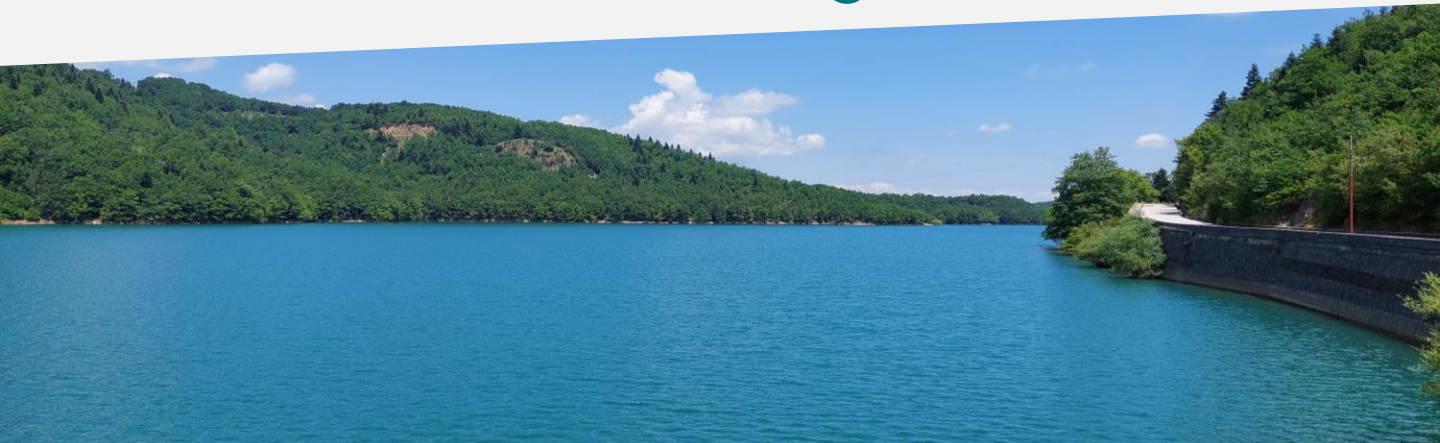




Newsletter No. 3

Multihazard framework for water related risks management



THE OVERVIEW OF THE MUHA PROJECT

The transnational cooperation of the MUHA project was conducted from March 2020 to December 2022. In order to improve the Water Safety Plans (WSPs), the MUHA's consortium developed a harmonized action plan, methods and tools for the Adriatic-Ionian region. Based on the main results and outputs obtained during the implementation of the project, the main end users, such as water utilities, will have the opportunity to implement WSPs in an easy and effective way. The undertaken activities of the pilot sites contributed to a better understanding of the research areas.

THE MAIN OBJECTIVES FROM THE WORK PACKAGES

**WORK PACKAGE T1:
MULTIHAZARD RISK
ASSESSMENT PROCEDURES**

**WORK PACKAGE T2:
PILOTS: IMPLEMENTATION
AND FEEDBACK**

**WORK PACKAGE T3:
STRATEGY AND ACTION
PLAN DEVELOPMENT**

During the implementation of Work Package T1 the current status of the water supply safety management was analyzed and compared by each country. In order to prepare the Improved Water Safety Plans (ISWPs) the knowledge and good practices were exchanged through the conducted state-of-the-art questionnaires, guidelines and developed tool named WASPP - DSS. Water utilities and civil protection institutions will benefit from the application of the developed tool for preparing and implementing Improved Water Safety Plans. As well as, the tool will be used for educational purposes after the expiration of the project.

Table-top exercises (TTX) simulated a complex hazardous event, clarifying roles, responsibilities, and emergency preparedness needs. In order to assess the hazardous events, the (TTX) were tested on the six pilot sites. Results were used to rank different hazards and risks on each pilot site. The multi-hazards analysis were performed per component and per hazard. Also, the TTX supported bridging the gap between civil protection authorities and water utilities. Based on the exchanged knowledge and experiences, the resilience of the Water Supply Systems was improved through implemented pilot action activities (monitoring systems, hydraulic models and scenario analysis, groundwater impact models etc.).

The development of the REWAS-ADRION Charta was based on experiences, deliverables and outputs produced in the Work Package T1 and T2. It represents a harmonized document proposing a Strategy for a more resilient water supply, incorporating four main addressed hazards. The main goals are dedicated to improving the water safety planning and monitoring procedures oriented to preparedness and emergency responses; to increasing the governance structures and inter-agency cooperation effectiveness; developing the necessary measures facilitating effective function of the water safety planning mechanism and upgrading the operation, management databases for quantitative, qualitative data and characteristics of floods, droughts, accidental pollution and failures due to earthquakes hazards.

THE SUMMARY OF THE PROJECT'S OUTPUTS



UNAS - Users Network ADRION water Safety plan

The UNAS community forum is an easy, effective and safe transnational platform that will be used for sharing knowledge and experiences related to the developed MUHA's tool. The main end users, such as water utilities will have the possibility to provide structured feedback during and after the MUHA project.



Action plan for the development of table-top exercises for improved WSS reliability

Based on the experiences from the conducted table-top exercises (TTX), the developed Action plan will lead to standardizing the requirements and procedural framework in case of any hazards. TTX were organized to put crisis response managers and practitioners in a situation to use existing plans and procedures and to take decisions according to a proposed scenario.



REWAS - ADRION strategy towards resilient water supply

The knowledge and experience obtained from the project tools and methods will be summarized in the strategy document REWAS. Based on the MUHA's tool and methods defined in the Action plan, this Strategy will present a harmonized document for a more resilient water supply system.



Institutional action plans for resilient water supply

The Institutional action plan will be used as a document for the implementation of the procedures and tools for a more resilient water supply. The action plans recognized the specific methods for addressed organizations such as regional public authorities, sectoral agencies, infrastructure and public service providers, local public authorities and national public authorities.



THE MAIN GOALS OF THE PERFORMED PILOT ACTION ACTIVITIES

THE RIDRACOLI ARTIFICIAL RESERVOIR

The tool INOPIA^{Qgis} for the early detection of incoming water shortage was utilized in order to reduce the potential risk of the addressed hazards.



WATER UTILITY OF KAMNIK

The future activities of the Kamnik Water supply system will be dedicated to modeling different disaster scenarios by the developed hydraulic model.



DRINKING WATER SUPPLY OF THE CITY OF NIKŠIĆ

The main purpose of investigations performed on the Gornji and Donji Vidrovan water bodies was to capture additional quantities of water quality.



THE CATCHMENT AREA OF THE SPRING GOLUBINKA

The hydrogeological research was conducted in the Zadar hinterland in order to provide a better understanding of the catchment area and define the mixing zone of fresh and saltwater (seawater intrusions).



MUNICIPAL WATER SUPPLY & SEWERAGE COMPANY OF LARISSA

An integrated information system for the improvement of the Water Safety Planning mechanism was launched as a study and supported by developed software.



THE WATER UTILITY OF ISTRIA

The developed mathematical (hydraulic) model of the water supply system will be used as a key factor for simulating various hazardous scenarios and defining strategies in Water Safety Plans.



THE VIDEO TUTORIAL

Water Safety Planning Procedures Decision Support System (WASPP-DSS) and UNAS networking site

Toolkit for Water Safety Planning Procedures Decision Support System (WASPP - DSS) is aiming to manage and prevent natural and man-made hazards through the development of Improved Water Safety Plans (IWSPs). The toolkit supports a user's transnational networking cooperation UNAS - Users Network ADRION water Safety plan.

As part of the Interreg ADRION MUHA project, the consortium has developed the WASPP - DSS to support the development of risk analysis for Water Safety Plans, following WHO guidelines, particularly suitable for smaller water utilities: <http://muha.apps.vokas.si/home>



ENGLISH VERSION

<https://www.youtube.com/watch?v=bfHxK3aFgsM&t=21s>

NATIONAL VERSIONS

MUHA Video Tutorial on Water Safety Plan - Italian subtitles

<https://www.linkedin.com/.../urn:li:activity...>

MUHA Video Tutorial on Water Safety Plan - Croatian subtitles

<https://www.linkedin.com/.../urn:li:activity...>

MUHA Video Tutorial on Water Safety Plan - Slovenian subtitles

<https://www.linkedin.com/.../urn:li:activity...>

MUHA Video Tutorial on Water Safety Plan - Greek subtitles

<https://www.linkedin.com/.../urn:li:activity...>

MUHA Video Tutorial on Water Safety Plan - Serbian subtitles

<https://www.linkedin.com/.../urn:li:activity...>

Toolbox info:

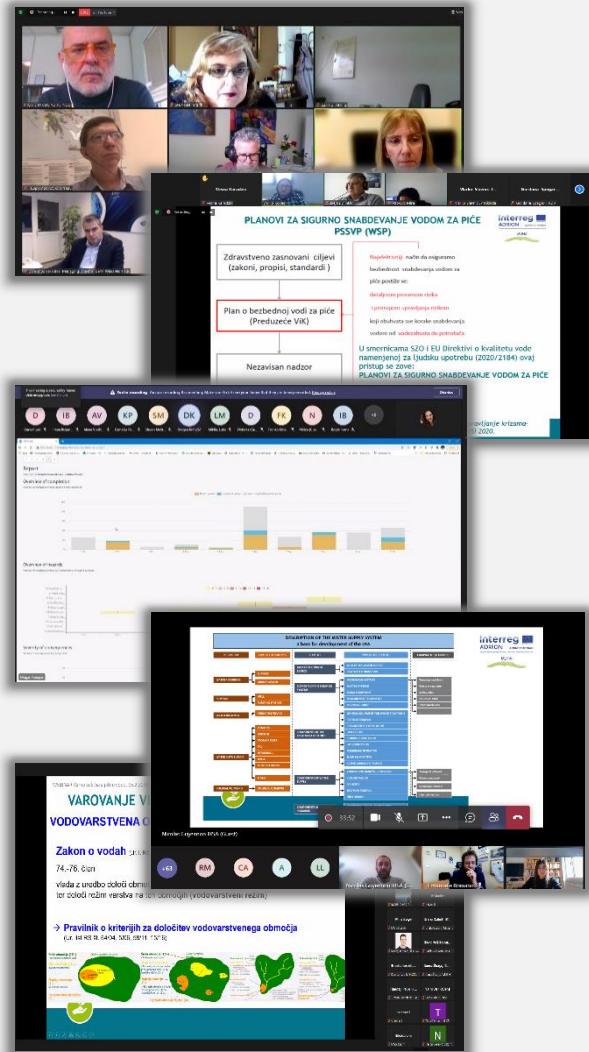
muha.adrion@fgg.uni-lj.s

THE CONTRIBUTION OF THE STAKEHOLDERS AND GENERAL PUBLIC

During the fifth period of the MUHA project through the communication part, the [five national webinars were organized](#). The main goal of the webinars was to share knowledge and experiences of the WASPP - DSS tool and UNAS networking site. The tool guides the users through the implementation of a robust and effective water safety plan following the step-by-step procedure suggested by the World Health Organization (WHO, 2009). As well as, a brief overview of the Water Safety Plans and European water directives was included in the agenda of the webinars. The water utilities, as the main target group were involved during the session „Q&A” to contribute in the discussion related to the implementation of the improved Water Safety Plans.

The link of the general structure of the WASSP-DSS named „How to prepare Water Safety Plan”:

<http://muha.apps.vokas.si/home>



FINAL CONFERENCE

The 9th of November, 2022
M Hotel Ljubljana, Slovenia

The MUHA is approaching the end of the project. Therefore, we are inviting you to participate in the final meeting when we will summarize all activities as well as present findings and tools!



For more information and updates, please visit the [MUHA webpage](#)!



Participation at the conference is free, but [registration](#) is required. The deadline for registration is the 2nd of November 2022.

Project figures



Duration

03/2020 - 12/2022



Partnership

10 PPs/13 ASPs



Budget

2.396.858,00 €

Lead partner
Emanuele Romano



Lead Institution
National Research
Council of Italy (CNR)



Communication manager
Jasmina Lukač Reberski



Find out more



<https://www.facebook.com/MUHA-Multihazard-framework-for-water-related-risks-management-112051893842167>



<https://www.linkedin.com/company/54302607/admin/>



<https://www.researchgate.net/project/Multi-hazard-framework-for-water-related-risks-management-MUHA>



National Research Council of Italy



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