

DAREnet



Practitioner
Network to
Strengthen
Flood Resilience
in the Danube
Region

Public Report

Practitioner initiatives for innovating flood response in the Danube River Region

Based on internal project deliverable
D6.2 Portfolio of RDI Initiatives



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 740750.

darenetproject.eu

Executive Summary

This deliverable presents the practitioner initiatives results derived from the 1st Call for Initiatives which was set up for the first cycle of the Research, Development and Innovation (RDI) Roadmap. The Call site and submission facility for the Practitioner Initiatives has been made available to the public at the beginning of March 2019, on <https://ec.europa.eu/eusurvey/runner/DAREnet-practitioner-initiatives>.

This 1st Call was directed to organisations/institutes active in flood response or management, inviting their practitioners to formulate and develop RDI Initiative Concepts according to the topics identified in first RDI roadmap (see DAREnet Deliverable D1.1), but also to their needs and addressing key-challenges in the Danube region. The aim of this first Call was to collect and review practitioners' initiatives and compiling them in a unique portfolio of joint innovation concepts for the Danube River region. The lead authors of these initiatives were practitioners, formulating and developing their ideas with the support of the DAREnet network. Finally, all submitted initiatives have been compiled in the present Practitioner Initiatives Portfolio and short descriptions/abstracts of the proposed initiatives will be spread to the DAREnet Community in order to promote broadest possible uptake in the Danube region and beyond.

In this first cycle we have received 11 contributions from different stakeholders including organisations operating in the field of civil protection, and other stakeholders from industry, research and academia. 10 of them have been included as Practitioner Initiatives, whereas one is touching activities in the next roadmapping cycle and will be fully included in the updated version of the Portfolio of RDI Initiatives (cf. D6.4, due in August 2020 / M36).

Table of Contents

Executive Summary	3
1. Research and Innovation for Practitioners, by Practitioners.....	8
2. Report on the 1st Practitioner Initiative Portfolio	10
3.1 Promotion actions.....	10
3.1.1 Practitioner Initiative Portfolio report.....	10
3. Presentation of the Practitioner Initiatives.....	10
3.1. Prevention and alert of flash flood emergencies and dam failure	11
3.2. Social media and games for enhanced preparedness and resilience	11
3.3. Cross-border tandem partnerships to strengthen flood response	11
3.4. Future technologies	11
4. Outlook: the next DAREnet cycle	22
5. Conclusions	22
6. References and Glossary.....	23
7. Administrative Information	24
The DAREnet Consortium	26

1. Research and Innovation for Practitioners, by Practitioners

DAREnet is about seeding and incubating concrete innovation initiatives and to give them chance to find the support and resources required to realise them.

The present document is the first compendium of practitioner-driven innovation initiatives formulated on the basis of the basis of the DAREnet Reserach, Development and Innovation (RDI) Roadmap, linking them to the key-challenges in the Danube region. The initiatives shall demonstrate the practical relevance of the Roadmap and create a strong link between the work on the ground and in the project.

The lead authors of these initiatives are practitioners, experienced in flood response, formulating and developing their ideas with the support of the DAREnet network. The practitioners used the unique opportunity to sketch their initiatives in short concept papers. The process is open without restrictions to all practitioners in the Danube River Region. A warm "thank you!" to all of them you took the time and effort to elaborate their ideas.

The initiatives are an essential outcome of DAREnet project, representing a unique portfolio of concrete opportunities to improve flood resilience effectively. This document shall give them visibility and will hopefully trigger innovation activities across borders and disciplines. More to come in the future, with still 3 DAREnet Innovation cycles to go!

Figure 1:
The DAREnet Roadmapping cycle

In the present deliverable is presented the results derived from the 1st Call for Initiatives (i.e., Portfolio of RDI Initiatives) which was set up for the first cycle of RDI Roadmap.



2. Report on the 1st Practitioner Initiative Portfolio

2.1. Promotion actions

Regarding the 1st Call and the main result driven by this (i.e., Portfolio of RDI Initiatives), a series of promotional actions were undertaken including:

- DAREnet meetings, scientific and political events (forums, round tables, conferences, workshops etc.);
- Regional meetings coordinated by the DAREnet National Contacts (DNC) with representatives of relevant institutions and organizations in each partner country;
- E-mail messages and phone calls to DNCs and relevant practitioners;
- Promoting the Call via media and social media platforms.

Especially face-to-face contact between the practitioners and the members of the DAREnet Consortium was a great opportunity to exchange of innovative ideas and have been proven to be the best approach in order to achieve this (see Figure 2).



Figure 2: Promotion of the DAREnet Project within scientific events (left, 8th Edition of the EUSDR Annual Forum, Bucharest, Romania; right, 1st DAREnet Community Forum, Budapest, Hungary)

2.2. Practitioner Initiative Portfolio report

For this 1st Call, practitioners covering a large number of countries in the Danube River Basin have been invited to formulate and develop RDI Initiative Concepts according to the topics identified in first RDI roadmap.

The 1st Call for Practitioners Initiatives was launched within the 1st DAREnet Community Forum held in Budapest, Hungary at the end of February, 2019. Shortly after the event, the call site and submission facility for the Practitioner Initiatives, including instructions for practitioners, the main topics of interest, the submission deadline and a common template (see Annex 1), has been made available to the DAREnet community at the

beginning of March 2019, and could be accessed at <https://ec.europa.eu/eusurvey/runner/DAREnet-practitioner-initiatives>.

In this first cycle we have received 11 contributions from different stakeholders, belonging to 6 of the 19 countries from the Danube River Basin, as seen in the graph below.

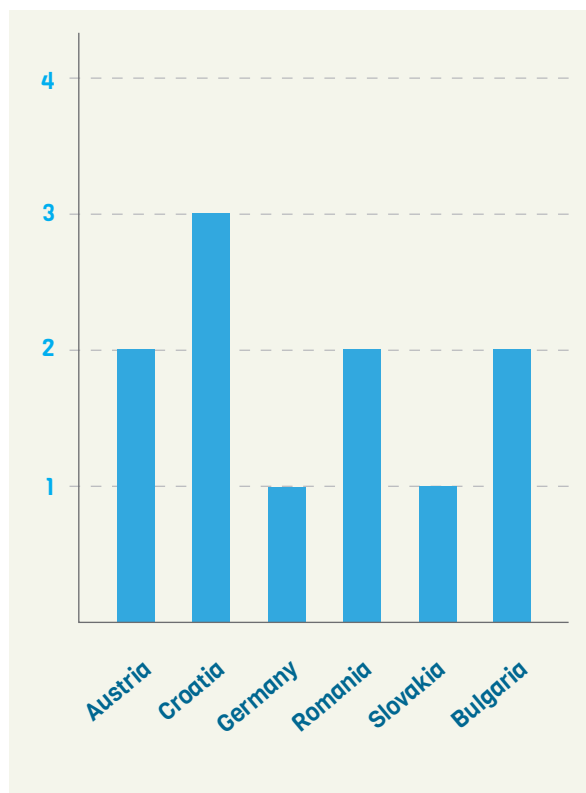


Figure 3: Distribution of RDI initiative per countries

10 of them have been included as Practitioner Initiatives in section 3 of this document, whereas one is touching activities in the next roadmapping cycle and will be fully included in the updated version of the Portfolio of RDI Initiatives (cf. D6.4, due in August 2020 / M36).

The practitioners who have developed their initiatives belong to organisations operating in various fields, including civil protection, industry, research and academia. Generally, the basic concepts addressed in these initiatives aimed at closer cooperation between the units and/or actors involved in the field of flood-disaster management (mainly between EU and non-EU countries), but also innovative solutions in terms of alerting and preparedness of people in case of disaster events.

3. Presentation of the Practitioner Initiatives

The Practitioner initiatives presented below have been grouped into 4 thematic areas by the authors. This shall provide a better general overview of the initiatives, but also emphasise potential coherences and synergies between different initiatives:

- Alert of flash flood emergencies and dam failure
- Social media and games for enhanced preparedness and resilience
- Cross-border tandem partnerships to strengthen flood response
- Future technologies

The Work Package Leader together with the Coordination Team will evaluate potential synergies and possibilities of cooperation between the individual initiatives. The Work Package Leader and the DAREnet Coordination Team will provide advice and support the contributors in further developing their ideas.

3.1. Prevention and alert of flash flood emergencies and dam failure

INITIATIVE 1 FLASH ALERT - FLASH floods monitoring and alert NET

Contributor	SYSWIN SOLUTIONS S.R.L.
Organisation type	Industry
Country	Romania
RDI Topic(s) addressed	Civil Protection Methods, Procedures and Technology
Initiative description	
Early disaster alert system could give people enough time to evacuate and protect from a potential danger in case of a fast-extreme event. In this context, the development of an innovative early-alert systems could be considered as successful solutions in the fight against losses caused by flash-floods events. FLASH FLOODS ALERT on-line monitoring is a detection technology platform, using specific sensors. FLASH ALERT Sensor Networks will use calculations to provide real-time results of the flash-floods parameters. Large range of smart sensors will include sensors to measure the amount of rain, the water level in the valleys and the water velocity. Sensors node gather all the information and process it to the controller, in order to determine the arrival time of the pick discharge, affected zone and the danger degree of the disaster which could be sent to people and to the civil defense.	
Main objectives of the initiative	
<ul style="list-style-type: none">• To develop a real time, wireless detection technological platform in order to monitor the water levels;• To develop an early flash-flood warning system;• To develop and implement FLASH ALERT Sensor Networks, to predict torrents and flash flooding events and provide real-time results (flood parameters, flood maps).	

INITIATIVE 2 Flash Floods: Special marking indicating the river floodplains

Contributor	National Association of Volunteers in the Republic of Bulgaria
Organisation type	NGO/Volunteer organisation
Country	Bulgaria
RDI Topic(s) addressed	Resilience of Citizens, Civil Protection Methods, Procedures and Technology

Initiative description

The challenge addressed by this proposal is how to cope better with the flash floods in urban, suburban and why not out of the urbanized territory. The proposed solution is simple, but useful. Similarly, with the marking of the paths in the mountains it is possible to be created a special way of marking of the potential danger zones nearby the riverbeds. In case of potential risky situation all the people will now where is the danger zone and will leave (or avoid entering in) it. The expected result will be well informed population which will be better prepared to protect itself in advance in case of flash-flood events. This is a prevention activity, but also in case of emergency the rescue units will know where the limits of the real threat are.

Main objectives of the initiative

- Cost-efficient warning system tailored to flash floods
- Better information of the population, enabling better resilience of citizens against flash floods

INITIATIVE 3 A system for alerting the population

Contributor	National Association of Volunteers in the Republic of Bulgaria
Organisation type	NGO/Volunteer organisation
Country	Bulgaria
RDI Topic(s) addressed	Resilience of Citizens

Initiative description

The challenge addressed with this proposal is to increase the people awareness in case of dam failure. Different approaches are possible, but the simplest and probably the cheapest is a special alerting system to be installed. The proposed solution is just few horns in a row along the riverbed to inform the people that the wave is coming. By using this system people will know that they must careful and to protect themselves. The expected result is to reduce the number of unexpected accidents. By doing this, unnecessary casualties and engaging rescue teams will be avoided.

Main objectives of the initiative

- N/A

3.2. Social media and games for enhanced preparedness and resilience

INITIATIVE 4 Team Österreich for “Team Danube”

Contributor	Austrian Red Cross
Organisation type	NGO
Country	Austria
RDI Topic(s) addressed	Civil Protection Methods, Procedures and Technology
Initiative description	
<p>The Team Österreich app is a digital hub for preparing for, alerting and helping in the event of a crisis. Functions such as an interactive preparation assistant, pinpointed alert in the event of a disaster or the ability to help locally or online will make one's life safer and optimally network existing helpfulness.</p>	
Main objectives of the initiative	
<ul style="list-style-type: none"> • To develop a Team Danube App with Team Österreich know how 	

INITIATIVE 5 Raising young people's awareness on preparedness and self-protection – YAPS

Contributor	Austrian Red Cross
Organisation type	NGO
Country	Austria
RDI Topic(s) addressed	Resilience of Citizens
Initiative description	
<p>The challenge addressed with this proposal is to increase the people awareness in case of dam failure. Different approaches are possible, but the simplest and probably the cheapest is a special alerting system to be installed. The proposed solution is just few horns in a row along the riverbed to inform the people that the wave is coming. By using this system people will know that they must careful and to protect themselves. The expected result is to reduce the number of unexpected accidents. By doing this, unnecessary casualties and engaging rescue teams will be avoided.</p>	
Main objectives of the initiative	
<ul style="list-style-type: none"> • N/A 	

INITIATIVE 6 Risk Land Board Game

Contributor	Ministry of Interior, Civil Protection Directorate
-------------	--

Organisation type	Governmental organisation
-------------------	---------------------------

Country	Croatia
---------	---------

RDI Topic(s) addressed	Resilience of Citizens
------------------------	------------------------

Initiative description

This initiative is intending to help children to learn about multi-hazard disaster preparedness and prevention through educational board game. They have the opportunity to identify the risks themselves in their environment and become more prepared in the event of natural disasters.

Main objectives of the initiative

- Education of the youth with regards to disasters and how to prepare and prevent from them

3.3. Cross-border tandem partnerships to strengthen flood response

INITIATIVE 7 EU for Better Civil Protection in Bosnia Herzegovina

Contributor	Ministry of Interior, Civil Protection Directorate and Association for Risk Management
-------------	--

Organisation type	Governmental organisation, NGO
-------------------	--------------------------------

Country	Croatia and Bosnia-Herzegovina
---------	--------------------------------

RDI Topic(s) addressed	Civil Protection Methods, Procedures and Technology
------------------------	---

Initiative description

This initiative aims to increase the resilience to natural and technical-technological disasters at all levels in Bosnia and Herzegovina, as neighbouring country, with emphasis on inter-institutional/-organisational and transboundary cooperation and enhanced civil protection capacities in the areas of prevention, preparedness and response.

Main objectives of the initiative

- To respond more effectively to disasters
- To implement the risk assessment approach in preparedness plans in order to increase the resilience to natural and man-made hazards

INITIATIVE 8 Strengthening of cross-border capacity and coordinated reactions of civil protection between EU and non-EU border countries, in the Danube basin

Contributor Babes Bolyai University

Organisation type Academia and research

Country Romania

RDI Topic(s) addressed Civil Protection Training

Initiative description

This initiative aims to strengthen the cross-border cooperation between civil protection practitioners from external borders of the EU and those from EU countries, in the same river basins, by developing of cross-border capacity of rapid reaction of civil protection in order to better manage of cross-border potential floods and non-floods disasters.

Main objectives of the initiative

- To develop a cross-border civil protection cooperation by creating a common action plan;
- To develop a cross-border civil protection interoperability by creating a locally coordinated cross-border group;
- To develop a cross-border capacity building in emergency preparedness by participating in common training exercises.

3.4. Future technologies

INITIATIVE 9 Development of an improved multifunctional pontoon-boat

Contributor	Federal Agency for Technical Relief
Organisation type	Governmental organisation
Country	Germany
RDI Topic(s) addressed	Civil Protection Methods, Procedures and Technology
Initiative description	
<p>The main objective of the project is to develop a new multifunctional pontoon boat (PoBo) system that is explicitly designed to fulfil the specific requirements of modern water-threats related emergency response and civil protection organisations.</p>	
Main objectives of the initiative	
<ul style="list-style-type: none"> • To identify realistic and relevant utilization scenarios; • To derive a list of specific technical criteria and needs for the new PoBo; • To develop a modern multifunctional PoBo, which fulfils the specific needs of the using organization /practitioners; • To implement modern training-/ qualification solutions using VR-/ AR- technologies; • To integrate relevant and experienced practitioners during the whole process. 	

INITIATIVE 10 GDİ Ensemble FloodSmart - Development of an IT platform for flood prevention and mitigation of environmental damage

Contributor	GDİ and Croatian Geological Survey
Organisation type	Academia and research
Country	Croatia
RDI Topic(s) addressed	Civil Protection Methods, Procedures and Technology; General Data Management
Initiative description	
<p>This is a project for the development of an IT platform for flood risk management and environmental mitigation called GDİ Ensemble FloodSmart, wanting to create a unique system in the world, whose software solutions will integrate all segments relevant to decision-making in flood risk management. The main tools/methods of this solution are</p>	
<ul style="list-style-type: none"> • Interactive information update and real time data; • integration of different sensors (measuring sensors on watercourses, meteorological sensors, etc.); • flood risk modelling; • situational reports; • information about resources, techniques and timeframe for implementation of flood defence measures. 	
Main objectives of the initiative	• N/A

3.5. Outlook: the next DAREnet cycle

Trainings (focused on cooperation of different units)

Contributor	ISEMI and Ministry of Interior of the Slovak Republic
-------------	---

Organisation type	Private company, governmental organisation
-------------------	--

Country	Slovakia
---------	----------

RDI Topic(s) addressed	Civil Protection Training
------------------------	---------------------------

Initiative description

This initiative starts from the challenge of deficient cooperation of different units during the response phase in case of natural disaster.

Innovative aspects related to this initiative are:

- using cutting-edge technology,
- modern approaches,
- involvement of findings from RDI projects,
- format of action in standardized way while meeting the requirements of specific units at the same time,

Expected result is development of training based on field exercise action including above mentioned aspects and execution of this training.

Main objectives of the initiative

- To know and understand the specific procedures;
- To know what the capacities of related subjects are;
- To know the conditions for use of these capacities;
- To build personal relations between related subjects.

4. Conclusions

Along with the RDI Roadmap, the RDI Initiative Portfolio is one of the key-deliverables of the DAREnet Project. This Portfolio of open and practitioner-driven RDI Initiatives could provide credible solutions for high-impact innovation for making innovation available to practitioners in all participating countries and for exploring the development of common capabilities for the Danube river region. This Portfolio also could offer large development opportunities for practitioners:

- bringing interested parties together, to form consortia;
- jointly explore possibilities for the development of common capabilities;
- making innovation available to practitioners in all participating countries;
- improving flood-resilience effectively.

This kind of approach (i.e. RDI Initiatives) also offers a way to more effective and flexible development in the future less predictable environment and could ensure the improving of flood risk management by aligning these initiative ideas with the future strategic directions in the field.

Beside in this first cycle the practitioners was a little reluctant about this idea, it is hoped that for the future roadmap cycles the results will improve substantially. To better approach this, a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was performed, in order to understanding where we are doing well and where we could improve the process for the next cycles (Table 1).

- Network infrastructure and logistic support provided by DAREnet Consortium for initiative development and potential derived project related to initiatives
- Generally strong EU support for practitioner driven RDI initiatives
- A lot of promotional activities were undertaken including DAREnet meetings, regional meetings coordinated by DNCs, e-mail messages and phone calls to DNCs and relevant practitioners, and promotion of the Call via media and social media platforms
- Good results derived especially face-to-face contact with practitioners

- Difficulties of DNCs in involving practitioners although there were a lot of promotional activities
- Challenges around misunderstanding of concepts such as RDI initiative
- Practitioners did not understand the benefit that the initiatives bear for them and thus little motivation for development of their own initiatives
- Small number of practitioners able to develop their ideas and/or English speakers (especially in developing countries)
- Underdeveloped research capabilities for RDI initiatives in of a lot of organizations. Mainly the practitioner's organizations are focuses on service provision. Innovation culture is rather low in case of many organizations
- Wrong perception of some practitioners that the initiatives is hard to be developed and exceeds their capabilities

Strengths Weaknesses

Opportunities Threats

- Increasing the cooperation between DNCs and potential provider initiatives
- More face-to-face individual meetings with practitioners
- Exploring more opportunities to involve other potential providers (mainly in case of industry solutions and NGOs)
- Exploring more opportunities from the Danube countries that are not part of our networks
- Exploring the possibilities of open innovations together with the practitioners
- Providing more details on the initiative requirements (e.g. by setting out an example for the next Call)
- Generally, the specific actors are well known and it's about addressing adequately a large diversity of the organizations (civil protection, policy makers, industry, NGO's, academia, institutions etc.)

- No financial support for practitioner initiatives
- Low availability of practitioners. Many well-prepared practitioners are busy and/or are not really interested to do this
- Persisting low level of practitioner motivation for development of their initiatives as benefits are not well understood.
- Some partners have a lower level of cooperation experience
- Increased competition in the innovation research area. Practitioners/ Organizations have low interest in providing their good research ideas
- Practitioner interest about the protection of intellectual properties
- Partner coming from the non EU15 and especially those coming from non-EU show an overall low-quality RDI environment

Glossary

*** EC, 2005, EUR 21623, Communication for the European Commission, - More Research and Innovation: A Common Approach, Luxembourg: Office for Official Publications of the European Communities, 28 pp.

***EC, 2018, Driving Progress for Research and Innovation in Europe: The potential of R&I foundations, European Commission, Directorate-General for Research and Innovation, Written by the Expert Group on “Foundations, Venture Philanthropy and Social Investments”, Luxembourg: Publications Office of the European Union, 73 pp

Abbreviation / Acronym	Description
DNC	DAREnet National Contact
EUSDR	EU Strategy for the Danube Region
NGO	Non-Governmental Organisation
PoBo	Pontoon boat
RDI	Research, Development, Innovation
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TWG	Topic Working Group

Administrative Information

Grant Agreement no.	740750
Call identifier	SEC-21-GM-2016/2017
Project full title	DAREnet – DAnube river region Resilience Exchange network
Author	Viorel Arghius (APELL) Alexandru Ozunu (APELL)
Contributors	Christian Illing (THW) Andreas Schweinberger (ARTTIC) Balazs Kern (ARTTIC)
Coordinator Contact	Federal Agency for Technical Relief (THW) Christian J. Illing project.darenet@thw.de
Management Team	ARTTIC Balazs Kern, Andreas Schweinberger darenet-arttic@eurtd.com
Website	www.darenetproject.eu

Important notice

This deliverable is currently under EC review.

Disclaimer

The opinions stated in this document are the result of the collaborative work within the DAREnet project consortium and are not necessarily in-line with the innovation strategies and aims of the individual organisations involved.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 740750.

The DAREnet Consortium



Federal Agency for
Technical Relief



International Commission for the
Protection of the Danube River



Austrian Red Cross



International Security and
Emergency Management
Institute



Hungarian Civil Protection
Association



Civil Protection Directorate,
Ministry of Interior



Sector for Emergency
Management, Ministry of
Interior



APELL National Center for
Disaster Management



ITTI



Fire Safety and Civil
Protection Directorate General



Faculty of Security Studies,
University of Belgrade



German Aerospace Center



City of Geel



ARTTIC



National Association of
Volunteers in the Republic of
Bulgaria