measures, both structural and non-structural, to reduce the likelihood of floods and/or the impact of floods in a specific location

preparedness[36], including flood forecasts and early warning systems, and recovery of damages.

Furthermore, the preparation of this plan , in the light of the importance of potential impacts of climate change on floods, and the need to anticipate the impacts similar to the methodology in setting objectives and measures for the overall water management, as some types of floods as well as some types of flood management measures (such as land restoration) can also have beneficial aspects for increasing the climate change resilience of ecosystems such as the ecology of the river and flood plain, soil fertility, groundwater recharge, and biodiversity[37]. The Macedonian water management policy and planning should incorporate climate change ratio within the management, thus becoming adaptive water management.

Table 1 Floods Directive (2007/60/EC) – Law on Waters. General comparison between requirements and practice.

TIMETABLE FOR IMPLEMENTATION	
Actual or estimated date for:	**Day/month/year**
1. Setting up of administrative arrangements – identification of the competent authority (Art. 3)	01.01.2011
2. Description of Floods which have occurred in the past and which had significant adverse impacts on human health, the environment, cultural heritage and economic activity (Art. 4)	31.12.2023
3. Assessment of potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity (Art. 4)	31.12.2023
4. Preparation of flood hazard maps and flood risk maps (Art. 5)	31.12.2023
5. Establishing appropriate objectives for the management of flood risks (Art. 7)	31.12.2023
6. Establishing measures for achieving appropriate objectives for the management of flood risks (Art. 7)	31.12.2023
7. Establishing appropriate steps for coordinating application of Directive 2007/60/EC and Directive 2000/60/EG (Art. 9)	31.12.2023
8. Publishing preliminary risk assessment, flood hazard maps and flood risk maps, flood risk management plans making them available to the public (Art. 10)	01.01.2026
- Full implementation-	01.01.2027

Table 2. Floods Directive (2007/60/EC) – Law on Waters. Transposition and implementation.

Stages in which CC issues to be considered – FD (2007/60/EC)	Law on waters	
	Transposition	Implementation

[36] informing the population about flood risks and what to do in the event of a flood
[37] Technical Report - 2009 – 040, Common implementation strategy for the Water Framework Directive (2000/60/EC) Guidance document no. 24 River basin management in a changing climate, page 81

Setting up of administrative arrangements – identification of the competent authority (Art. 3)	✓	✓
Description of floods which have occurred in the past and which had significant adverse impacts on human health, the environment, cultural heritage and economic activity (Art. 4)	×	×
Assessment of potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity (Art. 4)	✓	×
Preparation of flood hazard maps and flood risk maps (Art. 5)	✓	×
Establishing appropriate objectives for the management of flood risks (Art. 7)	✓	×
Establishing measures for achieving appropriate objectives for the management of flood risks (Art. 7)	✓	×
Establishing appropriate steps for coordinating application of Directive 2007/60/EC and Directive 2000/60/EG (Art. 9)	✓	×
Publishing preliminary risk assessment, flood hazard maps and flood risk maps, flood risk management plans, making them available to the public (Art. 10)	✓	×

5.1.2 Assessing the institutional constrains towards cross- border integrated flood management policy – summary of the main strengths, weaknesses and effects

There are some additional notions on the organization of the flood management system in the country:

1. The authority which is responsible for the coordination of multiple authorities is the Ministry of Environment and physical Planning (LW article 123). In a case of Crisis situation, according to the Law on crisis management, the Government, for purpose of coordination establishes a Managing body that consist of the Ministers of: interior affairs, health, transport and communication, defence, foreign affairs and head of group for assessment. In a case of crisis situation, all public institutions, public enterprises, local municipality authorities, NGO's and other governmental bodies have their own responsibilities.
2. There are number of overlaps in the process of planning, programming, organization, management, command, and coordination, implementation, financing and monitoring of timely and effective prevention and preparation, action and removing the causes and consequences of natural and other disasters. The coordination should be clarified especially in the Law on waters and Law on protection and rescue.
3. There are number of uncoordinated planning documents for flood management: the national water strategy, water Master plan , RBMP and the programme for protection from adverse effects of waters and the flood protection operational plan from one side and the National Strategy for Protection and Rescue , the annual programs for protection and rescue, the plans for protection and rescue from natural and other disasters (operational planning) and the Assessment of the damages of natural disasters and other accidents on the other. There is a national methodology for risk assessment for all hazardous events but merely not in accordance to the Floods directive.

1. The competence for the early warning system and managing data (collecting, managing, servicing, making public) as well as the maintenance of the early warning system is also distributed among authorities. The Administration for Hydro-meteorological activities has full responsibility for meteorological and hydrological monitoring (monitoring, collecting, maintenance of data etc). AHMA from rain gauge stations collects the following data: (i) Climate data (hourly, daily, monthly): precipitation, temperatures (soil and air), pressures, wind speed and direction, relative humidity, cloudiness, snow cover, evaporation etc. The data collection process for automatic weather stations of FHMI is based on the new IMS software, receiving and sending data through the ADSL connection, which completely abolished the previous method of communicating by phone and radio stations. HMI has access to

25 automatic hydrological stations with real-data transfer by using radio and/or GSM telecommunication systems. Water Agencies submit to HMI data on water levels from 50 hydrological stations. AHMA deliver information to the CMC. The Crisis management centre collects data on the past floods. In a case of extensive flooding, early warning system exists (AHMA, Crisis Management Centre) inform citizens about possible hazard. Although AHMA is included in radar observation, in a case of torrent flash floods, because of speed onset of this type of flood and uncertainty, there is not official warning. Notably there is absence of early warning system for flash floods. Municipal authorities are obliged to collect data and to prepare Assessments of damages on state and private property from all hazards (including floods) and to deliver the report to the Ministry of Finances.

2. There is a lack of organized system for floods/droughts assessments, of methodologies for floods/droughts mapping and of technical knowledge and expertise and human resources. In this framework there is the need for:
   - improvement of the mutual cooperation, communication and data and information sharing between CMC and CMSs entities; this includes the development of SOPs for timely information and cooperation of the institutions and a clear attribution of tasks and duties;
   - preparing guidelines and methodologies for hazard and risk assessment;
   - establishment of the permanent process of data analysis and processing;
   - establishment of integrated hazard mapping process;
   - establishment of proper dissemination process for results of risk assessment;
   - capacity building in drought and floods hazard and risk assessment.
3. The flood assets (e.g. pump station) and establishments (dike, reservoir, channel) (e.g. state, province, municipalities) are ownership of the State. Authority for maintenance of the flood assets and establishments lay within the municipalities, City of Skopje and municipalities in the City of Skopje for the assets within the urban areas under their competence as well as within the legal entities managing water management enterprises including flow regulation and maintenance of the shores and beds within the territory under their competence;
4. Dams are in state property. The maintenance of the dams is responsibility of: Water management enterprises (Water-economies on the territory – part of basins where they are competent) and dams are predominantly for irrigation. Other state owned public enterprises that managed only 1 dam as follow: PE Zletovica, PE Lisiche, PE Strezevo – dams mainly for water supply. Joint stock company in state ownership JSC Macedonian Power Plants (dams for energy production) and EVN – (only dam MATKA – for energy production).
5. Many gaps in human resources and their capacity at the various organisations involved in flood management (number of personnel in the relevant department, educational level, experiences with flood modelling,

risk assessment) may be identified. All institutions have no more than one competent personnel[38]. There is also lack of experience for risk assessment, preparation of flood hazard and flood risk maps according to the Flood directive.

Due to the small size of the WMP budget sufficient to cover only the basic administrative costs of the organs of public administration, the budgets intended for flood protection measures are predominantly financed through the central government budget on an ex-post basis. Thus, it can be concluded that the actual spending on flood protection is reduced to recovery measures i.e. measures taken after a flood event takes place. This can be confirmed by the information provided within the PDNA[39] from the most recent Rapid damage and needs assessment report in Republic of N. Macedonia[40], and the proposed recovery framework. The recovery framework outlines the short, medium and longer term needs and priorities for the recovery process post-disaster, based on the reported damage and loss figures as a basis for understanding the disaster impact.

The total damages and losses by the 2015 floods, which affected 43 of the total 80 municipalities, were estimated at 35.7 million EUR, of which 22.2 million EUR represented the destruction of physical assets (damages) in the affected areas, and 13.5 million EUR represented estimated losses in production and economic flows. The total damage represented 62% of the total economic impact of the floods, while the remaining 38% were losses, as presented in Table 2.3. The most severe impacts were experienced in the Transport (42.8%), Agriculture (38.3%), Irrigation and drainage (13.7%) sectors, which together take up almost 95% of the total damage and losses. The illustrated damages and losses indicate that the recovery and reconstruction process in infrastructure (transport, water and sanitation and housing) exceeds the limited public investment budgets of the local self-government units and thus requires additional funding from the central government.

[38] The Water Sector, Environmental Agency within Ministry of Environment and Physical Planning maintain capacity of a single civil engineer primary dealing with water rights. The situation is the same at the Protection and rescue Directorate. The Sector Hydrology within Administration for hydro-meteorological activities has less than 3 hydro-engineers, - 1 high experienced hydro-engineer; Ministry of agriculture, forestry and water economy- the Administration for water economy has 4 high experienced persons for all water management issues Crises Management centar has high experienced persons for crisis system, informing, alerting, mobilization (dominantly launched Army academy) etc. Spatial Planning Agency has one multi-hazard /multi- risk assessment specialist for spatial planning purposes. The Urban planners are not enough educated and aware for importance of this matters.
[39] Post Disaster Needs Assessment
[40] Rapid Damage and Needs Assessment Report, Republic of Macedonia, March 2015

5.2 Memorandum of Cooperation between Greece and the Republic of North Macedonia

Greece has co-signed numerous bilateral and multilateral agreements, and one of them is a Memorandum of Cooperation in the field of Civil Protection with the Republic of North Macedonia.

Specifically, since January 2021, there has been a Memorandum of Cooperation between Greece and the Republic of North Macedonia in the field of Civil Protection. Under this Memorandum of Cooperation, collaboration between the two countries is envisaged in the areas of exchanging experts in mutually interesting fields, jointly planning and conducting exercises, and organizing seminars on natural and technological disasters. While the Memorandum does not make specific reference to floods, it addresses them with the same seriousness, solidarity, organization, and protocols as other situations.

In the event of a flood phenomenon, each country has developed its own mechanisms for addressing the consequences and population relief. In cases where a disaster exceeds domestic capabilities, there is the possibility of activating the European Civil Protection Mechanism (ECPM) (see Chapter 3.1), as well as the possibility of bilateral assistance. Specifically, the Republic of North Macedonia fully participates in the European Civil Protection Mechanism (ECPM) since September 2021.

In the past, Greece, within the framework of the ECPM, has assisted the Republic of North Macedonia by providing materials for dealing with floods in 2016, such as pumps, generators, etc. (as well as in the context of pandemic response in 2021).

5.3 Proposals to Redefine the Procedures for Overcoming Barriers to Cross-Border Cooperation

In order to redefine the procedures for overcoming barriers to cross-border cooperation, a direct open line between the two countries is proposed, as well as the exchange of various data, such as water quality and meteorological data.

A direct open line of communication between the two countries refers to a direct and unimpeded channel for the exchange of information, dialogue, and coordination between the relevant agencies of the two neighboring nations. This communication link is established to facilitate swift and efficient bilateral communication in time of emergency (such as an upcoming flood incident) when immediate collaboration is required.

Key characteristics of such a direct line include:

- Unrestricted Access: The communication channel should be accessible without unnecessary obstacles or delays. This may involve the use of dedicated hotlines, secure email systems, or other direct communication tools.
- Real-Time Communication: The line of communication is designed to allow real-time exchanges, enabling prompt decision-making and response during flood emergencies.
- Security Protocols: To ensure the confidentiality and security of sensitive information, the communication line should incorporate encryption or other security protocols to protect against unauthorized access.
- Multi-Agency Coordination: The communication link may involve various government agencies, including those responsible for national security, emergency management, health, and border control. This multi-agency coordination ensures a comprehensive approach to cross-border issues.
- Protocol for Activation: There should be a clear protocol outlining when and how the direct open line of communication is activated. This could be triggered by specific events, such as natural disasters, security threats, or public health emergencies. This protocol may also be included in the Memorandum of Understanding.
- Regular Testing and Training: To maintain effectiveness, the communication system should undergo regular testing and training exercises. This helps ensure that relevant personnel are familiar with the procedures and that the technology is functioning optimally.
- Cultural Sensitivity: Recognizing the cultural nuances and diplomatic considerations between the two countries is crucial for effective communication. Understanding each other's communication styles and preferences contributes to successful collaboration.
- Mutual Trust and Transparency: A direct open line of communication thrives on mutual trust and transparency. Countries involved must be confident in sharing information and collaborating for the greater good of both nations.

Such a direct open line of communication could be particularly valuable for addressing shared challenges, such as floods and it can contribute to building stronger and more resilient cross-border relationships. It could be an essential component of diplomatic and strategic efforts to enhance cooperation between the neighboring nations.

Concerning the exchange of water quality and meteorological data between the neighboring countries, it is crucial for effective flood management and response. Such collaboration enhances the ability of countries to anticipate, monitor, and mitigate the impacts of floods. Shared meteorological data is fundamental for the development and operation of Early Warning Systems. Real-time information on precipitation, river levels, and weather patterns helps in forecasting potential flood events, allowing for timely alerts and preparedness measures.

Concerning river flow and water quality monitoring, the neighboring Partners can collaborate to monitor river flow and water quality in the Axios/Vardar River. This involves the exchange of data on water levels, discharge rates, and the quality of water parameters such as pollutants and contaminants.

Standardizing data formats and quality control procedures ensures seamless data exchange and facilitates the integration of information from different sources. Harmonization of data allows for a more comprehensive and accurate understanding of the shared hydrological system. Collaborative research initiatives and joint monitoring programs can be established to study the hydrological characteristics of shared river basins. This may involve the deployment of research teams, the sharing of data collected from various monitoring points, and the development of common flood risk models.

In the event of a flood, shared data enables coordinated emergency responses. The neighboring Partners can align their efforts, share resources, and implement joint response strategies to minimize the impact of the flood on both sides of the border. Bilateral or multilateral agreements, guided by regional or international frameworks, can formalize the commitment to data exchange and collaborative flood management. Such agreements provide a legal and institutional basis for cooperation.

By fostering collaboration in the exchange of water quality and meteorological data, neighboring Partners can enhance their resilience to floods, protect shared ecosystems, and contribute to regional stability and sustainable development.

Lastly, the creation of bonds among services at the operational level may enhance the know-how and way of operation and facilitate certain procedures or even ensure more instant reactions and effective collaboration beyond the political environment.

Appendix I

INSTRUCTIONS OF CIVIL PROTECTION FOR CITIZENS AGAINST NATURAL DISASTERS

1. Severe Weather Phenomena

General Instructions

- ✓ *Be constantly informed by radio and television on the progress of the phenomena. The General Secretariat for Civil Protection and the National Meteorological Service are the formal sources of information.*
- ✓ *In case of emergency call alternatively: the Police (100), the Fire Service (199) the National Center for Emergency Care/ EKAB (166) or the European Emergency Call Number (112).*
- ✓ *Place the above mentioned phone numbers in a visible position inside the house and make sure that your children are informed of them, if they are able to use them.*
- ✓ *Help your children learn important family data such as their last name, the address and the phone number of your home.*
- ✓ *Explain to all family members when and how to switch off electric power, natural gas and water supply, how to use the fire-extinguisher and how to call for help.*
- ✓ *Be equipped with emergency equipment, such as a first aid kit, fire extinguisher, torch and batteries, a portable radio etc.*
- ✓ *Take special care of children and the elderly.*

After the incident

- ✓ *Be constantly informed by radio and television for formal warnings or advice.*
- ✓ *Check the house and the rest of your property to draw up a list of eventual damages.*

If you are going to travel

- ✓ *Be informed of the weather and the condition of the roads.*
- ✓ *Be prepared, according to your destination, for any weather phenomena you may encounter (snow, ice, hail, rainfall, etc.)*
- ✓ *Plan your movement in a way not to coincide with the peak of the weather phenomena.*
- ✓ *Travel during the day and prefer highways avoiding deserted and difficult to access roads.*
- ✓ *Inform all your relatives of the itinerary you intend to follow.*
- ✓ *Don't ignore the instructions of the General Secretariat for Civil Protection, the weather forecasts and the instructions of the Authorities, such as the Traffic Police, the Port Authority, the Fire Service, etc.*
- ✓ *Check the condition of your car before attempting any movement.*
- ✓ *Equip your car with all necessary equipment in order to face any heavy weather phenomena (tire chains, anti-freeze, umbrellas, raincoats, rubber boots, a torch, first aid kit etc).*
- ✓ *If you have to move on foot, put on suitable clothes and shoes.*

- ✓ *Be careful when walking in order to avoid being injured due to the slipperiness of the roads and pavements or due to objects falling by the wind or hail.*
- ✓ *Prefer public transport.*
- ✓ *Remain calm and be patient. Panic makes the situation worse.*
- ✓ *Facilitate the work of the Authorities.*

2. EARTHQUAKES

GETTING PREPARED

If you are indoors

- ✓ *Fasten shelves and bookcases to the walls. Remove from the doors tall furniture that could be overturned and block the exit.*
- ✓ *Screw well fuel and water tanks and heaters to the walls.*
- ✓ *Place heavy objects on lower shelves.*
- ✓ *Remove heavy objects from above beds and sofas.*
- ✓ *Fix well all lights and ceiling fans.*
- ✓ *Locate safe spots in each room of the house:*
  - *- under sturdy desks or tables,*
  - *- away from glass surfaces and bookcases,*
  - *- away from exterior walls.*
- ✓ *Check the correct function of the electric and gas network.*
- ✓ *Inform family members how to turn off electricity, water, gas and on the emergency numbers (112, 199, 166, 100, etc).*
- ✓ *Be equipped with a portable radio with batteries, a torch and a first aid kit.*

If you are outdoors

- ✓ *After the earthquake, agree to meet outdoors at a specific place that is safe and away from:*
  - *- buildings and trees,*
  - *- electric and telephone cables.*

DURING THE EARTHQUAKE

If you are indoors

- ✓ *Stay calm.*
- ✓ *Take cover under sturdy furniture (table, desk), kneel and hold its leg with your hands.*
- ✓ *If there is no sturdy furniture around, kneel in the middle of the room, lower your height as much as possible and protect your head and nape with your hands. Move away from large glass surfaces (windows, glass dividers), furniture or objects that could injure you.*
- ✓ *Do not attempt to go out of the house.*
- ✓ *Do not go out on the balcony.*

If you are in a tall building

- ✓ *Move away from glass and exterior walls.*

If you are in a recreation place, store or mall

- ✓ *Stay calm.*
- ✓ *Stay indoors until the earthquake stops.*
- ✓ *Stay away from the panicked crowd moving disorderly toward the exits because of risk of being trampled.*

If you are outdoors

- ✓ *Move away from buildings, electric or telephone cables.*
- ✓ *Cover your head with a briefcase or a purse available.*

If you are in a moving vehicle

- ✓ *Drive to an open space and stop the car carefully so as not to obstruct traffic.*
- ✓ *Avoid tunnels, bridges or pedestrian overpasses.*

AFTER THE EARTHQUAKE

If you are inside

- ✓ Be prepared for aftershocks.
- ✓ Check if you or anyone around you is injured.
- ✓ Do not move seriously injured persons.
- ✓ Evacuate the building using the stairs (do not use the elevator), after switching off the electricity, gas and water.
- ✓ Go towards an open and safe space.
- ✓ Follow the instructions of the authorities and do not pay attention to rumors.
- ✓ Do not drive unless there is an emergency, so as not to block the work of the rescuers.
- ✓ Use your land line or mobile telephone only in emergency to avoid network overload.
- ✓ Avoid entering your home if you notice damages, gas leakage or any cables destroyed.

IN CASE OF A TSUNAMI

If you are close to a seaside with low altitude

- ✓ Not all earthquakes cause a tsunami. However, when you feel an earthquake, stay alert.
- ✓ Observe if there is a significant rise or fall of the water level. This phenomenon is a physical warning for an oncoming tsunami.
- ✓ After a strong earthquake leave the seashore and go towards mainland areas of higher altitude. A relatively small-sized tsunami at parts of the coastline could be transformed into an extremely dangerous one in a distance of several kilometers.
- ✓ Stay away from seaside areas until you are informed by the competent authorities that the danger is over. A tsunami is not a single wave but a series of waves with different time of arrival at the seashore.

- ✓ Do not approach the shore in order to watch a tsunami coming. When you see the tsunami coming, it will probably be too late to avoid it.

3. LANDSLIDE

PREPAREDNESS FOR LANDSLIDES AND SOIL SUBSIDENCE

Areas with greater risk of landslide

- *In areas of previous landslides.*
- *On top or at the base of steep slopes or hillsides.*
- *At the base or on top of embankments and excavations.*
- *Strong shaking of the ground caused by earthquakes can cause landslides or intensify their impact.*

Before the onset of the landslide

- ✓ *Landslides usually occur in areas where they have happened in the past. Ask for information on landslides in your area, and possibly seek a detailed expert opinion on the area where your property is located.*
- ✓ *If your home is within an area with an increased risk for the occurrence of landslide, minimize the risk by planting the slopes within your property and constructing retaining walls.*

If you suspect an imminent risk of landslide.

- ✓ *Contact the local authorities, the Fire Service, the Police or the Technical Works Directorate. Local authorities are best placed to assess a potential risk.*
- ✓ *Inform your neighbors. They may not be aware of the possible risks.*
- ✓ *If you are in dangerous areas for landslides and mudslides, inquire about the possible escape routes. Remember however that driving during heavy rain is very dangerous.*
- ✓ *Stay informed from the media and the Internet about warnings related to phenomena of intense or prolonged rainfall. After periods of prolonged rainfall the risk of landslides is increased.*

During the landslide

- ✓ *Move as quickly as possible away from the event area of the landslide.*
- ✓ *If you stay at home, move to higher floors.*
- ✓ *If you cannot leave, sit on the floor in a fetal position and protect your head.*
- ✓ *Be prepared to move quickly. Give priority to your own safety and not to your possessions.*
- ✓ *Stay alert and vigilant while driving. The curbs along the roads are particularly susceptible to landslides and rockfalls. Pay attention to the road for possible signs of soil subsidence, collapse, rockfalls etc.*

After the landslide

- ✓ *Stay away from the area of the landslide. There may be a risk of new landslide event.*
- ✓ *Monitor local radio or television stations for the latest information on dealing with emergencies arising from the onset of the landslide.*
- ✓ *Check for injured and trapped people around the event area of the landslide, without entering the actual area of the landslide. Direct rescue teams to the positions of the trapped.*
- ✓ *Check for damage to utility networks, roads, railways and report damage to the competent authorities.*
- ✓ *Check for damage to the critical points for the statics of your home.Μείνετε μακριά από την περιοχή της κατολίσθησης.*

4. FOREST FIRES

GETTING PREPARED

If you are in the countryside

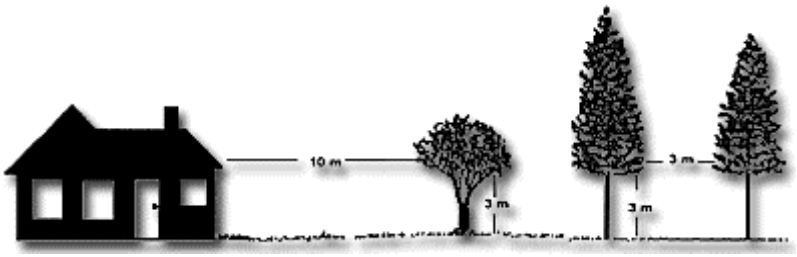
- ✓ *Don't burn litter or dry vegetation and small branches (twigs) during the summer.*
- ✓ *Don't use open-air barbecues in forests or places close to dry vegetation during the summer.*
- ✓ *Avoid open-air activities that may cause fire (i.e. torch weld, wheel or other instruments that create sparks).*
- ✓ *Never throw lit cigarettes in open-air places.*
- ✓ *Don't leave rubbish in the forest. There is danger of ignition.*
- ✓ *Respect the signs prohibiting access in periods of high risk*

If your home lies inside or near a forest or a forest area

- ✓ *Create a fire break around your home by clearing dry leaves and vegetation, pine-needles, branches etc at least within a 10 meter radius of your house.*
- ✓ *Prune the trees up to the height of 3 meters, according to their age and condition.*
- ✓ *Remove all dry branches from the trees and the bushes.*
- ✓ *Prune the trees within a 5 meter radius from your home so that their branches don't lean on the walls, on the roof or the balconies.*
- ✓ *Space out around the building the woody vegetation so that the branches of one tree are at least 3 meters apart from another. For greater protection, remove the woody and bushy vegetation around the building at a distance of at least 10 meters, provided that the clearing of natural vegetation for the necessary protection of buildings is not contrary to the forest legislation provisions.*
- ✓ *Don't install plastic drain spouts or pipes to the walls of the building.*
- ✓ *Protect the windows and the glass doors by installing shutters from non-flammable materials.*

- ✓ *Cover the chimneys and the ventilation pipes with non-flammable material so that the sparks will not penetrate the interior of the building.*
- ✓ *Don't store flammable objects close to the house.*
- ✓ *Keep the fire-wood in closed and protected places.*
- ✓ *Don't build uncovered fuel tanks close to the house.*
- ✓ *Be equipped with the appropriate fire-extinguishers and take care of their maintenance.*
- ✓ *Be equipped with a water hose with length proportional to the area you want to protect.*

✓ *Be equipped with a water tank, a simple non-electric powered pump and a water hose.*



If you notice fire

- ✓ *Call IMMEDIATELY the Fire Service call center (199) and give clear information about:*
  - *the location and the exact point where you are,*
  - *the location, the exact point and the direction of fire,*
  - *the kind of vegetation that is burning.*

GETTING PREPARED

If fire is approaching your home

- ✓ *Stay calm.*
- ✓ *Remove all the flammable materials from around the building to closed and protected places.*
- ✓ *Close all the passages (chimneys, windows, doors etc) to prevent sparks entering the building.*
- ✓ *Shut off all the gas and liquid-fuel supplies inside and outside the building.*
- ✓ *Close the awnings on the balconies and the windows.*
- ✓ *Open the gate of the garden to facilitate the fire fighting vehicle access.*
- ✓ *Put a ladder outside the building so that someone is able to climb immediately on the roof. The ladder should be placed at the opposite side of the fire direction.*

- ✓ *Connect the water hoses with the taps outside the building and spread them so that the perimeter of the building is covered.*
- ✓ *If visibility is reduced, switch on the interior and exterior lights of the building in order to be more visible through smoke.*

If fire has reached your home

- ✓ *Do not abandon the building unless your escape is completely secured.*
- ✓ *Do not take shelter in a car. The possibility of survival in a building constructed by non flammable materials is greater than that inside a vehicle close to smoke and fire.*

If you stay indoors:

- ✓ *Close firmly all the doors and windows.*
  - *Block up all the cracks with wet clothes, in order to prevent smoke penetration.*
  - *Remove the curtains from the windows.*
  - *Move any furniture into the center of the residence away from windows and exterior doors.*
  - *Close all interior doors to slow down the fire spreading in the building.*
  - *Fill up the bathtub, wash-basins and buckets so that you have spare water.*
  - *Gather all together in one room.*
  - *Keep a torch and spare batteries at hand in case of electric power failure.*
- ✓ *If your home is made of wood, seek shelter in a fire-resistant building.*
- ✓ *If organised relocation is ordered, strictly follow the instructions and the routes suggested by the Authorities.*
- ✓ *Get out of the house and at once put out the remaining hot spots.*
- ✓ *Inspect for at least 48 hours, at regular intervals, the perimeter and the exterior of the building for possible re-ignitions.*

5. FLOODS

GETTING PREPARED

If you live in an area with flood problems in the past

In case of severe rainfall warning:

- ✓ *Make sure that the water drains and rain spouts outside your house are not blocked and operate properly.*
- ✓ *Limit traveling as much as possible and avoid working or living in underground places.Σε περίπτωση που ενημερωθείτε για την εκδήλωση έντονης βροχόπτωσης στην περιοχή σας:*

DURING THE FLOOD

If you are indoors

- ✓ *Avoid underground places and move to a secure higher point.*

If you are outdoors

- ✓ *Do not cross torrents on foot or by car*
- ✓ *Stay away from electric wires.*
- ✓ *Abandon your car if it gets immobilized as it might be swept away or flooded.*
- ✓ *Avoid areas where landslides have occurred.*

AFTER THE FLOOD

If you are outdoors

- ✓ *Stay away from flooded areas or areas dangerous to flood in the next hours*
- ✓ *The flood is likely to have changed the known area characteristics and waters might have swept away parts of the streets, the pavements etc.*
- ✓ *Dangers are imminent from broken pavements, areas with dangerous slope, mudslides etc.*
- ✓ *The water is likely to be polluted from rubbish, dead animals or other materials.*
- ✓ *Be careful not to obstruct rescue crews.*
- ✓ *Don't approach areas where landslides and rock falls have occurred.*
- ✓ *Check if your house or place of work runs the risk of a possible fall of rocks.*

If it's absolutely necessary to walk or to drive in flooded areas

- ✓ *Try to find solid ground.*
- ✓ *Avoid moving waters.*
- ✓ *If you see a flooded street, stop and change direction.*
- ✓ *Avoid stagnant waters that could be electric-current conductors if there are underground power cables or leaks.*
- ✓ *Follow the authorities' instructions*

What to do during restoration of damages

Before you begin restoration works

- ✓ *Remember: Even when flood waters recede danger still exists.*
- ✓ *Contact the Authorities to ensure that the location of your home or your place of employment is safe to return, particularly if there was prior evacuation.*

- ✓ *Switch off the electric supply even if the power company has switched off the whole area.*
- ✓ *Turn off the water supply in case of potential damage to the water supply*

To inspect a flooded building

- ✓ *Wear protective shoes so as not to get injured from objects or irregularities of the ground hidden by water.*
- ✓ *Examine the walls, doors, stairs and windows.*
- ✓ *Check the networks of electric power, water and drainage systems.*

PAY ATTENTION TO IRISH CROSSINGS (LOW WATER CROSSINGS)!

There are places on the road network, where the road crosses streams and where there is no bridge. In order to facilitate the local movement of vehicles, a makeshift construction solution is implemented by means of concrete paving. This construction is called an Irish crossing.

Accidents and fatalities are frequent occurrences when crossing an Irish crossing.

When you come across an Irish crossing:

- ✓ *Exercise the necessary caution.*
- ✓ *While on foot or in a vehicle, do not cross an Irish crossing when it is flooded. Your life is at risk!*
- ✓ *Do not overestimate the suitability of your vehicle.*
- ✓ *It is better to drive for a few extra kilometers, choosing another route, so that you can safely reach your destination.*

6. STORMS

DURING THE STORM

If indoors

- ✓ *Secure all objects that may be carried away by the wind or the heavy rain and cause damage or injuries.*
- ✓ *Secure all suspended signs and billboards.*
- ✓ *Secure doors and windows.*
- ✓ *Avoid touching water pipes (kitchen, bathroom) as they are good electricity conductors.*

If outdoors

- ✓ *Seek refuge in a building or a car, otherwise sit on the ground without lying down.*
- ✓ *If you are in the woods, protect yourself under the dense branches of low trees.*
- ✓ *Never stand under a tall tree in an open space.*

- ✓ *If you are in low land, be careful as a flood may occur.*
- ✓ *Don't stand close to transmission pylons, tall trees, fences, telephone cables and electric lines.*
- ✓ *Avoid being close to metal objects (such as cars, bicycles, camping equipment, etc).*
- ✓ *Stay away from rivers, lakes or other water bodies.*
- ✓ *If you are in the sea, get out quickly.*
- ✓ *If you are isolated on a plane area and feel your hair stand up (a fact that indicates the imminent occurrence of lightning), assume duck position, burry your head between legs (to minimize the surface of your body and the contact with ground) and throw away any metal objects you carry.*

In a vehicle

- ✓ *Stop the car by the roadside away from trees that may fall on the car.*
- ✓ *Stay in the car and turn on the emergency lights until the storm stops.*
- ✓ *Close the windows and do not touch metal objects in the car.*
- ✓ *Avoid flooded roads.*

DURING HAIL

- ✓ *Protect yourself immediately. Do not leave the safe place unless you make sure that the storm has stopped. Hail can also be very dangerous for animals*

7. STORMY WINDS

GETTING PREPARED

Before and during gale force winds

- *Secure all objects that may be swept along by the wind causing damages or injuries.*
- *Secure any billboards you may have installed.*
- *Secure doors and windows in your home or workplace.*
- *Avoid activities at shore and coastal areas.*
- *Avoid passing under big trees, under suspended signs and generally near areas where light objects (such as flower pots, broken glasses etc) may fall on the ground (i.e., under balconies etc).*

8.1. SNOWFALL

Before the snowfall or the snowstorm

If you live in a mountainous or difficult to access area facing problems by snowfalls

- ✓ *Be equipped with heating materials and food provisions for several days.*

- ✓ *Be equipped with the necessary equipment to remove the snow (i.e. shovels).*

DURING THE SNOWFALL OR THE SNOWSTORM

If you are indoors

- ✓ *Keep your house warm and stay indoors, as much as possible.*
- ✓ *Do not let children go out unaccomapanied.*
- ✓ *Put on suitable clothes and shoes.*
- ✓ *Inspect the water supply as well as the pipes and solar heater panels.*

In a vehicle

- ✓ *Avoid driving in rough mountain areas.*
- ✓ *Change your itinerary if there is a strong snowfall and you are in a rough road.*
- ✓ *Keep a safe distance from the vehicles in front of you.*
- ✓ *Stay in the car if it has stopped. Put a bright colored cloth on the radio antenna or other visible spot so that the rescue teams can locate you. Start the engine for 10 minutes per hour and remove snow from the exhaust.*

If outdoors

- ✓ *Go to a safe place without exposing yourself to the snowstorm.*
- ✓ *Dress in layers of light and warm clothing instead of one heavy layer. Put on warm and waterproof boots. Prefer waterproof overcoat.*
- ✓ *Be extremely careful when moving in areas where snowfalls are expected to occur.*
- ✓ *If it is absolutely necessary to drive, use tire chains. Prefer to travel during the day. Use highways and inform your relatives of your itinerary.*
- ✓ *If you need to travel in the city, prefer public transport.*

8.2. FROST

GETTING PREPARED

- ✓ *Special attention is required in the areas where frost has been created when you drive. Be informed in advance, for the road network situation and make sure that you carry tire chains.*
- ✓ *If you are on foot wear suitable shoes and be careful so as to avoid injury because of slippery roads, pavements etc.*

Residential water supply grids

- ✓ *Learn where exactly your water-meter is. Observe carefully where the central and the circumferential water valves (switches of your building) are situated. Inspect and make sure that all water supply valves switch on and off and work properly.*

- ✓ *Make sure the external pipes (e.g. solar heater, balcony taps) are insulated. In the opposite case, you must take care that they are insulated the soonest possible.*
- ✓ *If you are going to be absent for a long time during winter insulate or better drain the network of the solar–water heating system. In addition regulate the heating system of your building, in order to be operated automatically in low temperatures.*
- ✓ *In case you have a solar–water heating system take care during the frost (especially at night) to switch off the water supply towards the boiler and empty out the water from the system.*
- ✓ *Don't waste water to remove the snow or the frost.*
- ✓ *Try to limit the daily activities that demand increased water consumption (such as washing machines etc).*
- ✓ *Learn whether the manufacturing company or a technician has put anti-freeze liquid in your solar water heater (in the case of closed circuit). If not, get the proper anti-freeze and put it.*
- ✓ *Make sure that there is no tap or toilet leakage otherwise repair them immediately.*
- ✓ *Be sure that the drains in the balconies and terraces are clean from leaves and rubbish and operate normally.*

In case the central pipes freeze

- ✓ *Switch off immediately the central valve of water-supply of your building and check your water-meter. If it continues to "run", this means that there is leakage in your network. Switch off immediately the central water supply valve and call a plumber.*
- ✓ *If you decide to defrost the pipes, start from the part of pipe near the valve so that the temperature change is gradual. If there are no results call a plumber.*
- ✓ *Check if the electrical installations are wet or in danger and insulate them.*

9. HEAT WAVE

DURING A HEATWAVE

- ✓ *Avoid sunbathing and remain in shaded and cool places avoiding crowded places.*
- ✓ *Avoid heavy physical work, particularly in places with high temperature, no wind and great humidity. Avoid walking for a long period of time or running under the sun.*
- ✓ *Prefer light, comfortable and light colored clothing from porous material in order to facilitate the airing of the body and the vaporization of sweat. Wear a hat or other head gear from natural material that permits the good airing of the head. Wear black or dark colored glasses with special layer which protect the eyes from the reflection of the sun.*
- ✓ *Prefer small and light meals, with emphasis on fruits and vegetables. Limit fatty foods.*

- ✓ *Drink large amounts of liquids (water and fruit juices). If sweating is intense, add salt to your food. Avoid alcoholic drinks.*
- ✓ *Have many lukewarm showers during the day and place wet washcloths on your head and neck.*
- ✓ *Take care of family members suffering from chronic diseases (respiratory, cardiovascular etc). Consult their doctor for the application of special instructions. For those who take medicines also consult their doctor.*
- ✓ *Avoid long travels with public transport when the heat is at very high levels.*

CARE FOR BABIES AND CHILDREN

- ✓ *Dress them as lightly as possible. Make sure their hands and feet are free and not covered by nappies.*
- ✓ *Make sure they are not exposed to the sun after swimming and they always wear a hat.*
- ✓ *In addition to milk, it is recommended they drink other liquids as well. Consult your pediatrician.*
- ✓ *As far as children are concerned, make sure they drink a lot of fluids (water and juices) and they eat more vegetables and fruits and fewer fats.*

CARE FOR ELDERLY PERSONS

- ✓ *Move them to cooler places or areas (seaside or mountain), as a very hot and damp environment becomes dangerous. Alternatively, take care that they stay in lower apartments of multi-storey houses.*
- ✓ *During nighttime keep the house open so that it is cooled and during daytime keep it hermetically closed.*
- ✓ *Don't leave elderly persons alone during summer vacations or during many days' absence from home. In the opposite case, make sure that a person takes care of them.*

10. VOLCANOES

PREPAREDNESS FOR VOLCANIC ERUPTIONS

The volcanic risk in Greece is limited to the active volcanoes of Santorini and Nisyros and within a few tens of kilometers from these.

BEFORE THE ERUPTION

- ✓ *Be prepared for the phenomena that accompany volcanic eruptions, such as ejection of rock, pyroclastic flows (condensed volcanic ash moving at high speeds), mudflows, landslides, earthquakes, emission of toxic gases, volcanic ash fall and tsunami.*
- ✓ *If you live in an area near a volcano have a family evacuation plan and select an appropriate escape route according to the instructions of the authorities.*

DURING THE ERUPTION

If you find yourself in close proximity to the eruption

- ✓ *Withdraw immediately and move to areas with relatively high altitude, since there is a high probability of ejection of rock, lava flows and pyroclastic flows, as well as emission of toxic gases.*
- ✓ *Carefully follow the instructions for evacuation of the area given by the authorities.*

If you find yourself at a good distance from the eruption but there is fall of volcanic ash

Indoors:

- ✓ *Stay informed from the media and the Internet about whether to evacuate the area or remain in covered spaces.*
- ✓ *Close all doors and windows. Place wet towels under the doors and seal with duct tape doors and windows that do not close airtight.*
- ✓ *If you suffer from chronic respiratory problems, stay inside and avoid unnecessary exposure to volcanic ash. Wear disposable mask to protect yourself from volcanic ash that may have penetrated the interior.*
- ✓ *If you experience irritation to the eyes, nose or throat immediately leave the area because the irritation is probably due to the presence of toxic gases. When you find yourself in an area without high concentration of toxic gases the irritation ceases.*
- ✓ *If you can, avoid driving. Volcanic ash creates problems for internal combustion engines and makes the roads especially slippery. If driving is necessary, drive at a reduced speed, with elevated windows and no air conditioning. Use fog lights and plenty of liquid on the windshield wipers.*
- ✓ *If you are in a coastal area move to areas with higher altitude as various phenomena that accompany a volcanic eruption can cause water gravity waves (tsunamis).*

Outdoors:

- ✓ *Wear full coverage clothing, protective safety glasses and disposable mask to protect yourself from volcanic ash.*
- ✓ *Try to take cover indoors. If this is not possible, cover your head to protect yourself from falling volcanic materials of larger size.*
- ✓ *If you can, avoid driving, otherwise drive according to the instructions given above.*

AFTER THE ERUPTION

- ✓ *Stay indoors, especially if you have a chronic respiratory problem.*
- ✓ *Continue to wear protective safety glasses and disposable mask.*
- ✓ *Continue to wear full coverage clothing.*
- ✓ *Remove the volcanic ash from your roof since it may become too heavy and cause a collapse.*
- ✓ *Remove the volcanic ash from the exterior and the interior of your home.*

11. INDUSTRIAL ACCIDENTS

General Instructions for Self-Protection from Industrial Accidents

Below are General Instructions for self-protection that should be followed in the event of an industrial accident. Please note that, in addition to the above general instructions, further site-specific information is posted by the individual operators for each site falling under the provisions of SEVESO III (SEVESO site). Such information may be found at the website of the corresponding Region.

BE INFORMED

In the case of an industrial accident where hazardous substances are involved, the competent Authorities, following the relevant recommendation from the head of the Fire Service on site, decide on the safest measure that should be implemented, as the case may be, with the aim of protecting the life and health of the citizens, i.e.:

- *stay in safe indoor areas or*
- *proactive/organised evacuation.*

Note that in order for the head of the Fire Service on site to assess the safest measure between staying indoors or evacuating the citizens in an organised manner, different factors are considered, such as any sampling or metering results, the required time for an organised evacuation in relation to the time/space distribution of the toxic cloud concentration, the potential impact of the chemicals on humans, the vulnerability of the area surrounding the establishment etc.

Therefore, it is important to:

→ *Study, become familiar with and carry out the General Instructions provided below, as well as the Seveso Site-specific self-protection Instructions posted on the website of the corresponding Region, until you receive any Special Instructions during an accident.*

→ *In the event of an accident, follow only the instructions given by the competent Authorities via the mass media and social media.*

Everyone should be familiar with the following General Instructions and especially those living, passing through or frequently spending time in areas where there are:

- *Industrial sites handling dangerous substances (subject or not to the provisions of the Seveso-III Directive).*
- *Transportation axes used for transporting dangerous substances.*
- *Ice skating rinks and large industrial refrigerators.*
- *Water treatment plants where gas chloride is used.*

WHAT TO DO

1)Before an industrial accident

Be prepared

→ *Study, become familiar with and carry out the Seveso Site-specific self-protection Instructions posted on the website of the corresponding Region.*

→ *After reading these instructions, discuss the matter with everyone in your family.*

→ *Gather the following items or make sure it is easy to gather them fast in one room:*

- *Adhesive insulating tape (paper tape), to seal the door and window frame gaps (in case of a toxic cloud).*
- *Scissors.*
- *Plastic sheets (cut-down to size) or plastic garbage bags to cover the openings of the air-conditioning units.*
- *Towels and small cloths.*
- *Flashlight with batteries (the batteries should be stored next to the flashlight, otherwise they should be regularly checked), for the event of a power failure.*
- *First aid kit.*
- *Necessary medicines for anyone in the family.*
- *Other supplies that may be specifically required.*

→ *Select the room of your home that offers maximum protection. Take into consideration that the room should:*

→ *Be at the centre of your home.*

→ *Have the minimum number of windows and doors, which should shut tightly.*

→ *Communicate with the main bathroom or half-bathroom.*

→ *Not have its windows on the danger side (establishment or street).*

→ *Not have any openings for air exchange with the environment (i.e. fireplace, air-conditioning units, ventilation openings etc.).*

→ *Be on the highest floor possible (most toxic gases, as they are heavier than air, move towards the lower air layers).*

→ *Check the preselected room for leaks (if there is any air ingress) on a windy day. Permanently seal the window openings with duct tape, so the room offers a high level of protection.*

→ *Drive cautiously around industrial establishments or vehicles transporting dangerous materials.*

2) During an industrial accident, wherever you are, follow the General Instructions below:

✓ *Remain calm and try to calm those next to you.*

✓ *Stay or immediately move to a safe, enclosed space, and avoid movement on the streets. The aim is to protect yourself from dangerous chemicals that may enter your*

home, from potential explosions (primary and secondary fragments) and from thermal radiation.

- ✓ *Shut any doors (inside and outside) and windows tightly. Shut down any ventilators and air-conditioning units.*
- ✓ *Prepare wet towels to protect yourself in the event of exposure to inhalation irritants.*
- ✓ *Extinguish any flames, turn-off the gas stove and do not smoke.*
- ✓ ***In any event, watch the media and stay connected on social media. Trust only official announcements and only follow the instructions of the competent Authorities.***
- ✓ *In the event of an accident at a SEVESO-site, follow the Specific Self-protection Instructions, posted on the website of the corresponding Region.*
- ✓ *Wait for the competent Authorities to provide information regarding the use of tap water or drink only bottled water.*
- ✓ *Do not go to the scene of the accident.*
- ✓ *Avoid calling the Authorities or friends and relatives on the phone, unless you need immediate assistance. Unnecessary phone use keeps lines busy and prevents use in an emergency.*
- ✓ *Do not expose yourself or others to dangers.*
- ✓ *If you are inside a building away from your home, implement the emergency plan of that building.*

In particular:

I. If you are at home and have the timeΕάν είστε στο σπίτι και έχετε διαθέσιμο χρόνο

- ✓ *Shut tightly any windows, window shutters and curtains, as well as the outside and inside doors of your home, without locking them.*
- ✓ *Do not go near the windows for any reason. There is a risk of injury from broken glass.*
- ✓ *Extinguish any flames, turn off the air-conditioning, whether part of a central system or not, and also turn off the ventilation systems, kitchen extractor, fans and any heating/cooling system.*
- ✓ *If you suspect a leak of flammable gases, turn off the main electrical power and natural gas switches, to prevent a potential explosion.*
- ✓ *Cover the air-conditioning units with plastic garbage bags.*
- ✓ *Do not use gas cylinders.*
- ✓ *Do not smoke.*
- ✓ *Bring your pets inside your home.*

- ✓ *Seal any door and window frame gaps (on all four sides) with adhesive insulating tape (paper tape) or any other available means. In addition or alternatively, you can use wet towels or blankets, plastic sheets, aluminium foil or wax paper (baking paper).*
- ✓ *Cover the keyhole and door handle with paper tape.*
- ✓ *Using paper tape and plastic sheets, tightly seal the fireplace vents, the kitchen fan, all heating systems, air inlets and ventilation systems, and all doors and windows. In addition or alternatively, you can use wet towels or blankets, aluminium foil or wax paper (baking paper).*
- ✓ *Do not use the elevator (it acts as a pump, drawing air to the inside of the building).*
- ✓ *Go to your preselected room.*
- ✓ *If, despite your efforts, dangerous gases enter the building, fold a wet towel or cloth several times over, cover your mouth and nose, and take short breaths in order to filter the air you are inhaling. Alternatively, use the shower.*
- ✓ *Let your neighbours know about the danger.*
- ✓ ***Watch the media and stay connected on social media. Trust only official announcements and only follow the instructions of the competent Authorities.***

Dangers from staying at home

- ✓ *In the event of an industrial accident where toxic gases are released, shutting all doors (inside and outside) achieves a high degree of protection, provided that the chemically polluted air is kept out of the home. Any polluted air entering the home can have very serious consequences on human health. Given that for many chemicals the lethal dose is extremely low, it follows that even brief exposure to a chemical substance can cause irreparable health damage. Therefore, it is extremely important to properly seal off any door and window frame gaps. Moreover, all the above must be done as soon as possible, without letting valuable time go to waste.*
- ✓ *However, as soon as the danger is over, it is just as important to air your home quickly and properly, to clear it of all the air that was polluted with toxic substances.*

II. If you are in your car

- ✓ *Close your windows and keep them shut, turn off the air-conditioning and ventilation system and close any air vents. This way, you get some short-term protection.*
- ✓ *In case you can leave the area, stay inside your car and drive carefully.*
- ✓ *In case you cannot leave the area and there is a safe building nearby, park your car at a spot where it does not obstruct traffic and enter the building. If there is no safe building nearby, remain calm and stay in your car.*

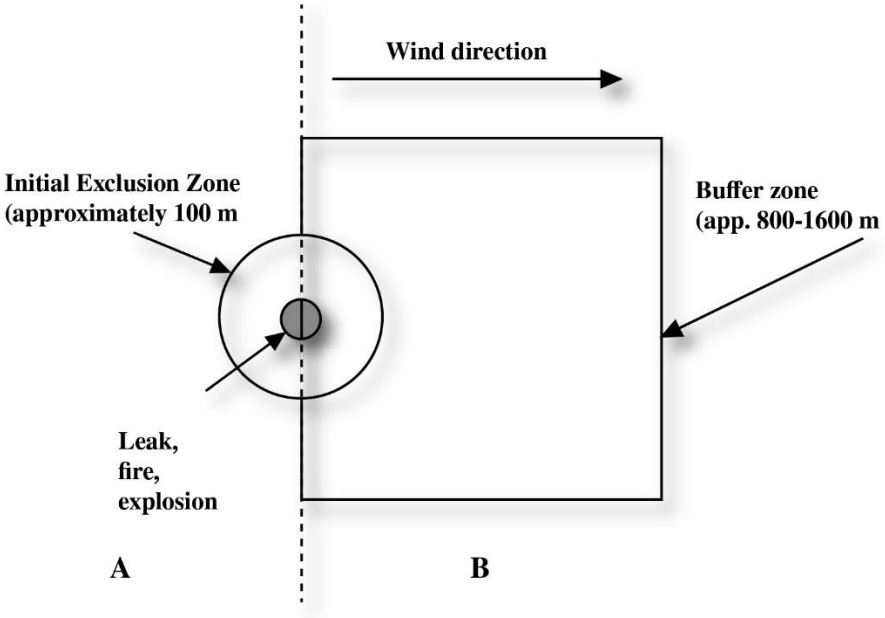
- ✓ ***Watch the media and stay connected on social media. Trust only official announcements and only follow the instructions of the competent Authorities.***

III. If you are away from a safe building and near the accident site

- ✓ *Leave the accident site as soon as possible..*

If you are…

- ✓ *Down-wind of the accident (area B in the following drawing), leave moving vertically to the wind direction or water flow.*
- ✓ *Up-wind of the accident (area A in the following drawing), leave moving against the wind direction or water flow.*
- ✓ *As a general rule, move to higher ground, since many toxic substances are heavier than air.*
- ✓ *Do not walk on and do not unnecessarily touch surfaces where the leaked substance is on.*



- ✓ *Do not smoke.*
- ✓ *Cover up your body as much as possible.*
- ✓ *Filter the air you are breathing from dangerous gasses, dust or droplets, by covering your mouth and nose with a folded towel or cloth or a mask, and taking short breaths.*
- ✓ ***Watch the media and stay connected on social media. Trust only official announcements and only follow the instructions of the competent Authorities.***

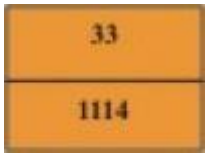
IV. If you see an accident and after moving to a safe distance) Εάν αντιληφθείτε ένα ατύχημα και αφού απομακρυνθείτε σε απόσταση ασφαλείας

- ✓ *Call the Fire Service on **199**.*
- ✓ *Give precise details (location, distance from the accident site, name, contact number, etc.) and describe the incident.*
- ✓ *Note:*
- ✓ *If there are any victims and make an estimate as to the number of people involved (number of fatalities, injuries) and the symptoms they have (e.g. dizziness, headache, eye irritation etc.)*
- ✓ *The colour of the smoke or leaking liquid.*
- ✓ *The smells and strange noises, if there are any.*
- ✓ *The behaviour of the cloud, if there is one (direction of movement, downwards or upwards, etc.) or the behaviour of the liquid.*
- ✓ *If there is any information/markings on the packaging, containers (barrels, cans and pallets) or tanker vehicle (company name etc.) (in the case of an accident involving a tanker vehicle).*

In case of an accident involving a tanker vehicle transporting hazardous substances

Pay special notice:

- ✓ *If there are any orange-color signs (warning signs identifying the shipment materials), note the two numbers (one two/three-digit and one four-digit number), the so-called UN numbers, e.g.*



- → *Do not go off the phone unless told so by the operator – they may require additional information.*
- → *If there are any diamond-shaped hazards labels with colors (red, yellow, blue, etc.), illustrations (bomb explosion, black or white flame, skull and bones, etc.) and numbers on the bottom corner (1.1., 3, 4 etc.). See below examples:*

→ *What is near the accident site (facilities, buildings, schools, day-care centres, senior citizen centre, mass transport stop/station, squares, rivers, lakes, drains, etc.).*

V. If you are exposed to a chemical Εάν εκτεθείτε σε χημική ουσία

✓ *Call for medical assistance immediately.*

National Emergency Centre (EKAV): 166

Poison Control Centre: (+30) 210 7793777

3)After the accident

✓ *Properly air all rooms.*

- *For the next 1-2 days, leave your shoes outside when entering your home.*
- *Clean all the home furnishings and fixtures (doors, windows, rugs, floors), as well as the outdoor areas (balconies, stairs, terraces).*
- *Take daily showers, thoroughly wash your hands, hair and facial hair.*
- *Do not eat local fruits and vegetables. Instead, opt for packaged foods from other areas.*
- *Once the competent Authorities inform you it is safe to eat local fruits and vegetables, do so following their instructions (e.g. wash well before eating).*
- *The competent Authorities, if necessary, will also issue a free-range farming prohibition to animal farmers.*

- *Moreover, the competent Authorities will inform you regarding the suitability of consuming animal and fishing products.*
- *Wait for the competent Authorities to provide information regarding the use of tap water.*
- *Wait for the competent Authorities to provide information regarding the suitability of the local beaches for swimming.*
- *Make sure small children are not putting objects that may have been polluted by toxic substances in their mouths.*
- *Report the presence of vapors or other dangerous substances to your local Fire Service.*

✓ *Only follow the instructions of the competent Authorities.*

✓ *Act quickly if you have come into contact with or have been exposed to dangerous substances.*

✓ *Immediately seek medical assistance if you are experiencing unusual symptoms.*

✓ *In the event you have not left the area you were in, stay there until the competent Authorities instruct you to return to your home.*

✓ *After being informed that the accident has ended and it is safe to return to your home:*

SEVESO site-specific information

SEVESO sites are licensed on a case-by-case basis by the Ministry of Environment & Energy and the Development Directorates of the corresponding Regions [which, according to the provisions of Art. 100 of Law 4605/2019 (Government Gazette Issue 25/A/01-04-2019) are responsible since 01-04-2019 to grant licenses to medical gas and compressed gas production and/or bottling plants, formerly under the competence of the General Secretariat for Industry (Ministry of Development & Investments)]. Sites are divided into upper and lower tier establishments, depending on the amount of hazardous substances they possess.

More specific information for all establishments subject to the provisions of the SEVESO-III Directive (SEVESO sites) is provided by their individual operators to:

→ *the Independent Directorate of Civil Protection of the corresponding Region, following a relevant request of the latter to the competent licensing authority for upper-tier establishments, and*

→ *the local competent Fire Service and/or the Directorate for Natural Disasters Planning of the General Secretariat for Civil Protection, following a relevant request of the latter to the competent licensing authority for lower-tier establishments.*

In the context of this communication, the following are provided:

- *Information regarding the basic safety instructions that citizens should follow in the event of an accident on the establishment.*
- *A description of the nature of risks concerning large-scale accident risks inside the*

12. CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR INCIDENTS

GETTING PREPARED

Actions during a CBRN accident depend on many factors (type, quantity and purity of the CBRN factor, method of dispersion, space, weather conditions etc).

Therefore they are not the same for each case. Nevertheless the general actions recommended are summarized below:

- ✓ *Limit your presence in the dangerous environment and therefore your exposure to the CBRN factor.*
- ✓ *Remove the CBRN factor from your body.*
- ✓ *Move away from the place of the accident and stay in a safe place.*
- ✓ *Follow the instructions given by the competent authorities and collaborate with their staff.*

Listed below you will find the general instructions which should be followed until specific instructions are given by the authorities. You can also take a look at the technological hazards instructions.

If you find yourself in a place where a CBRN factor is released

- ✓ *Stay calm. Do not panic.*
- ✓ *If the accident takes place outdoors, move away on foot without touching anything. Do not get off too far and do not make use of public or private transport (buses, metro, tram, taxi, cars, bicycles etc). Such behavior could result in a broader dispersion of the dangerous factor to the public transport means and the general public. The spread of the problem could make it more difficult for you to get help.*
- ✓ *If the accident takes place indoors, turn off ventilation and heating systems, and the central ones, get out of the building and wait for the authorities.*
- ✓ *Seek shelter in the nearest undamaged building. In case of an outdoor explosion, staying or finding shelter indoors reduces your CBRN exposure.*
- ✓ *Once in a "safe" place, take off your clothes as soon as possible. Take the clothes off carefully in a way that you don't expose more to the CBRN factors the sensitive parts and reception organs of your body (the eyes, nose and mouth). Shower with plenty of water by yourself or, even better, in couples in order to clean the difficult parts of the body (behind the ears, eyes, armpits etc).Put the clothes in a plastic bag that closes tightly.*
- ✓ *If it is not possible to take off as many clothes as possible (and if weather permits), wait for the authorities who will take care of your decontamination.*

Be prepared that:

1) *You or someone else will take off your clothes (by tearing or cutting some of them). You will have to stand naked in front of strangers or people that you are familiar with. This is necessary for your best possible health protection.*
2) *If you wear jewelry or carry with you objects with personal value, be prepared to give them to the decontamination staff.*
    i. *If you have children or babies they will be allowed to be with you during the decontamination procedure.*
    ii. *Cooperate with the authorities' staff tasked with the response to the incident for the best possible outcome (the best condition of your health). Follow the instructions given and don't disagree.*
    iii. *Do not be surprised to see that the decontamination staff wears protective uniforms you don't have. Their protection is necessary to ensure the best possible assistance to you.*
    iv. *Do not forget to report to the authorities anything that you have observed.*

If you have been exposed to a CB factor without being aware of it

- ✓ *It is possible that you have symptoms as if you had the flu or caught a cold, such as fever, cough, stomach or muscle pains etc (i.e. biological factor) or as if you exposed yourself to a toxic chemical substance (e.g. mustard gas, pesticide).*
- ✓ *Follow carefully the competent authorities' information - if there was any- and see if you meet the requirements mentioned in the bulletins. Otherwise inform the authorities.*
- ✓ *Call your personal doctor or the medical services and do not show up in any medical help centre (hospital, private practice) without informing first.*

Competent authorities

- ***ELAS Hellenic Police***
- ***Fire Service***

INFORMATION GUIDELINES OF CIVIL PROTECTION FOR CITIZENS THROUGH 112

The 112 emergency number constitutes a comprehensive emergency communication service, including both an incoming and outgoing component. Regarding the incoming component, you can dial 112 for free in any emergency situation, anywhere in Greece and the EU. As for the outgoing component, you can receive warnings through various technologies and communication channels for a threatening or ongoing catastrophic event or dangerous situation that poses an immediate threat to your life, health, or safety. This is done to provide instructions for self-protection measures.

OUTGOING COMPONENT

Do you have a smartphone?

No registration is required.

If you have a smartphone, you will receive a written warning message (Cell Broadcast - CB) displayed on your phone screen, accompanied by a distinctive alarm sound (different from any other device notification sound). It requires updated firmware from the manufacturer and specific settings on your device.

Don't have a smartphone?

If you don't have a smartphone, you can register below or by calling 112 to receive notifications through one of the following methods:

- *Short Message Service (SMS): Receive a written message if you don't have a smartphone.*
- *Email: Receive an email message that you can read on a mobile phone, tablet, or computer.*
- *Voice Alarms: Receive a phone call on your mobile or landline phone, displaying 112 as the caller. Upon answering, you'll hear a recorded voice message.*

INCOMING COMPONENT

112 - The number to remember in every emergency in Greece and Europe.

The 112 is established by the European Union (EU) as the European emergency number, providing free access to emergency services in all EU countries.

In Greece, 112 operates 24/7 and connects the caller to relevant emergency services based on the reported incident, including:

- *Police,*
- *Fire Department,*
- *Ambulance Service,*
- *Coast Guard,*
- *National Helpline SOS 1056, and*
- *the European Hotline for Missing Children 116000.*

The General Secretariat for Civil Protection is responsible for 112 operations in Greece.

How to call 112 in an emergency:

- *From a landline phone.*
- *From a mobile phone, even without a SIM card.*

The number 112 works within the coverage of any mobile network. If the incident area is not covered by the caller's mobile network, the call to 112 is routed through other mobile networks covering that specific area (national and international roaming service).

Other ways to notify 112:

- *Sending SMS or MMS to 112.*
- *Sending an email to contact@112.gov.gr.*
- *Using the gov.gr application, available for free on iOS and Android mobile phones.*

Who answers calls to 112:

Specially trained operators answer calls to 112 in three languages:

- *Greek,*
- *English, and*
- *French.*

Information needed during an emergency call το 112:

- *When you call 112, as soon as your call is answered, the specially trained operator will ask you questions to determine the nature of the emergency and the location of the incident, and to ascertain the type of assistance you need.*
- *When contacting 112 using one of the alternative methods, include the following details in your message:*
    - *What has happened? What is the emergency?*
    - *Where has it happened? What is the location of the incident?*
    - *Are there any injured individuals?*

Accidentally called 112, what to do:

If you accidentally call 112, do not hang up without speaking. Inform the operator that there is no problem; otherwise, unnecessary assistance may be mobilized, which others may urgently need at that moment.

Remember to call 112 only in emergencies that require immediate assistance.

Location tracking capabilities:

Calling 112 from a mobile phone or sending SMS to 112 provides precise location tracking through Advanced Mobile Location technology. The gov.gr application also allows sending written messages to 112 with the caller's exact location.

In addition, the eCall system, mandatory in all new vehicles in the EU since March 31, 2018, activates a call to 112 in the event of a collision, providing information such as the exact vehicle location.

Countries where 112 operates:

112 operates in all EU member states, either alongside national emergency numbers or as the sole emergency calling number. It is particularly useful for citizens traveling within the EU and facing emergency situations abroad. It also operates in some non-EU countries, such as Switzerland and South Africa.

Appendix II

ORGANIZATIONS – VOLUNTEER TEAMS

ORGANIZATIONS / INSTITUTIONS – VOLUNTEER TEAMS				
Organizations	**Institutions**	**City**	**Email**	**Telephone**
	General Secretariat of Civil Protection		-	**213 1510 100**
Ministries	**Ministry of Climate Crisis and Civil Protection**		info@civilprotection.gr E-mail for volunteers' issues: ethelontismos@civilprotection.gr	
	Ministry of Environment and Energy (MEE)		info@ypen.gov.gr	213 1513000
	Ministry of Infrastructure and Transport (Ministry of Spatial Planning and Public Works - YPECHODE)		yme@yme.gov.gr	210 6508000
	Ministry of Development and Investments		-	210 3332000
	Ministry of Health (and Welfare)		sitecontact@moh.gov.gr	213 2161 000, 213 2161 001

	Ministry of Labor and Social Affairs (under the General Secretariat of Welfare)		_	1555
	Ministry of National Defense		minister@mod.mil.gr	210 659 8100 – 200
			gg_ypetha@mod.mil.gr	210 659 8661-4
			_	2310 893238
	Ministry of Citizen Protection		kepik@astynomia.gr	213 1520000
	Ministry of Shipping and Island Policy		info@yna.gov.gr & ddy.b@yna.gov.gr	213 1371 700 - 213 1374700
			contact@yna.gov.gr (24/7)	213 1371 480 - 213 1371296 -
				213 1371 421 - 213 1371 481
Central Governm	Civil Protection Directorate of **Decentralized**		pol-pro@damt.gov.gr	2313 309609

ent Directorates	**Administration of Macedonia-Thrace (DAMT)**			
	General Directorate of Spatial and Environmental Policy		_	2313 309169
	Directorate of Waters of **Central Macedonia** (of the General Directorate of Spatial and Environmental Policy DAMT)		dy-km@damt.gov.gr	2313 309441
	Directorate of Waters of **Eastern Macedonia - Thrace** (of the General Directorate of Spatial and Environmental Policy DAMT)		dy-amt@damt.gov.gr	2313 309810
	Directorate of Environment and Spatial Planning of **Central Macedonia**		_	2313 309262
	Directorate of Environment and Spatial Planning of **Eastern**		_	25310 27966

	Macedonia and Thrace			
	Directorate of Waters of **Western Macedonia, Decentralized Administration of Epirus - Western Macedonia**		grigoriadouelp@apdhp-dm.gov.gr	24613 50248
			dydaton.dm@apdhp-dm.gov.gr	-3248
	Directorate of Civil Protection, **Decentralized Administration of Epirus - Western Macedonia**			26510 90230
			politikiprostasia@apdhp-dm.gov.gr	26510 90231
Municipalities of Second Degree, relevant bodies, and their directorates	Region of **Central Macedonia**		-	2313 330918
				2313 325449
	Region of **Eastern Macedonia and Thrace**		periferiarxis@pamth.gov.gr	
	Region of **Western Macedonia**		info@pdm.gov.gr	24610 52610 -11 -15
	Autonomous Directorate of Civil Protection of the Region of **Western Macedonia and Thrace**		n.silliris@pdm.gov.gr	24610 52703
			d.pp@pdm.gov.gr	

	Autonomous Directorate of Civil Protection of the Region of **Central Macedonia and Thrace**		ppro in pkm.gov.gr	2313 319884
				-2215
	Autonomous Directorate of Civil Protection of the Region of **Eastern Macedonia and Thrace**		civilprotection@pamth.gov.gr	25313 53910
				25313 53916
				25313 53960
	Union of Greek Regions		info@enpe.gr	213 2144700
Municipalities of First Degree and relevant bodies	Municipality of Thessaloniki	Thessaloniki	info@thessaloniki.gr	2313 317777
	Municipality of Paionia		-	2343 350 100 - 101
	Municipality of Delta		gensec@dimosdelta.gr	2310 797 411 (132),
				2310 796570
	Municipality of Pella	Pella	dimos@giannitsa.gr	2382 350800

				2382 350808
	Municipality of Kilkis	Kilkis	info@dhmoskilkis.gr	23413 52101
	Municipality of Kozani	Kozani	kozani@cityofkozani.gov.gr	24613 50300
	Municipality of Alexandroupoli	Alexandroupoli	info@alexpolis.gr	25510 64100
	Central Union of Greek Municipalities		info@kede.gr	213 2147500
Police directorates	Hellenic Police (ELAS)		kepik@astynomia.gr	213 1520000
	G.A.D. of Thessaloniki	Thessaloniki	gadthe@hellenicpolice.gr	2310 388000
	(General Peripheral Police Directorates)		Website: www.hellenicpolice.gr	
	G.E.P.A.D. of **Eastern Macedonia & Thrace**		gadpanmakthrakis@hellenicpolice.gr	25310 83260, -263
	(General Peripheral Police Directorates)		Website: www.hellenicpolice.gr	
	G.E.P.A.D. of **Central Macedonia**		gadpkmakedonias@hellenicpolice.gr	2310 388620
	(General Peripheral Police Directorates)		Website: www.hellenicpolice.gr	
	G.E.P.A.D. of **Western Macedonia**		gadpdmakedonias@hellenicpolice.gr	24610 49889

	(General Peripheral Police Directorates)		Website: www.hellenicpolice.gr	
Other relevant bodies	Technical Chamber of Greece / Department of **Central Macedonia** (TEE/TKM)		tee_thess@tee.gr	2310 883 100
	Special Disaster Response Unit (EMAK)			
	Hellenic Coast Guard (HCG)		contact@yna.gov.gr	213 137170 0 213 137470 0
	Fire Brigade (FB)		pdamthr@psnet.gr pdkenmak@psnet.gr pddmakth@psnet.gr	213 215750 0
	Regional Fire Brigade Directorate **of Central Macedonia**			2313 326 101, -105
	Regional Fire Brigade Directorate **of Eastern Macedonia and Thrace**			25313 55101
	Open Protection Center for the Elderly			2310 519584

	National Emergency Aid Center (EKANational Emergency Aid Center (EKAV)		ekab@ekab.gr	213 2143000
	Hellenic National Defense General Staff (HNDGS)		hndgset@gmail.com , hndgs_central_secretariat@mil.gr	210 6571044, 210 6555911
	Volunteer Organization: Humanity Greece		info@humanitygreece.org	210 5226379
	NGO: Hellenic Red Cross		secretary_general@redcross.gr	210 3613563
	Unified Coordination Center for Crisis Management and Operations		eskedik.unit3@psnet.gr	213 2047744, -745, -746, -747
Unified Coordination Center for Crisis Management and Operations	Hellenic Police			100
	Narcotics Prosecution Services **of Attica, Thessaloniki, and Patras**			109
	Missing Minors Unit			1156
	Cybercrime Directorate			11188
	Solving problems of Greek and foreign tourists			1571

	(Greek, English, German language)			
	Counterterrorism Division (CTD)			10414 1014 170 1964
	Police services in **Attica, Thessaloniki, Serres, Pieria, and Pella.**			1033
Healthcare Providers: Hospitals and Primary Health Care Units (Health Centers, Primary Health Care Units [P.H.C.U.], Mental Health Centers)	G.N. G. PAPANIKOLAOU Thessaloniki Outskirts	Thessaloniki	info.gpapanikolaou@n3.syzefxis.gov.gr	2313 307000
	G.N. "G. GENNIMATAS - AGIOS DIMITRIOS" N. GENNIMATAS Hospital	Thessaloniki	info@gennimatas-thess.gr	2313 308100
	G.N. KATERINI	Katerini	hoskat@otenet.gr	23513 50200
	G.N. IMATHIA N. VERIA	Veria	info1@verhospi.gr	23313 51100
	G.N. PAPAGEORGIOU Peripheral Road Thessaloniki-New Efkarpia	Thessaloniki	hospital.papageorgiou@gmail.com	2313 323000

	K.Y. THESSALONIKI	Thessaloniki	kythess@3ype.gr	2310 283042
	(Central Macedonia Region)			2310 283972
	K.Y. KATERINI	Katerini	kykaterinis@3ype.gr	23510 35911
	(Central Macedonia Region)			23510 76949
				23510 77156
				23510 74825
				23510 22541
				23510 75542
				23510 77223
	K.Y. VERIA	Veria	kyveroias@3ype.gr	23310 27624
	(Central Macedonia Region)			23310 71954
	K.Y. KOZANI	Kozani	kykozanis@3ype.gr	24610 60060
	(Western Macedonia Region)		kskoz@3ype.gr	24610 60064
			yperkoz@3ype.gr	24610 60083
				24610 60063
				24610 60084

	K.Y. GREVENA	Grevena	kygrev@3ype.gr	24623 50154
	(Western Macedonia Region)		ksgrev@3ype.gr	24623 50150
				24623 50157
				24623 50151
				24623 50264
	1st Primary Health Care Unit of Nikopolis	Thessaloniki	tomynikgram@3ype.gr	2310 005052
	(Nikopolis area, Municipality of Pavlos Melas)			
	2nd Primary Health Care Unit of Ampelokipi	Thessaloniki	tomyampgram@3ype.gr	2310 005950
	(Agias Paraskevis 10, Menemeni)			
	Psychiatric Health Center of Thessaloniki General Hospital, P.N.TH.	Thessaloniki		2313 310700
	Psychiatric Health Center of Katerini Hospital	Katerini		23513 50700
	Psychiatric Health Center			

	of Petra Olympou			
	G.N.TH. "HIPPOKRATIO"	Thessaloniki	manager@ippokratio.gr	2313 312 000
	(Macedonia and Thrace Region)			
	P.G.N.TH. AHEPA	Thessaloniki	ahepahos@n3.syzefxis.gov.gr	2313 303 110
	(Macedonia and Thrace Region)			2313 303 111
				2313 303 310
	G.N. HALKIDIKI	Poligyros	gnx@1157.syzefxis.gov.gr	23713 50100
	(Macedonia and Thrace Region)			
	G.N. KILKIS	Kilkis	info@ghkilkis.gr	23413 51400
	(Macedonia and Thrace Region)			
	G.N. SERRES	Serres	gnserres@hospser.gr	23210 94500
	(Macedonia and Thrace Region)			23213 51500
	G.N. DRAMA	Drama	grammateia.ceo@dramahospital.gr	25213 50400
	(Macedonia and Thrace Region)			25210 23351
	G.N. KAVALA	Kavala	Communication Form	

	(Macedonia and Thrace Region)			25135 01100
	G.N. XANTHI	Xanthi	contact_us@hosp-xanthi.gr	25413 51100
	(Macedonia and Thrace Region)			
	G.N. KOMOTINI	Komotini	info@komotini-hospital.gr	25313 51100
	(Macedonia and Thrace Region)			
	P.G.N. ALEXANDROUPOLI	Alexandroupoli	infopgna@pgna.gr	25513 51000
	(Macedonia and Thrace Region)			25513 52000
				25513 53000
	G.N. DIDYMOTICHO	Didymoticho	did-hosp@otenet.gr	25533 50168
	(Macedonia and Thrace Region)			25533 50199
Volunteer Teams	Hellenic Search and Rescue Association of Thessaloniki	Thessaloniki	eeedthessaloniki@gmail.com	
	"EDOMAK" (Volunteer Search and Rescue Team for Disaster Response)	Thessaloniki	edomakgramatia@gmail.com	
	Hellenic Volunteer Firefighters	Thessaloniki		2310 543880

	Forest Brigade (HVF)			
	Hellenic Rescue Team	Thessaloniki		2310 310649
	Volunteer Team of Filirou	Thessaloniki	eofdx@yahoo.gr, nakos.dimitrios@nbg.gr\n	2310 677583
	Thessaloniki Aero Club	Thessaloniki	info@aeroclub-tsl.gr	23940 41847
	Hunting Association of Epanomi and Surroundings	Thessaloniki	huntingclubepanomi@yahoo.com	2392 042450
	HERVE - Union of Radio Amateurs of Northern Greece	Thessaloniki		2310 901000
	Elite Team of Special Missions of the Municipality of Thessaloniki	Thessaloniki	epomea@gmail.com	2310 317405
	Hellenic Rescuers	Thessaloniki	info@rescuegr.gr	2310 216999
	LEFED - Club of Reserve Armed Forces	Thessaloniki	info@lefed.gr	2310 517028
	Volunteer Team for Prevention & Disaster Response	Thessaloniki	ethopakgr@gmail.com	2392 02312
	Protect Myself And Others - Volunteers of Kalamaria	Thessaloniki	prigkifili.r@inedivim.gr	2131 314633
	Friends Club of Coastal Hunters of Thermaikos	Thessaloniki	ofkathermaikou@yahoo.gr	2392 039443

	Bay (OFKATH)			
	Volunteer Team of Civil Protection for Disaster Response of the Municipality of Epanomi (ETHOPPAKE)	Thessaloniki	info@ethoppake.gr	2392 044663
	Crisis Management Team (ODIK)	Thessaloniki	public.relations.odik@gmail.com	2314 009585
	SEDIP-Association of Volunteer Firefighters Rescuers of Kavala	Thessaloniki	billdedidis@gmail.com	2391 054700
	MACEDONIA - Association for the Protection of Greenery and Forests of Thessaloniki and Surrounding Areas	Thessaloniki	makedonia-hellas@hotmail.com	
	Volunteers of Civil Protection of Mikra, Municipality of Thermi	Thessaloniki	ethelontesmikras@gmail.com	2392 066176
	Northern Greece Raiders Association	Thessaloniki	syllogoskatadromeon@gmail.com	
	Volunteers of Civil Protection of Panorama (EPPA)	Thessaloniki	volcivpro@yahoo.gr	

	PRO.T.E.K.T.A. of Stavroupoli	Thessaloniki	g.v.makavos@gmail.com	
	Rescue Team of Agios Pavlos	Thessaloniki		
	Volunteers of Civil Protection of the Municipality of Thermi	Thessaloniki	ppthermis@gmail.com	2310 463030
	Disaster Response Team Volunteers of Kalamaria (OMAK)	Thessaloniki	omak.kalamaria@gmail.com	2310 440953
	Disaster Response Team Volunteers of Oreokastro (OMAK)	Thessaloniki	omak.oraiokastrou@gmail.com	
	Hellenic Urban Search and Rescue Team USAR HELLAS	Thessaloniki	info@usar.gr	
	Elite Team of Special Missions - EPOMEA - Municipality of Pylaia - Chortiatis	Thessaloniki	info@elite.org.gr	
	Elite Team of Special Missions of Greece (EPOMEA)	Thessaloniki	info@epomea.gr	

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Interreg - IPA CBC

EUROPEAN UNION

Greece - Republic of North Macedonia

FLOOD SHIELD

Αποκεντρωμένη Διοίκηση Μακεδονίας Θράκης

MINISTRY OF ENVIRONMENT & ENERGY

Republic of North Macedonia
Ministry of Environment and Physical Planning

Влада на Република Северна Македонија
Government of the Republic of North Macedonia
ДИРЕКЦИЈА ЗА ЗАШТИТА И СПАСУВАЊЕ
PROTECTION AND RESCUE DIRECTORATE

INTERREG IPA Cross Border Cooperation Programme "Greece - Republic of North Macedonia 2014-2020"

The project FLOOD SHIELD aims to minimize the cross-border flood risks and disasters by strengthening the cross-border cooperation, organizationally, technologically, and socially.

FLOOD SHIELD implementation will result in more effective joint actions and coordination activities against floods, in terms of:

- *Management: Establishment of a Joint management group in the field of flood risks, definition of the procedures needed to overcome the barriers in the cross-border cooperation and elaboration of a cross border flood reaction strategy.*
- *Response: staff training of the authorities, services volunteer groups participating in the interventions during floods, mapping of flood risks and vulnerable sites, identification, and accessibility modeling of means and equipment in the neighboring areas and operation of an Incident Management and Collaboration Platform for local Civil protection and other stakeholders to train, prepare and respond in case of flooding.*
- *Prevention: Introduction of an early warning system and implementation of awareness raising and information activities for citizen to protect themselves from flood hazards*
- *Mitigation: Measures for mitigation of flood risks will be included in the flood reaction strategy*

In addition to the main objective, the project combines different aspects to achieve the following sub-objectives:

- *1.Strengthening the flood risk governance at the Cross-border area to better assess, plan, monitor, prevent & react against floods.*
- *2.Improving the technical capacity for effective cross-border flood risk assessment, monitoring, preparedness & response.*
- *3.Promoting the role of citizens and voluntarism groups in the civil protection actions in case of flood disasters to protect themselves and actively involved in prevention and reaction activities.*

The Project is co-funded by the European Union and national funds of the participating countries.