

HELLENIC REPUBLIC
MINISTRY OF ENVIRONMENT AND ENERGY
GENERAL SECRETARIAT FOR NATURAL
ENVIRONMENT AND WATER



D.3.6.3 Preparation of a detailed study on:

- 1) Preparation of a roadmap for the coordination of actions in each of the stages of the Flood Risk Management Plan (FRM) in Greece with the cooperation of the Bulgarian partners,**
- 2) Development of a roadmap exploring additional funding for the financial viability of the experts and of the Joint Working Group,**
- 3) Detailed study on the definition of the role of the Joint Working Group (Elaboration of a detailed study on).**

NOVEMBER 2023



The Project is co-funded by the European Regional Development Fund (ERDF) and by national funds of the countries participating in the Interreg V-A "Greece-Bulgaria 2014-2020" Cooperation Program



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ABBREVIATIONS

Acronyms	Definitions
CBC	Cross Border Cooperation
GR	Greece
IPA	Instrument for Pre-Accession Assistance
MIS	Monitoring Information System
MIS	Monitoring Information System
ΥΠΕΝ _ ΜΕΕ	Υπουργείο Περιβάλλοντος και Ενέργειας - Ministry of Environment and Energy
PA	Partnership Agreement
PB /PBs	Project Beneficiary /Project Beneficiaries
JPMT	Joint Project Management Team
ETC	European Territorial Cooperation.
ESIF	European Structural and Investment Funds
..EU	European Union
FLC	First Level Control
JWG	Joint Working Group
AA	Audit Authority
CP GR-BG 2014-2020	Cooperation Programme INTERREG V-A Greece-Bulgaria 2014-2020
RNM	Republic of North Macedonia
FRMs	Flood Risk Management Plans

1 Introduction

1.1 GENERAL DETAILS OF THE PROJECT

The FLOODGUARD project is implemented within the framework of the Partnership Program

"Interreg V - A Greece - Bulgaria" 2014-2020. The legal framework of the project is the following:

- REGULATION (EU) no. 1303/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013, establishing common provisions for the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and for the repeal of Regulation (EC) no. 1083/2000 of the Council.
- REGULATION (EU) no. 1301/2013 OF THE EUROPEAN PARLIAMENT OF THE COUNCIL of 17 December 2013 on the European Regional Development Fund and on special provisions aimed at Investments for growth and employment and repealing Regulation (EC) no. 1080/2006.
- REGULATION (EU) no. 1299/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013, on specific provisions for the support by the European Regional Development Fund of European territorial cooperation objectives.
- COMMISSION DELEGATED REGULATION 481/2014 of 4 March 2014 supplementing Regulation (EU) no. 1299/2013 of the European Parliament and of the Council on specific rules for the eligibility of expenditure for cooperation programmes.
- COMMISSION DELEGATED REGULATION 2019/693 of 7 February 2019 amending Delegated Regulation (EU) No 1299/2013 of the European Parliament and of the Council, on specific rules for the eligibility of expenditure for cooperation programs (CP), to amend the delegated regulation (EU) no. 481/2014 to supplement the regulation (EU).

- Regulation for the establishment of the Greek Management and Control System.
- Approval decision EC (2015) 6283 / 9-9-2015 of the CP and the last approved version of the Cooperation Program.

The main documents of the Project include the following documents and their amendments during the project implementation process:

- The Applicant Package as applicable
- The decisions of the Monitoring Committee through the 20th written process completed on 10/07/2019 and the 22nd written process completed on 10/12/2018, and the approved Application Form.
- The partnership agreement between the PBs
- Subsidy contract no. B4.5b.01 signed on April 1, 2019.
- Application form and its annexes, including budget justification.
- Project start-up and procurement plan.
- Rules of operation of JPMT
- JWG Operating Rules.

Project documents also include operational documents such as contact lists, notes and meeting minutes, which are developed, exchanged and agreed between partners during JWG meetings. Most of these documents are uploaded to MIS.

More guidance documents are available on the Program website. All project beneficiaries are responsible for regularly checking the content of the official website of the Program in order to comply with the latest requirements and editions of the program documents.

1.2 Details of Assignment of the Project.

Contract number 23 SYMV013770237 2023-11-15, concerns the conclusion of a contract for the implementation of Deliverables D.3.6.2, D.3.6.3 and D.3.6.4 of Work Package 3 (WP3) of the project.

This deliverable belongs to work package 3 (WP3) of the project "Integrated actions for joint coordination and responsiveness to flood risks in the Cross Border area", with acronym FLOODGUARD, which is implemented within the Operational Program "European Territorial Cooperation INTERREG V-A GREECE – BULGARIA 2014- 2020".CPV: 90713000 Consulting services on environmental issues.

D.3.6.3 Preparation of a detailed study on:

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- 2) Development of a roadmap exploring additional funding for the financial viability of the experts and of the Joint Working Group,
- 3) Detailed study on the definition of the role of the Joint Working Group (Elaboration of a detailed study on).• Proposal for a possible extension of the role of the Joint Working Group after the end of the project.

The project team of this study is:

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- Giorgos Psathas, Geologist.
- Artemis Margaritidou, Spatial Engineer MSc.

1.3 Object of the Contractor.

This report examines the flood risk policies of Bulgaria and Greece.

Firstly, the stages of flood risk management planning in Greece and Bulgaria were examined and useful data and expertise were identified. The countries' stakeholders at national, local and transboundary level were analysed.

The importance of the JWG was then analysed and the possibility of funding the group to make it economically viable was explored. The role of the group was explored and confirmed through the minutes of the meetings.

Finally, the contribution of the JWG at both international and national levels was assessed, and the significance of the results and the need for the JWG to continue were evaluated.

From the analysis of the Greek and Bulgarian legislation on flood risk issues, the specificities of each country's legal framework were analysed. It was also found that both countries have policies that are harmonised with the European Directive. Supporting the interoperability of national systems can improve the response to natural disasters and increase their effectiveness.

A comparative assessment of flood risk measures in the cross-border area was also carried out. The conclusions highlight the importance of continued and effective cooperation between the two countries in flood risk management.

Support for the interoperability of national systems and better coordination in the prevention, control and improved response to natural disasters will increase effectiveness.

The role of the JWG in improving the exchange of data and expertise between the two countries was evaluated. It also explored ways to improve the exchange of information for the development of joint flood risk management plans. The JWG was established for the integrated management of flood events in the cross-border area between Greece and Bulgaria.

The role of the group was reviewed through the minutes of each meeting within FLOODGUARD. The JWG team has achieved high goals. A very important result is the direct exchange of data, information and expertise. This has already contributed to a better assessment of the flood risk than in the past, the exchange of know-how and flood management practices, etc.

Consideration has been given to how to keep members informed, update them regularly and improve the results of the JWG. Some of the key issues are: improving the scientific nature of the group, achieving greater flexibility in

meetings, more timely information and preparation of the group before meetings, reducing face-to-face meetings to reduce the operational costs of the group.

The results of the JWG are very important for flood risk management in the cross-border area. The need to continue the JWG and how it could work in the future was identified. In order to support Floodguard and the JWG, possible sources of funding were considered to make the group sustainable and to continue its work after the end of the project. A stakeholder analysis was carried out for Greece and Bulgaria and how they could work in a consultation. The need for consultation processes in a climate of co-determination between different stakeholders, based on national and international legislation and on the principles of water management at the basin level was highlighted.

The final chapter summarises the results of this report and draws important conclusions. Some of these are that the JWG contributes to strengthening and protecting both countries at all levels, the results of the group can be used for planning prevention and rehabilitation. At the operational level, the two countries can be significantly strengthened.

2 Preparation of a road map for the coordination of actions in each of the stages of the Flood Risk Management Plan (FRM) in Greece and cooperation with the Bulgarian partners.

2.1 Object of Flood Risk Management Plans (FRMs).

According to 31822/1542/E103/2010 (Government Gazette 1108 B'/2010) as amended and in force with Government Decree 177772/924/2017 (Government Gazette 2140 B/2017), the "New Architecture of Self-Government and Decentralized Administration - Kallikratis Program" (law 3852/2010) and law 3199/2003 (Government Gazette 280 A'/2003) as amended and in force, inter alia, by article 29 of law 4519/2018 (Government Gazette 25 A'/2018), the competent authorities for flood risk assessment and management, are as follows:

a. At the national level, the competent authorities are: the National Water Commission, the National Water Council and the Special Water Secretariat. The Special Secretariat for Water has the responsibility of drawing up the programs for the protection and management of the country's water resources and the coordination of services and state bodies for every issue related to the protection and management of water, including the risk of floods.

β. At regional level the competent authorities are: the Water Council of Decentralized Administration and the Water Directorates of Decentralized Administration. The Water Directorates of the Decentralized Administrations carry out the Preliminary Flood Risk Assessment, draw up the Flood Risk Maps, the Maps of the very dangerous Floods, and Flood Risk Management Plans.

In the first cycle of implementation of the Directive, the Preliminary Flood Risk Assessment, Flood Risk Maps, Flood Risk Maps and Flood Management Plans for all Water Divisions of the Country are drawn up at the request of the Coordinators of the Decentralized Administrations by the Special Water Secretariat, in accordance with article 3(2.2) of the US Civil Code. 31822/1542/E103/2010, as amended and valid.

Flood Risk Management Plans based on Hazard Maps and Flood Risk Maps were drawn up in each Water District and for the Potentially High Flood Risk Zones. One (1) FRM was drawn up per FD and a separate FRM for the Greek part of the Evros River Basin, in accordance with article 7 of Directive 2007/60/EC and articles 6 and 7 to 11 of the 31822/1542/E103/21.7.2010 with the main objective of reducing the potential negative consequences of floods on human health, the environment, cultural heritage and economic activity.

The FRMs include:

- a) the main objectives for flood risk management with an emphasis on j) reducing the potential negative consequences that floods have on human health, the environment, cultural heritage and economic activity, and ii) where appropriate, on initiatives not related to construction projects and actions to manage flood risks and/or to reduce the likelihood of flooding.
- b) the necessary measures and priorities to achieve the above objectives.
- c) the findings of the Preliminary Flood Risk Assessment with the Potentially High Flood Risk Zones and the Flood Risk Maps and the Maps of dangerous Floods.

FRMs take into account relevant parameters, such as costs and benefits, extent and drainage routes of the flood, zones with potential for flood containment (such as natural floodplains), the environmental objectives of article 4 of the P.D. 51/2007, soil and water management, in accordance with Law 3199/2003 as amended and in force, spatial planning and land uses, and in particular, the Regional Frameworks for Spatial Planning and Sustainable Development drawn up based on Law 2742/1999, the needs of protection and conservation of nature and especially of protected areas and the safeguarding of navigation and port infrastructures.

FRMs take into account the characteristics of the specific catchment or sub-catchment and cover all aspects of management, including flood forecasting and early warning systems, with an emphasis on prevention, protection, preparedness and restoration.

(SOURCE:https://floods.ypeka.gr/index.php?option=com_content&view=article&id=11&Itemid=504)

2.2 Identification and prioritization of the main objectives for the implementation of the Flood Management Plans.

To reduce the risk of flooding, four general objectives (FRMs 2016-2021) have been set for the water departments of the country and they concern:

- Mitigation actions for flood risk.
- Actions to reduce the possibility of flooding.
- Strengthening preparedness at the operational level to deal with flood phenomena.
- Strengthening the mechanisms related to the rehabilitation of the affected areas.

The main axes concerning the actions for the management and restoration of flood risks concern: prevention, protection, preparedness and restoration for dealing with flood risks.

For the river Evros, which belongs to the water department EL12, a special Flood Risk Management Plan has been prepared and drawn up, where more specific objectives are defined, which result from:

- The experience that exists in the area from previous flood events.
- The geospatial analysis of the area and the creation of Flood risk and vulnerability maps.
- The requirements of Directive 2007/60/EC.
- The prioritization for the implementation of measures.

The main objectives for the Management of the 2016-2021 FRMs for the Evros river basin are:

- Actions and projects for the prevention of floods concerning the frequency T=100 and T=1000 years. With the implementation of technical projects concerning the restoration, strengthening and expansion of the embankments and other technical auxiliary works.
- Actions to protect against floods with frequency of occurrence T=20 and T=50 years. With the implementation of technical projects, concerning secondary flood protection projects (summer or overflow embankments, etc.)

- The prevention, protection and increased preparedness for flood events involving man-made causes (such as technical failures in dams, etc.)
- Flood protection for events due to sea level rise, due to astronomical tides, meteorological flooding and waves. So far, no similar flood event has been recorded in the area, so there is no relevant experience.
- Organization and improvement of information related to flood protection technical infrastructures and uncertainties regarding flood risk assessment.

(SOURCE: Evros River Basin FRMs)

2.3 Localization of the most useful data and know-how for Greece - Cross-border Cooperation

The definition of the measures of the Evros LAP Flood Risk Management Plan was based, inter alia, on the information contained in the flood risk maps for the hydraulic characteristics of floods and the flood risk maps for the assessment of the potential consequences of floods on the population, economic activities and infrastructure, environment, and cultural heritage.

The categorisation of the proposed measures is based on the requirements of Directive 2007/60 and the provisions of its guidelines. The Programme of Measures includes measures covering all four aspects of flood risk management: prevention, protection, preparedness, and rehabilitation.

- The following types of Measures belong to the Prevention category:
 - i. Measures to avoid exposure to flood risk of new or additional risk takers (people and facilities)
 - ii. Measures to assist the relocation of activities outside flood risk zones.
 - iii. Measures to adjust the acceptable flood risk to reduce the negative effects of a flood.
 - iv. Other Preventive Measures
- The following types of Measures belong to the category of Protection:
 - i. Measures to regulate water flow (storage, timing changes)

ii. Intervention measures in the hydrographic network, in waterways and in the flood field

iii. Surface water management measures (in the sense of increasing permeability or other measures to reduce the generation of surface runoff)

iv. Other Protection Measures

- The following types of Measures belong to the Preparedness category:

i. Flood forecasting and early warning measures.

ii. Emergency planning measures.

- Finally, the following types of Measures belong in the category of Restoration:

i. Individual and social recovery measures from the effects of floods on people, property and infrastructure.

ii. Other Remedial Measures.

In addition, for better monitoring, the Measures are grouped according to their content (Measure type). The groups of related measures are summarized below.

I. 1st Group: Adding, supplementing, and improving information on flood protection infrastructure. They concern the collection of field data, mainly topographical impressions of infrastructures and elements of the geometry of watercourses.

II. 2nd Group: Technical flood protection measures. They concern structural flood protection projects and studies for their implementation.

III. 3rd Group: Administrative arrangements. They concern decisions of administrative arrangements.

IV. 4th Group: Non-structural interventions. They relate to regulatory provisions (eg land use control, zoning, financial tools) and non-structural projects (such as early warning systems).

V. 5th Group: Measures of an economic nature. They relate to measures and interventions to better determine flood damage as well as financial tools to manage flood impacts.

VI. 6th Group: Environmental measures. They concern measures and interventions for the protection of environmentally sensitive areas.

For each Measure, in addition to its description, the following data are given in tabular form:

- i. The Objective served by the Measure.
- ii. The Risk management aspect/axis to which the Measure corresponds.
- iii. The kind of Measure as above.
- iv. The estimated cost of implementing the Measure (with data for the cost analysis)
- v. The geographical area of application and the geographical area of effect of the Measure.
- vi. The priority of implementation of the measures (Short-term, Medium-term, Long-term)
- vii. The implementers of the Measure
- viii. The correlation of the Measure with Climate Change
- ix. The correlation of the Measure with the objectives and Measures of the SDLAP of the Ministry of Health EL12.
- x. The stage of implementation of the Measure.
- xi. The nature of the Measure (Individual intervention or Bundle of interventions in case the measure includes different types of individual actions for its implementation or concerns different types of infrastructures).

It is noted that the main financing programs used for the implementation of the Program of Measures are the following:

1. The Operational Program Infrastructure, Transport, Environment, and Sustainable Development (Environment Sector) (Programming Period 2014-2020) which includes actions co-financed by the European Regional Development Fund and the Cohesion Fund.
2. The Regional Operational Programs for the period 2014-2020 which also include actions financed by the European Regional Development Fund.
3. The Rural Development Program of the country for the period 2014-2020 for the projects and actions of the programs of measures related to agricultural activities.
4. Territorial Cooperation Programs for measures - actions that are part of their priorities.

5. The European Economic Area – EEA.
6. The Own Resources of the Competent Bodies.

According to the provisions of the existing institutional framework, the monitoring of the implementation of the FRMs of the LAP Evros and the Program of Measures takes place on 2 levels.

1. At the national level by the Special Water Secretariat of the Ministry of the Interior. The EGY coordinates and monitors the implementation of the Measures implemented by Ministries and/or agencies subordinate to them. These Measures concern either general arrangements and actions implemented at country level, or actions aimed at solving local problems but implemented by the central administration and financed by Sectoral Operational Programs or Ministry resources.

2. At the regional level by the Water Directorate of Eastern Macedonia & Thrace of the Decentralized Administration of Macedonia - Thrace, which monitors and coordinates the implementation of the Measures implemented by services of the Decentralized Administration, the OTAs of the first degree and the Region of Eastern Macedonia and Thrace, the agencies that fall under them, as well as the Measures implemented by other agencies/organizations operating at the local/regional level. These Measures relate to actions/projects implemented at regional level and financed by Regional Operational Programs, OTA resources and/or resources of the entities that implement them.

However, in addition to the actions that have been codified in the Program of Measures, there are actions that are currently in progress and were taken into account during the preparation of the FRMs of the LAP Evros and of course with the publication of the Risk Maps and the Flood Risk Maps their implementation is facilitated. Such main actions are:

1. Related to Spatial and Urban Planning. Already, before the preparation of the FRMs, the flood risk parameter was taken into account in the spatial and urban planning studies and in the corresponding plans. Now the specific and systematic information and directions of the FRMs will be taken into account with other parameters in order to propose measures according to the general and specific conditions of each region. In this way, Spatial and Urban Planning, which define land uses and urban development conditions, will contribute decisively to the achievement of the goal.

"Mitigation of Flood Exposure" in the "Prevention" axis of the FRMs, as a priority in flooded zones for Floods T=100 years.

It is particularly noted that the New Building Regulation (NOK) imposes a reduction in the percentage of coverage with an increase in the unstructured surface and in conjunction with the Building Regulation they move in the direction of reducing surface runoff through natural water retention measures. The systematic implementation of these measures will contribute to the Goal, "Reducing the Probability of Flooding" located in the Protection Axis.

2. Applied to deal with disasters (General Civil Protection Plan "Xenokratis")
3. Pertaining to the cleaning and maintenance of watercourses
4. Concerning the demarcation of watercourses
5. To define the coastline and the beach
6. For the assessment of damages and compensations from floods
7. To insure agricultural production against flood damage.

2.4 Bulgaria's FRMs – Cross-border Cooperation.

According to Bulgaria's Flood Risk Management Plan (2016-2021), actions and appropriate measures were taken as follows:

1. PRE10-REAC11. Controlled temporary flooding of agricultural land to remove excess of water.
2. PRE11-REAC12. Introduction and implementation of requirements for good agriculture and good ecological situation of the rural areas.
3. PRE15-PREP1-RR6- REAC16. Construction of early warning systems, aimed at sudden floods due to intense rainfall with a small spatial and temporal extent.
4. PRE16-REAC17. Cleaning of sections of rivers and ravines for the passage of a wave of high flow of water.
5. PRE17-REAC18. Regulating the groundwater level to a dangerous rise or fall.
6. PRE19-REAC20. Continuous monitoring of development near flooded areas.

7. PRE1-RR1-REAC1. Afforestation of banks and floodplains with suitable tree species.
8. PRE20-REAC21. Issuance of a building ban in areas at risk of floods.
9. PRE24-REAC25. Removal of illegal constructions, incitement facilities, fences, stocks and other materials located within the boundaries of riverbeds or ravines.
10. PRE25-REAC26. Purchase of private land located in high flood risk areas.
11. PRE27-REAC28. Cleaning and management of riverbeds within the boundaries of an urbanized area.
12. PRE28-REAC29. Legislative initiatives to prevent construction in flooded areas.
13. PRE2-RR2-REAC2. Afforestation and bare area management in the catchment of a dam and/or surface water catchment. Construction of a protected forest zone.
14. PRE30-REAC31. Prohibition of cutting trees in watersheds, resulting in artificial regeneration, except for acacias and poplars.
15. PRE31-PREP2-RR7- REAC39. Effective water level management of dams and holding tanks. Flood prevention by crowning embankments during torrential rainfall in relatively small watersheds.
16. PRE32-REAC47. Monitoring, maintenance, flood protection and management improvement of ponds, tailings, sludge dumps, slag dumps and other similar facilities.
17. PRE33-REAC48. Closure and recovery of old and no longer usable industrial zones or individual enterprises.
18. PRE34-REAC49. Cleanup and remediation of contaminated land from mining activities.
19. PRE35-PREP5-RR8- REAC52. Update regulations for the maintenance and operation of small dams to accommodate periodic, high-water inflows caused by flash floods.
20. PRE36-PRO20-PREP15- REAC62. Creation, Construction, Maintenance and Optimization of the monitoring and forecasting system of rainfall and behavior of the river basin in the entire range, including dam operation.
21. PRE37-PREP16-REAC63. Improving the existing hydrological information system to receive real-time data for the entire pool.
22. PRE45-PRO29-REAC116. Construction of new dams.

23. PRE46-PRO30-REAC117. Reconstruction of dams
24. PRE47-PRO31-REAC118. Maintaining and improving the condition of the existing dams.
25. PRE49-PRO34-REAC121. Creating new antiflood patches.
26. PRE50-PRO35-REAC123. Rebuild and fix maintenance.
27. PRE53-PRO38-REAC126. Earth dam construction and combination
28. PRE56-PRO41-REAC129. Expansion of "bottlenecks" such as bridges, etc., to create a buffer for explosions from overflowing the river.
29. PRE57-PRO42-REAC130. Rehabilitation of worn embankments.
30. PRE58-PRO43-REAC131. Levee Upgrade.
31. PRE59-PRO44-REAC132. Construction of dams with sandbags.
32. PRE5-PRO2-REAC6. Creation of managed artificial dams (polders), and small storage basins, on river floodplains.
33. PRE63-PRO48-RR26-REAC135. Pumping from cast low parts.
34. PRE65-PRO50-REAC137. Construction of technical installations to combat watershed erosion - thresholds, barrages, etc.
35. PRE66-PRO51-PREP59- REAC138. Design and construction of protective and regulatory high water and sediment retention facilities, to be located outside or in residential areas.
36. PRE69-PRO54-REAC141. Provision of retaining bars.
37. PRE72-PRO57-REAC144. Bottom stabilization. Reduction of bottom erosion caused by river ballast mining.
38. PRE73-REAC148. Update on the rules for the size of the sewer network.
39. PREP12-REAC59. Completion and modernization of the network for meteorological and hydrometric monitoring.
40. PREP13-REAC60. Creation of a mechanism to coordinate actions in case of flood risk, including in the transboundary area.
41. PREP20-REAC66. Developing the capacity of competent authorities (RIOSV or DB).

42. PREP21-REAC68. Annual technical and operational survey of the state of potentially flood-prone areas.
43. PREP39-REAC86. Implementation of an education and awareness campaign for problems related to flooding.
44. PREP46-REAC94. Exchange of knowledge and experiences.
45. PREP48-REAC96. Ensuring audience readiness to respond to flood threat.
46. PREP56-RR22-REAC113. Building and infrastructure damage assessment.
47. PREP57-RR23-REAC114. Assessment of viability and suitability for use, buildings and infrastructure affected by floods.
48. PREP8-REAC55. Coordination and cooperation between all levels of management (national, basin and local) from the single rescue system.
49. PRO11-REAC38. Limiting and/or preventing new negative changes in the hydrological characteristics of water bodies.
50. PRO12-REAC40. Conservation of coastal floodplains and reservoir lands.
51. PRO13-REAC41. Anti-flood design and construction of buildings.
52. PRO14-REAC42. Implementation and adaptation of measures to protect new or existing buildings and facilities located in an area of high water runoff.
53. PRO17-REAC45. Reconstruction or construction of sewage facilities.
54. PRO58-REAC145. Maintenance of existing drainage networks in good condition.
55. PRO60-REAC147. Rehabilitation of existing drainage networks.
56. PRO6-REAC33. Prohibition of felling of natural tree vegetation under river banks and islands (the gallery forests along the river banks).
57. RR12-REAC103. Elimination of contamination during and immediately after flood events.
58. RR13-REAC104. Repair of local damage to banks and post-flood facilities with protective embankments.
59. RR14-REAC105. Cleaning basins with sediments.

60. RR17-REAC108. Damage restoration of damaged bridges, buildings and more, including sediments (solid, damaged objects). Damage restoration of damaged bridges, buildings and more, including sediments (solid, damaged objects).
61. RR18-REAC109. Removal of mud from the river bed.
62. RR19-REAC110. Eliminate pollution within POP limits.
63. RR3-REAC3. Activities to protect riverbanks and hollows from erosion, including biological reinforcement.

"Structural measures" are a variety of measures ranging from heavy engineering interventions (construction of dams, flood water drainage channels, dams, etc.) to constructions closer to the natural environment (wetland delineation, landscaping activities, etc.). "Non-structural measures" - represent actions that do not require large-scale investment in heavy engineering structures. Careful flood risk management planning allows authorities to develop a better risk information system from all sources and agree on priorities for its management. This plan sets the framework for how flood risk is managed in the Western White Sea region. /ZBR/ and who are the competent bodies for its implementation in the next 6 years.

The main function of the plan is to ensure that the public and the environment at risk are prepared and protected to the maximum extent by fulfilling the set objectives and undertaking the implementation of the prescribed measures. The Flood Risk Management Plan (FRMP) highlights the threat and risk of surface water flooding, setting out how risk management authorities will work with the public and stakeholders to manage this risk.

The NAP indicates how flood risk management can bring greater benefits to society and the environment.

Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on flood risk assessment and management clearly focuses on the objectives of flood risk management to reduce the potential adverse effects of flooding on:

- human health.
- the environment.
- the cultural heritage.
- economic activity.

non-structural initiatives and/or flood mitigation (if needed).

The main priorities concerning flood risk management in Bulgaria are:

1. Summarizing the results of the Maps and preparing maps containing the risk elements - type of economic activity, number of victims, facilities, resources, NEM objects, critical infrastructure, and cultural objects. In Table No. 1, for affected residents or the Greek version of the information is indicated (e.g. dca, number of affected residents or crucially important structure).
2. For each risk element for which a flood threat is identified, priorities and targets are formulated according to:
 - National priorities and goals, and
 - The particularities of the specific RZPRN.
3. The priorities and objectives for the watershed management area represent a set of formulated priorities and objectives for the river basins of the Struma River and the Mesta River.

In the construction of national priorities and their interactions with the means of achieving them, the following hierarchical chain is used:

PRIORITIES - OBJECTIVES - MEASURES.

In selecting the measures, a general approach was followed, following the logical sequence:

Stage 1. Description of the situation - in this stage, the available information on the state of the main water supply infrastructure is presented, as well as the information collected and processed in relation to previous floods and the estimates made for them.

Stage 2. Defining the main problems - in this stage, based on the information, the main problems related to flood protection are formulated, showing their relationship to national priorities.

Stage 3. Formulation of possible alternatives, presenting several possible solutions to the problems.

Stage 4. Selection of alternatives - the criteria for selecting alternatives are presented and the best alternative for each problem is selected. This is linked to the national priorities from which the degree of importance of the

individual measures is determined and on this basis the selection of alternative solutions, evaluation criteria and selection of measures for the specific case is made.

Stage 5. Selection of measures - based on the selected alternative, filters are selected, and a set of measures is selected, using the latest version of the catalog.

The steps listed are completed for each individual RZPRN. Based on the programs of measures for each RZPRN, a program of measures for flood risk management at the level of the Mesta River basin, the Struma river and the basin management area has also been drawn up. The PoM for flood risk management at the river basin level and at the river basin management area level consist of the preferred scenarios for the RZPRN included in them and at the river basin management area level are complemented by measures whose scope includes the entire ZBR.

2.5 COMPARATIVE ASSESMENT OF THE FLOOD RISK MANAGEMENT PLANS OF GREECE – BULGARIA, FOR THE CROSS-BORDER ZONE.

The comparative assessment of the Greek and Bulgarian measures shows that:

- Bulgaria's actions regarding the construction, operation and management of dams play a key role in the management of flood risk for Greece, which receives the water as a downstream country in the basin. There must be a substantial exchange of information on: the operation of the dams, the safety valves they have, the risk limits, real-time rainfall data, the calculation of the volume of water received by Greece from Bulgaria.
- The restoration of the banks in both countries will provide flood protection and enhance biodiversity in the areas.
- Technical and operational research should be carried out jointly. The know-how and experience of each country is very important and necessary for integrated flood risk management in the cross-border area.
- The early warning system needs data from both countries to be fully operational. Cooperation between the two countries can also take place at the operational level.

The table below shows the main measures taken by the two countries, the possible impacts and the actions required to be taken in the context of the cooperation between the two countries. Some limitations to the implementation of the following measures relate to, the uncertainty that the two countries have in terms of the sources of funding, related to the implementation of the measures. Greece's Flood Risk Management Plans are currently being revised, so there are likely to be variations.

Table 1 The management measures, potential impacts and required actions of Greece and Bulgaria to manage the flood risk

Management Measures	Possible effects	Required actions
Barrier creation and management (BOU)	<ul style="list-style-type: none"> • Potential impact on ecosystems • Possible increase in flood risk in Greece from sudden water drainage 	<ul style="list-style-type: none"> • Informing Greece about the quantities of water supplied. • Joint management of the water balance. • Risk limits, modelling
Improvement of the existing hydrological information system (BOU – GR)	<ul style="list-style-type: none"> • Better data for flood models • More reliable real-time data. 	<ul style="list-style-type: none"> • Cooperation between the two countries, joint evaluation of information.
Temporary flooding of agricultural land (BOU)	<ul style="list-style-type: none"> • Discharge of flood waters. Reduction of flood risk 	<ul style="list-style-type: none"> • Requires sound operational planning and real-time data evaluation
Rescue of embankments and flooded terraces (BOU – GR)	<ul style="list-style-type: none"> • Increasing biodiversity • Reduction of flood risk 	<ul style="list-style-type: none"> • Interdisciplinary approach • Cooperation between stakeholders • Rehabilitation actions

Technical and operational research (BOU - GR)	<ul style="list-style-type: none"> • Improving the operational capacity of the two countries. • Reducing the impact of flood events 	<ul style="list-style-type: none"> • Exchange of knowledge and experience (BOU - GR) • Joint exercises and operational actions. • Coordination at all levels of management (BOU - GR)
Technical flood protection works (BOU - GR)	<ul style="list-style-type: none"> • Potential impacts on natural systems. • Possible displacement of the problem to neighbouring areas. • Shielding from flooding 	<ul style="list-style-type: none"> • Flood control projects that respect the environmental acquis of the European Union are needed
Land Use and Land Cover Control (BOU - GR)	<ul style="list-style-type: none"> • Vulnerability reduction. • Restoration of the natural environment 	<ul style="list-style-type: none"> • Significant control procedures and cooperation between stakeholders are required
Early Warning System Early Warning System (BOU - GR)	<ul style="list-style-type: none"> • Saving human lives. • Reduction of material damage. 	<ul style="list-style-type: none"> • Real-time data download (BOU - GR) • Public preparedness for the flood threat (BOU - GR) • Joint operational actions, from prevention to restoration.

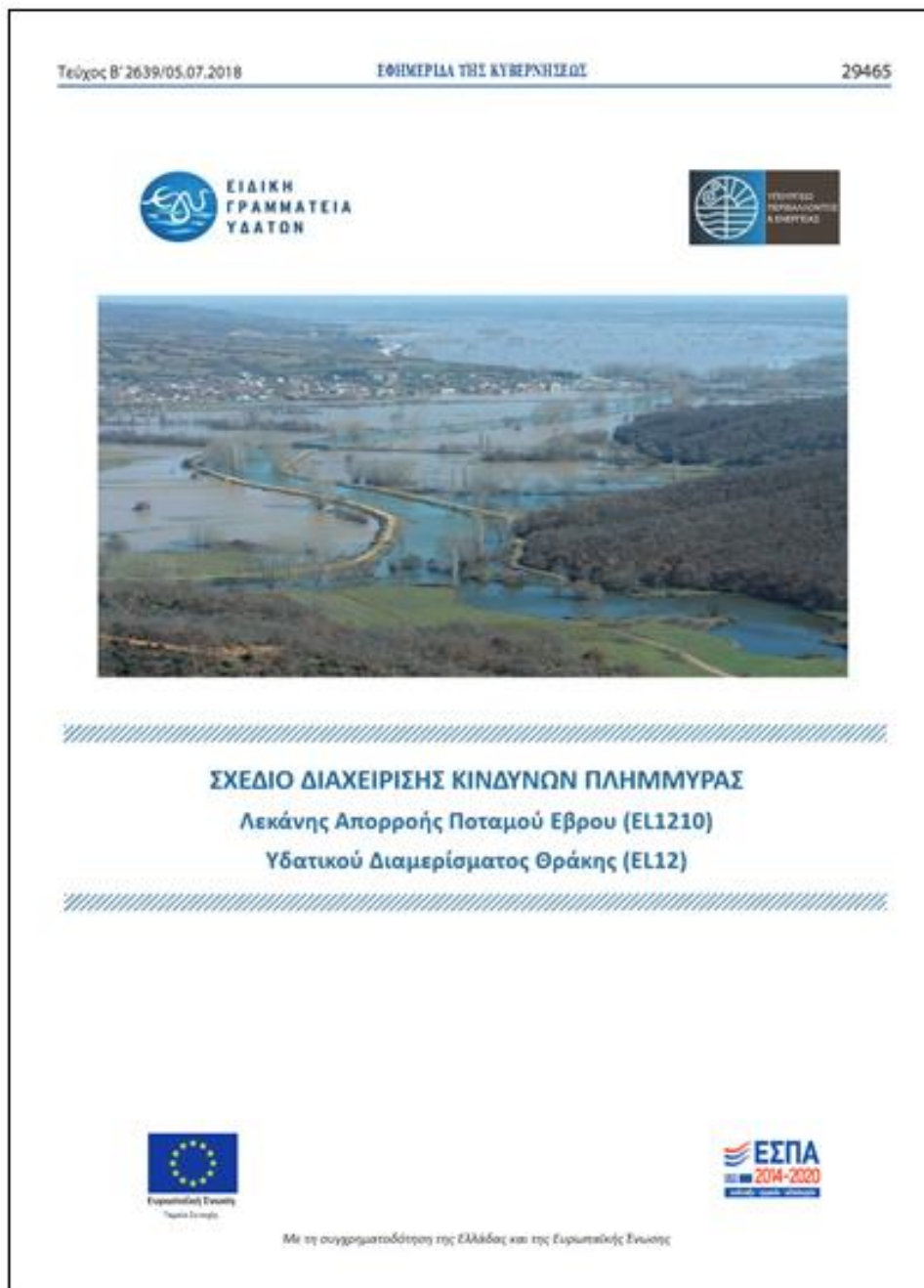


Figure 1 The Flood Risk Management Plan for River Evros in Greek (source: https://floods.ypeka.gr/index.php?option=com_content&view=article&id=1106&Itemid=1145)



МИНИСТЕРСТВО НА ОКОЛНАТА СРЕДА И ВОДИТЕ

МИНИСТЕРСТВО | ВЪЗДУХ | ВОДИ | ПРИРОДА | ПОЧВИ | ОТПАДЪЦИ | КЛИМАТ | ШУМ | РАДИАЦИЯ | ПРЕВАНТИВНА ДЕЙНОСТ

НАЧАЛО / ВОДИ / ПЛАНОВЕ ЗА УПРАВЛЕНИЕ / ПЛАНОВЕ ЗА УПРАВЛЕНИЕ НА РИСКА ОТ НАВОДНЕНИЯ (ПУРН) / ПЛАНОВЕ ЗА УПРАВЛЕНИЕ НА РИСКА ОТ НАВОДНЕНИЯ 2022-2027

ПЛАНОВЕ ЗА УПРАВЛЕНИЕ НА РИСКА ОТ НАВОДНЕНИЯ 2022-2027

ВОДИ

- Стратегически документи
- Актуално / Новини
- Проекти
- Законодателство
- Планове за управление
 - Планове за управление на речните басейни (ПУРБ)
 - Планове за управление на риска от наводнения (ПУРН)
 - Планове за управление на риска от наводнения 2022-2027
 - Планове за управление на риска от наводнения 2016-2021
 - Консултации с обществеността за ПУРБ
 - Консултации с обществеността за ПУРН
- Повърхностни води
- Подземни води
- Минерални води
- Морски води
- Опазване на водите от замърсяване
- Регистри
- Информационна система за разрешителни и мониторинг
- Административни услуги
- Актуални съобщения
- Указания

График и Работна програма за актуализиране на ПУРН 2022-2027

Проект BG16M1OP002-4.005-0001-C01: „ПУРН – втори цикъл 2022-2027 г.“, финансиран по Оперативна програма „Околна среда“ 2014-2020 г.“

МОСВ започна изпълнение на втори цикъл по изготвяне на планове за управление на риска от наводнения до 2027 г. ([изтегли](#))

I. ПРЕДВАРИТЕЛНАТА ОЦЕНКА НА РИСКА ОТ НАВОДНЕНИЯ

Актуализация на предварителната оценка на риска от наводнения - основен доклад ([изтегли](#))

Предварителна оценка на риска от наводнения в Дунавски район за басейново управление 2022-2027 г.

Предварителна оценка на риска от наводнения в Черноморски район за басейново управление 2022-2027 г.

Предварителна оценка на риска от наводнения в Източнобеломорски район за басейново управление 2022-2027 г.

Предварителна оценка на риска от наводнения в Западнобеломорски район за басейново управление 2022-2027 г.

Методика за предварителна оценка на риска от наводнения ([изтегли](#))

Заповед № РД-940/ 20.11.2020 г. на Министъра на околната среда и водите за утвърждаване на методиката ([изтегли](#))

II. КАРТИ НА ЗАПЛАХАТА И РИСКА ОТ НАВОДНЕНИЯ

Национална методика за картиране на заплахата и риска от наводнения ([изтегли](#))

Заповед № РД-833/ 30.08.2021 г. на Министъра на околната среда и водите за одобрение на методиката ([изтегли](#))

Кarti на районите под заплаха и с риск от наводнения за Дунавски район за басейново управление

Кarti на районите под заплаха и с риск от наводнения за Черноморски район за басейново управление

Кarti на районите под заплаха и с риск от наводнения за Източнобеломорски район за басейново управление

Кarti на районите под заплаха и с риск от наводнения за Западнобеломорски район за басейново управление

III. ПЛАНОВЕ ЗА УПРАВЛЕНИЕ НА РИСКА ОТ НАВОДНЕНИЯ (ПУРН)

Методика за оценка и за приоритизиране на мерките в ПУРН ([изтегли](#))

Заповед № РД-294/ 12.04.2022 г. на Министъра на околната среда и водите за утвърждаване на методиката ([изтегли](#))

Проект на План за управление на риска от наводнения в Дунавски район за басейново управление за периода 2022-2027

Проект на План за управление на риска от наводнения в Черноморски район за басейново управление за периода 2022-2027

Проект на План за управление на риска от наводнения в Източнобеломорски район за басейново управление за периода 2022-2027

Figure 2 The Flood Risk Management Plan for East Aegean Rivers in Bulgarian (source: <https://www.moew.government.bg/bg/vodi/planove-za-upravlenie/planove-za-upravlenie-na-riska-ot-navodneniya-purn/planove-za-upravlenie-na-riska-ot-navodneniya-2022-2027vmchvch/>)

2.6 PROPOSED INITIATIVES TO IMPROVE DATA AND KNOWLEDGE EXCHANGE WITH THE FURTHER OBJECTIVE OF DEVELOPING JOINT FLOOD RISK MANAGEMENT PLANS.

European territorial cooperation (ETC) is a key objective of the European Union's policy on issues aimed at solving cross-border problems. Cooperation actions supported by the European Regional Development Fund (ERDF) fall under three main components: cross-border, transnational and interregional cooperation.

The period 2021-2027 marks the further development of interregional cooperation (Interreg), with enhanced cooperation with partner countries through the Interreg Instrument for Pre-Accession Assistance (IPA) and Interreg NEXT, and the inclusion of a specific strand for cooperation between the EU's outermost regions and their neighbouring countries.

Cross-border cooperation (strand A of Interreg) supports cooperation between regions from at least two different Member States located directly on or adjacent to borders. It aims to address common challenges identified jointly in border regions and to exploit the untapped development potential in border regions, while strengthening the cooperation process for the purposes of the overall harmonious development of the Union.

Transnational cooperation (strand B of Interreg) allows for cooperation in wider transnational territories or around sea basins and involves national, regional and local programme partners in Member States but, in some programmes, also in non-EU countries (such as Iceland and Liechtenstein), enlargement and neighbourhood partner countries and overseas countries and territories (OCTs), with a view to achieving a higher degree of territorial integration. The transnational cooperation implemented by the outermost regions falls under a separate strand. Interreg strand B supports a wide range of investments in projects related to innovation and green and digital transition.

The Regulation also establishes cooperation outside the EU that promotes sustainable development and good neighbourly relations between EU Member States and enlargement and neighbouring countries, and between the EU's outermost regions and their neighbours. EU external cooperation programmes

cover the EU and its neighbouring countries and contribute to the objectives of three EU policies: cohesion policy, enlargement policy and neighbourhood policy.

As the Interreg Regulation is subject to the ordinary legislative procedure, the European Parliament was able to co-decide on its content on an equal footing with the Council. During the negotiation of cohesion policy for the period 2021-2027, the European Parliament supported a stronger budget for the ESF programmes and simpler rules and procedures. The European Parliament actively promoted greater support for small and inter-personal projects, as well as an increased focus on climate and social issues. The European Parliament has also paid particular attention to the specific problems of the outermost regions.

(SOURCE: <https://www.europarl.europa.eu/factsheets/el/sheet/98>)

2.7 PROPOSED REGULAR UPDATE OF PARTICIPANTS IN THE JOINT WORKING GROUP (JWG)

The transnational cooperation between Greece and Bulgaria within the framework of FLOODGUARD is fully integrated and harmonized with the philosophy of the European Union.

Some suggestions for improving the functioning of the JWG are as follows:

- To further strengthen the scientific character of the group, the group already has an interdisciplinary character, but it is proposed to integrate other specialists, experts in specialised tools, in the fields of geosciences, climatology, geostatistics and humanities. This will further strengthen the interdisciplinary character of the group.
- The group should be more flexible in terms of meetings, and smaller working groups should be set up to work together on individual Floodguard issues.
- At the operational level of the meetings, online meetings may be held earlier than the formal meetings of the group, in order to: set the agenda and appoint the members' representatives.
- The meetings are proposed to be held every three months (instead of the current four), so that the group can interact more and produce more meaningful conclusions.
- Many meetings can be held online, to reduce the operational costs and the environmental footprint of the group.
- It is proposed to strengthen the team with special communicators, who will be able to: organize effective information and awareness-raising meetings, edit the Floodguard printed information material.
- The possible expansion of the partner network, as well as the operational upgrade of the two countries.
- The JWG should acquire members from the Civil Protection Directorate of the region of Macedonia - Thrace, who should be members of the project.

2.8 DESIRED RESULTS FROM THE ACHIEVEMENT THE ABOVE OBJECTIVES

The continuation of the floodguard is expected to increase the technical and administrative capacity for a more effective and timely response to flood events. Supporting interoperability of national systems and better coordination in Prevention, Control and Improved Response to natural disasters will enhance effectiveness.



Figure 3. A road map for transboundary flood-protection collaboration

The desired results from the achievement of the above objectives are:

- Strengthening the interdisciplinary character of the group the scientific character of the group.
- Improving the team's flexibility in meetings and in the way they work together.
- Strengthening the flood early warning programme in the cross-border area.
- Strengthening the role of the group.

The multidisciplinary approach of the group, the exchange of information between the two countries, and the effective cooperation in the cross-border zone contribute to effective flood risk management.

A desirable objective is to promote the results of the JWG to the scientific community and the relevant stakeholders. And to inform the society of the two countries.

The important issue is to raise awareness among the citizens of both countries who are directly or indirectly threatened by flooding in the region.

The results of Floodguard are very valuable. The conclusions and practices co-constructed at the JWG operational level are very basic information that should be taken into account in the flood protection of countries at all levels of planning.

The results of FLOODGUARD should be used at all levels, from planning and prevention to restoration, in the face of flood events.

The JWG between Greece and Bulgaria can function institutionally, organizationally and effectively and bring significant positive results for both countries.

The exchange of experience between the two countries, as well as coordination at the operational level, is bringing about significant changes, which are expected to be even more substantial in the future.

The JWG team contributes substantially to the assessment monitoring, prevention and response to flood events. FLOODGUARD, should be continued and strengthened to achieve all these results that have significant Socio-Economic and Environmental benefits for both countries.

3 DEVELOPMENT OF A ROADMAP EXPLORING ADDITIONAL FUNDING FOR THE FINANCIAL SUSTAINABILITY OF EXPERTS AND THE JOINT WORKING GROUP, REPORT WRITTEN BY JWG

3.1 EVALUATION OF JWG

The Joint Working Group (JWG) was set up to prevent and respond to flood events. It provides for cooperation between Greece and Bulgaria in order to implement joint actions to improve coordination between the institutions of both countries.

The JWG team has managed to achieve high goals in the level of its operation so far. A very important result is the effective and direct exchange of data, information and know-how without the interference of third parties. This has already contributed to a better flood risk assessment than in the past, the lack of information that existed in the past created significant weaknesses in flood risk modelling.

The functioning of the group is based on the essence of the FRMPs (Flood Risk Management Plans), and will contribute substantially to their updating, producing more complete data for the cross-border area.

The exchange of experience, know-how and practices related to flood management can upgrade the operational capabilities of both countries and increase the level of cooperation for joint prevention and response.

The JWG team is multidisciplinary, including a wide range of experts with proven expertise in their field. The project team specialties are: Engineers, Geologists, Foresters, Communicators, etc. The interdisciplinary approach followed contributes substantially to finding solutions at the levels of prevention and response to flood events.

3.2 Assessment of the current situation: Analysis of stakeholders at national, local, and cross-border level (Greece, Bulgaria)

Based on Directive 2007/60/EC, the active participation and information of the public is required in all stages of its implementation to prevent, deal with and limit floods.

Based on the KYA, U.P. 31822/1542/E103/2010 which incorporates Directive 2007/60/EC into Greek legislation:

- The Water Directorate of each Decentralized Region, within the framework of its responsibilities, must ensure the substantial participation of the public in the Flood risk management procedures, in accordance with article 9.
- For Information – Public Involvement, flood risk assessments, flood risk and hazard maps and Flood Risk Management Plans should be publicly available.
- The Water Directorate of each Region must ensure the active participation of those interested in the preparation, review and updating of the Flood Risk Management Plans.

In addition, based on 11764/653/2006 KYA, there should be dissemination of Environmental information to the public, for this reason: Public authorities are obliged to organize the Environmental information of their competence that they possess, as well as those that they possess or possess for their account, with the aim of their active and systematic dissemination.

Also, in the event that there is an immediate threat to human life or the Environment, due to human or natural causes, it is required to disseminate immediately without delay, all information held by public authorities, or on their behalf, which would allow to the public to take steps to prevent and limit harm from said threat. To achieve this, public authorities may satisfy the requirements of this article by using online media (website, social media, etc.).

The JWG can contribute to strengthening the information and updating of the GMPs, as well as strengthening the consultation processes. Through the consultation procedures, the main requests are:

- The investigation of the local attitudes and opinions of the inhabitants on the way proposed by the SDKPs to deal with the flood risk.
- The analysis and highlighting of the Socio-Economic and Environmental dimension of floods.

- The integration of the opinions of the local community in the planning and management of the Flood Risk.

In order to assess citizens' opinions, in addition to face-to-face meetings, various techniques can be used, such as the use of a questionnaire, the structure of which should be the result of an interdisciplinary approach.

The social partners that can participate in a public consultation, on the flood risk, are: the State partners - Public administration, the productive classes and Citizens and civil associations.

Based on the above reasoning, the social partners that can potentially participate in a public consultation are:

A. State-administrative mechanism.

-Ministry of Agriculture

-Ministry of Environment

-Representatives of the Region, the Prefecture and the Municipalities of the region

B. Citizens and Associations of Citizens who are directly or indirectly exposed to the flood risk.

C. The scientific-research world, which has accumulated knowledge on the issues under consideration.

Today there is a need to highlight and solve the issues related to the flood risk. There is a need for consultations in a co-decision climate of various social entities, based on National and International legislation and based on the principles of water management at the catchment level. To ensure that Flood risk prevention and management is environmentally and economically supported and socially just.

In the image below, all the involved bodies are presented diagrammatically.

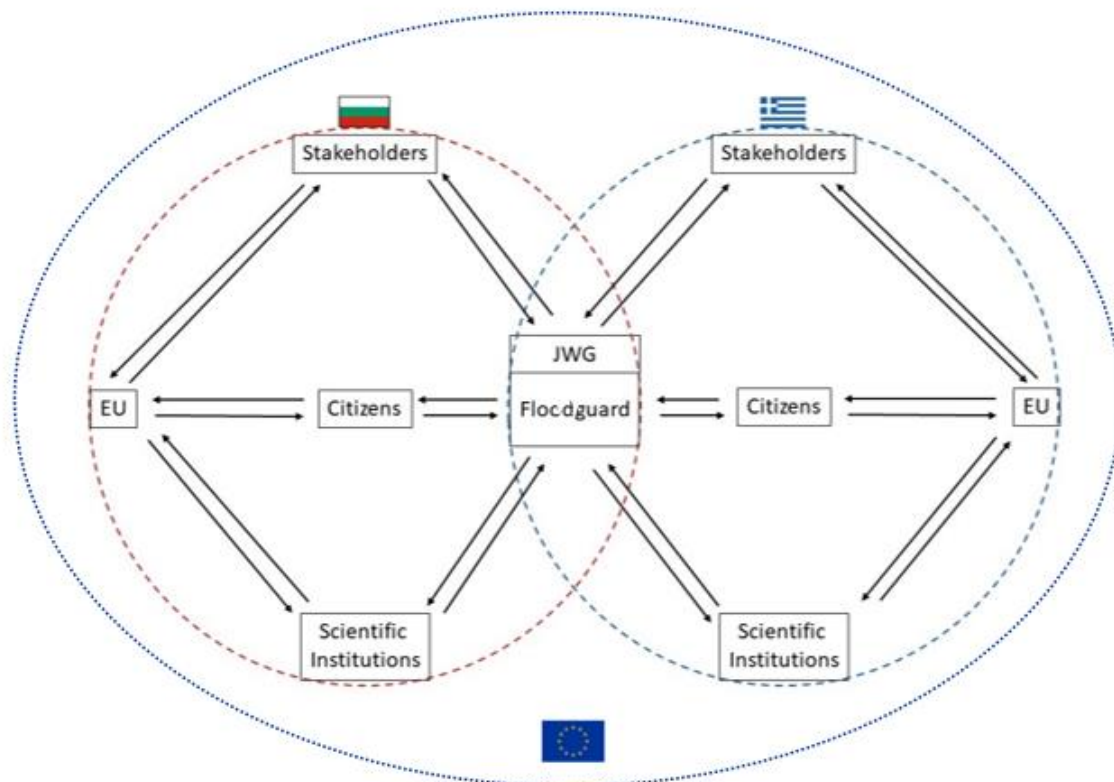


Figure 4. The involved Stakeholders.

3.3 Explore the possibility of additional funding for the financial sustainability of the JWG after the end of the project.

As has been mentioned, despite the adverse conditions faced by Floodguard, it achieved several important goals and brought together flood managers at the level of those who actually implement Flood Risk Management Plans (FRMs). It is therefore deemed necessary to continue Floodguard.

For the continuation of the program, potential sources of project are:

- **The program (Interreg VI-B) NEXT Black Sea Basin**

The program includes the countries Greece and Bulgaria and has financial resources aimed at increasing the preparedness and adaptability of society,

regarding the risks related to the environment and Climate change. The program sets the agenda for sustainability and is instrumental in mitigation projects, it also promotes the development of smart climate change monitoring, planning and management

- **The program (Interreg VI-A) Greece-Bulgaria**

Where it foresees the expansion of the operation of Floodguard, to increase the capacity to respond to disasters and emergency situations for the countries of Greece and Bulgaria. The program also includes the installation of an early warning system for flood phenomena.

In the context of the period 2021-2027, the Project should comply with national and regional adaptation policies and delegated powers, with Regional Adaptation, strategic plans, the National Strategy, and the Flood Risk Prevention Plan.

The continuation of the floodguard is expected to increase the technical and administrative capacity for a more effective and timely response to flood events. Supporting the interoperability of national systems and better coordination in Prevention, Control and Enhanced Response to natural disasters will enhance effectiveness.

4 ELABORATION OF A DETAILED STUDY ON DEFINING THE ROLE OF THE JOINT WORKING GROUP (ELABORATION OF A DETAILED STUDY ON)

4.1 ROLE OF THE JOINT WORKING TEAM

The need for a common institutional approach, between Greece and Bulgaria, for flood risk management, paved the pathway to undertake this INTERREG project, and in turn that led to the creation of the JWG Joint Working Group.

Specific goals set for the effective operation of the JWG are:

- The implementation of studies and a comparative analysis of the current legislation, regarding the relevant framework in the field of flood prevention, preparedness, and response in the two countries.
- The development of strategic action plans for both countries to prevent and deal with flood phenomena.
- The preparation of a simple plan to allocate responsibilities and facilitate the interaction and communication between the competent authorities from both countries.
- The identification of the main problems concerning the flood risk for both countries and the undertaking of actions with the cooperation of the two countries.

The JWG Operating Rules have been developed:

- In the framework of the Establishment of a Joint Working Group for the prevention and response to flood phenomena,
- In the context of the Partnership Agreement for the project "Integrated actions for joint coordination and response to flood risks in the Cross-Border area", with the acronym of the FLOODGUARD project, financed under the INTERREG V-A Cooperation Program Greece-Bulgaria 2014-2020,

The formation of the Joint Working Group JWG was carried out with the aim of undertaking joint actions to strengthen prevention and action against flood phenomena, with the main objective of improving the coordination of agencies from both countries.

The working language for the operation of the JWG is English. More information on the used terminology and definitions is provided in the Program and Project

documents available on the official website of the Program: <http://www.greece-bulgaria.eu>

4.2 CONFIRMATION OF THE ROLE FROM THE MEETING MINUTES

The Joint Working Group (JWG) was established to prevent and respond to Flood phenomena. It foresees the cooperation between Greece and Bulgaria with the aim of implementing joint actions, to improve the coordination of the agencies of both countries. For this reason, the initial planning provided for the implementation of joint regular meetings between the members of the JWG on a four-month basis, within the framework of the actions required for the project.

The effectiveness of the JWG is ensured through studies and comparative analyzes of the current legislation and the relevant framework, concerning the field of flood prevention and preparedness. The preparation of strategic studies, with the planning of actions for both countries, for the prevention and response in cases of flooding, the creation of road maps of responsibilities, the interactions and communications between the competent bodies, the identification of weaknesses and the promotion of actions and joint solutions

The aim is that the results of the Bulgarian and Greek partners complement each other and add value to the final results.

The JWG team consists of specific members from both states. Through the meetings that are implemented, the objectives of the overall agenda of the JWG are determined, meetings are organized and the agenda is prepared, invitations are made to renowned scientists, minutes of each meeting are kept and the decisions taken are monitored and implemented.

JWG members participate according to the operating framework that has been set.

As far as the part of the communication strategy is concerned, a key point is the management of the interested parties and the communication of all the information that is considered important in the context of the FLOODGUARD program, for this reason the creation of information networks is being attempted to connect all the interested parties from Greece and Bulgaria. The project's communication channels are: the Floodguard website, social media and the project's press office. The press office is responsible for the publications and press

releases of the project, while at the same time, appropriate printed advertising material (leaflets, stickers, etc.) has been produced and used.

The following table shows the meetings that have been implemented so far. *Table 2. Schedule of JWG meetings.*

Table 2. JWG meeting schedule.

9 Meetings of the JWG under WP 3	Hosted by
Meeting 1 22 and 23 January 2020	General Secretariat for Natural Environment and Water, Ministry of Environment and Energy Place of event: Thessaloniki, GR General Secretariat of Natural Environment and Water, Ministry of Environment and Energy. Venue: Thessaloniki, Greece.
Meeting 2 03 and 04 June 2020	West Aegean River Basin Directorate - Blagoevgrad Place of event: Blagoevgrad, BG West Aegean River Basin Directorate - Blagoevgrad Venue: Blagoevgrad, BG.
Meeting 3 06 and 07 October 2020	Decentralized Administration of Macedonia-Thrace, Thessaloniki Place of event: Thessaloniki, GR Decentralized Administration of Macedonia-Thrace, Thessaloniki Τόπος εκδήλωσης: Θεσσαλονίκη, GR
Meeting 4 03 and 04 February 2021	East Aegean River Basin Directorate Place of event: Smolyan, BG. East Aegean Watershed Directorate Venue of the event Venue: Smolyan, BG.
Meeting 5	Decentralized Administration of Macedonia-Thrace,

<p>29 and 30 June 2021</p>	<p>Thessaloniki Place of event: Thessaloniki, GR. Decentralized Administration of Macedonia-Thrace, Thessaloniki Venue: Thessaloniki,</p>
<p>Meeting 6 13 and 14 July 2022</p>	<p>FSCPDG,Bulgaria Place of event: Blagoevgrad, BG. FSCPDG, Bulgaria Venue: Blagoevgrad, BG</p>
<p>Meeting 7 02 February 2023</p>	<p>General Secretariat for Natural Environment and Water, Ministry of Environment and Energy Place of event: Kavala, GR. General Secretariat of Natural Environment and Water, Ministry of Environment and Energy. Venue: Kavala, GR.</p>
<p>Meeting 8 16 and 17 May 2023</p>	<p>East Aegean River Basin Directorate Place of event Place of event: Smolyan, BG. East Aegean Watershed Directorate Venue of the event. Venue: Smolyan, BG</p>
<p>Meeting 9 29 and 30 November 2023</p>	<p>General Secretariat for Natural Environment and Water, Ministry of Environment and Energy Place of event: Kavala GR General Secretariat of Natural Environment and Water, Ministry of Environment and Energy. Venue: Kavala, GR.</p>

For each meeting, the preparation stages are as follows:

- *Invitation.*
- *List of participants.*

- *Agenda.*
- *Presentations.*
- *Practices.*
- *Other necessary documents.*

From all the meetings, the work topics and concerns are:

- The establishment of the JWG Joint Working Group and the formal appointment of members
- The participation of experts in the meetings
- The role of the JWG, in relation to common problems and points of interest, in the context of flood risk management and the FLOODGUARD project.
- Strengthening the team's flexibility and strengthening its scientific character.
- The exchange of experiences, know-how and opinions on flood phenomena, between the two countries
- The definition of the frequency of meetings, to be every 4 months.
- The effort to resolve administrative, organizational, and technical issues of the Joint Working Group.
- The official appointment of members

4.3 THE FUTURE ROLE OF THE JWG

The continuation of the floodguard is expected to increase the technical and administrative capacity for a more effective and timely response to flood events. Supporting the interoperability of national systems and better coordination in Prevention, Control and Enhanced Response to natural disasters will enhance effectiveness.

Some suggestions for improving the operation of the JWG group are the following:

- To further strengthen the scientific character of the group, the group already has an interdisciplinary character, but it is proposed to integrate other specialist scientists, knowledgeable of specialized tools, in the fields of geosciences,

climatology, geostatistics and humanities. So as to further strengthen the interdisciplinary character of the group.

- The team should be more flexible in terms of meetings, and smaller working groups should be created to collaborate on individual Floodguard topics.
- In the long term, there could be cooperation with Turkey as well, as the Evros / Maritsa watershed also passes through Turkish territory. A tri-country collaboration on flood risk could be essential.
- At the operational level of the meetings, online meetings can be held earlier than the official meetings of the group, in order to: define the topic and define the representatives of the members.
- Meetings are proposed to be held every three months (instead of four as of now), so that the group interacts more and produces more meaningful conclusions.
- Many meetings will be able to be held online, to reduce the team's operating costs and environmental footprint.
- It is proposed to strengthen the team with specialist communicators, who will be able to: organize essential meetings to inform and raise awareness of the society, to edit the printed informational material of Floodguard.
- To complete and strengthen the early warning program for flooding phenomena in the cross-border area.
- The JWG should acquire members from the Directorate of Civil Protection of the region of Macedonia - Thrace, who are members of the project.
- Finally, the main issue is the improvement and strengthening of the role of the team. And its conclusions should be published and taken seriously by the agencies involved.

5 CONCLUSIONS

The Floodguard programme and its results strengthen flood protection in both countries at all levels.

The main objective is to continue Floodguard and to highlight its results so that they can be used in planning, prevention and recovery.

Transnational cooperation between the two countries should be strengthened and all stakeholders should be informed and interact. The JWG can contribute to this through its work.

A joint approach to flooding in the cross-border area, based on European Union guidelines, can reduce the risks and impacts of flooding.

At the operational level, the two countries can be significantly strengthened, and this can be achieved through cooperation between the members of the JWG.

The increase in flooding in recent years, due to climate change and poor management practices over several decades in both countries, underlines the need for good cooperation with the JWG's multidisciplinary team. Proposals and solutions that address adaptation to the climate crisis without compromising the environmental acquis as defined by the European Union can emerge and be identified.

The comparative assessment of the Flood Risk Management Plans concludes that both countries are in line with the European Directive and highlights the importance of continuous and substantial cooperation between the two countries on issues related to flood risk management in the cross-border area. The FLOODGUARD programme and the work of the JWG can make a significant contribution in this direction.

Improving the knowledge of the local community and capturing their views on natural environment monitoring issues are important issues for the JWG, where it can benefit the community by providing targeted information on flood risk without creating a sense of insecurity among citizens. At the same time, it can fill some gaps in terms of useful and managed information (such as historical flood records, etc.) from citizens by capturing the ideas and attitudes of communities around the FLOODGUARD area of interest.

The JWG contributes to the implementation of studies on flood prevention and response in both countries, the development of strategic action plans for both countries, the implementation of joint actions for both countries and the identification of the main and common problems they face in the cross-border area.

The JWG team contributes significantly to the assessment, monitoring, prevention and response to flood events. FLOODGUARD should be continued and strengthened in order to achieve all these results, which have significant socio-economic and environmental benefits for both countries.

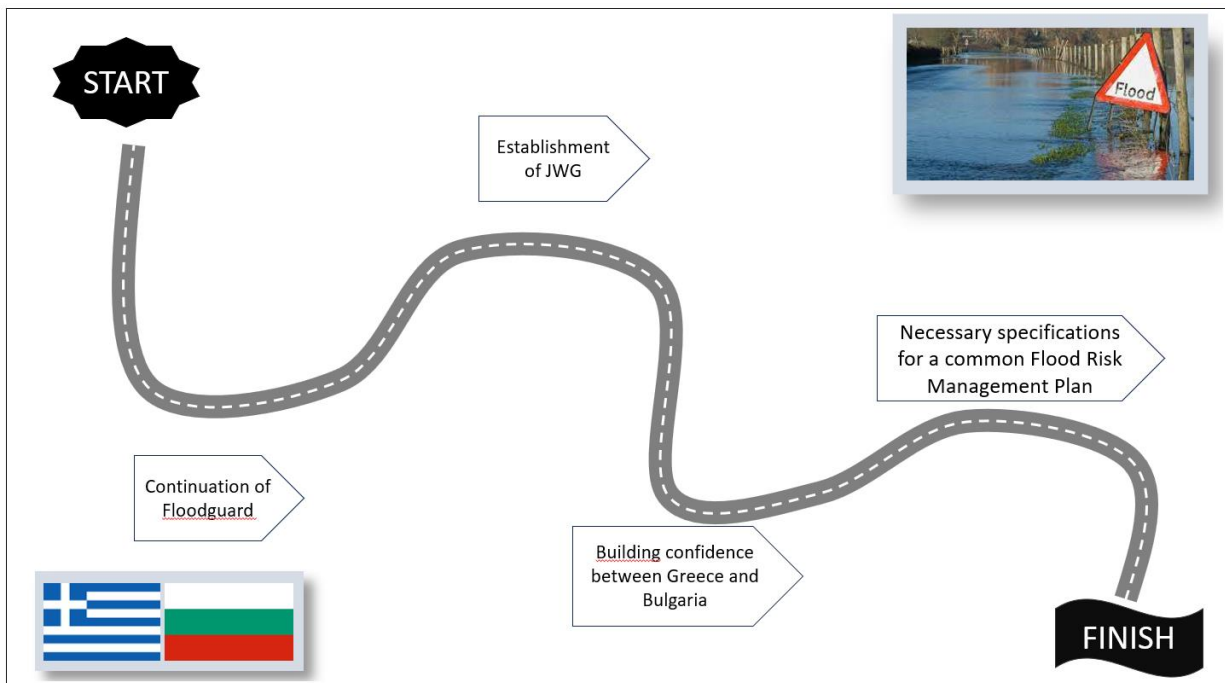


Figure 5 A roadmap for cross-border cooperation under the FLOODGUARD project

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