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DAREnet

D4.7 – 4th Workshop of Topic Working Groups

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Abstract: This deliverable contains a brief, concise summarization of the fourth cycle of Topic Working Group (TWG) Workshops in the DAREnet EU project. In this cycle the project aims to identify and discuss barriers as well as enablers in flood response and flood management together with practitioners with respect to “standards” and “procedures”.

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Glossary

Abbreviation / Acronym	Description
DNC	DAREnet National Contact
Dx.y	Deliverable
KB	Knowledge Base
RDI	Research, Development, Innovation
TWG	Topic Working Group
VOST	Virtual operational support team
ILEAnet	Innovation by Law Enforcement Agencies networking
iLEAD	Innovation – Law Enforcement Agencies Dialogue
CMINE	Crisis Management Innovation Network Europe of the Driver+ EU project

1 Executive Summary

This report presents the results of the fourth cycle of the Thematic Working Group (TWG) workshops and discussions in the framework of the EU DAREnet project. This cycle focused on current and possible future gaps and challenges as well as solutions and enablers related to “standards” and “procedures” in flood response and flood management.

In contrast to the third cycle, it was possible to integrate the current TWG workshops into two hybrid events and one online event organised by partners from the DAREnet consortium. This allowed overcoming a major shortcoming of the previous third cycle, which was the lack of involvement and active discussion and knowledge sharing with the practitioners during purely virtual workshops. Accordingly, the diversity as well as the quantity of opinions and views received on the aforementioned challenges and solutions rapidly increased.

In general, it was found out from the discussions during the workshop that the reconciliation and agreement as well as the mandatory use of standards for the exchange of information in operations is a key factor. This applies for cross boarder operations as well as for the interaction of authorities at different national levels in disaster management and flood responds. Here, improvements in training for such information exchange have been seen as a major gap throughout all countries in the Danube region. Furthermore, procedures to raise the level of preparedness of the general public have been identified as a gap that needs more attention.

In the follow-up of the fourth DAREnet TWG Workshop the next steps will include the finalisation of the analysis of all discussions held with the practitioners during the three workshops. From this, innovation opportunities will be derived and handed over to the next step in the DAREnet Roadmapping cycle, where the identified results will be taken up by the Innovation Assessment done in WP5.

2 Introduction

The DAREnet project aims at strengthening flood resilience in the entire Danube river region. Therefore, practitioner's needs and knowledge are collected and analysed in so-called Topic Working Groups (TWG) to form the basis for a Research, Development and Innovation (RDI) Roadmap and a portfolio of RDI Initiatives. The RDI Roadmap aims at shaping future research and innovation policies for the Danube region as well as accompanying research programmes implementing them. Specifically, the RDI Roadmap will foster innovation opportunities that:

- Name practitioner needs and gaps experienced in the daily practice of flood management,
- Significantly improve nowadays flood management and/ or enable practitioners to cope with upcoming flood events (e.g. due to climate change),
- Comply with regional strategies for flood prevention and risk management,
- Create synergies with modules and facilities of the European Civil Protection Mechanism (EUCPM),
- Strengthen exchange and collaboration between practitioners beyond borders and different disciplines,
- Have a promising perspective for industrial exploitation and market entry.

The RDI Roadmap itself is the outcome of the identification, assessment and prioritization of potential innovations as well as requirements and gaps in an iterative process. This process starts with formulating the most critical challenges in certain domains of flood management in the Danube region. From these challenges specific RDI Topics are derived, each covering a relevant field or source of innovation (cf. D1.1 DAREnet Challenges & RDI Topics).

This work is continuously updated over a course of four cycles within the DAREnet project. During each cycle, practitioners and other stakeholders bring forward and discuss potential solutions and enablers for innovating flood management with respect to a specific RDI Topic in the Topic Working Groups. The discussions are fed with information about innovative solutions from the industry, research and best practices. In a following step, identified innovation opportunities are taken up by the Innovation Assessment (cf. WP5 of the project) to benchmark the relevance of each innovation for practitioners from a holistic perspective.

The first cycle of Topic Working Groups Workshops had a rather broad scope and addressed diverse but more general problem domains of crisis management. The Topic Working Groups consisted of consortium members and practitioners of different command levels. The discussions were led by experienced disaster management practitioners and scientists. However, no uniform scenario of a fluvial flood situation was used, from which concrete and comparable tasks and thus needs, gaps or already known solutions could have been derived. For these reasons, the outcomes of the first cycle showed a rather higher variance. Thus, the first cycle could not optimally support the overall analysis of the resulting information content and the derivation of comparable key findings for the subsequent work packages in the DAREnet Roadmapping process.

Based on these experiences, the second cycle followed a different approach: To narrow down broad discussion in diverse fields of crisis management right at the start, the framework of the second cycle was formed by a realistic flooding scenario. This scenario features different levels of escalation for a fluvial flood situation. It covers the entire crisis management cycle and clearly defines underlying tasks and challenges. Furthermore, as a second condition for this DAREnet Roadmapping cycle, it was agreed to focus exclusively on aspects of "training" in the branches "Coordination, Command and Control", "Alerting and Communication", "Rescue Operations and Emergency Measures" and "Logistics and Assistance". As a final condition, it was agreed that the majority of the participants in the Topic Working Groups should

be formed from external disaster management practitioners at a lower operational command level.

The scenario was introduced to practitioners and stakeholders from different countries in the Danube region in form of a webinar, accompanied by a questionnaire to collect practitioners' views on the potential for innovation in terms of "training" in the specific sub-areas of crisis management mentioned above. The findings from this questionnaire were discussed in-depth during a two-day workshop on 24 – 25 Sept. 2019 at "ÖRK Lagezentrum" in Vienna/Austria. In this workshop, groups of practitioners from different domains, organizations and countries discussed, assessed and finally ranked gaps, requirements and innovation potentials for "training" in the different sub-domains. In this way, the second cycle provided results of higher statistical significance compared to the first Roadmapping cycle. Moreover, the derived innovation opportunities were more specific and targeted towards the overall objective of strengthening flood resilience in the entire Danube river region.

The third cycle of TWG workshops was highly influenced by the Covid-19 lockdown, its unforeseeable timeline and ongoing restrictions. These circumstances made face-to-face workshops with practitioners unlikely at an early stage. Therefore, the consortium decided to conduct a series of online workshops on the topic "equipment & technology" for different sub-topics of flood response and flood management. In preparation of these online workshops, a SWAT analysis of the previous two cycles was conducted. The main findings from this analysis were:

- The approach of introducing a specific scenario in the context of a webinar and in combination with a questionnaire worked well in the second cycle and resulted in a significant improvement over the first cycle.
- Not all sub-topics of disaster management are equally relevant for the scope of flood response and flood management. The range of topics was considered as too broad. For a number of sub-themes this only leads to generic results.
- With regard to the scenario-based approach, there is, however, still potential for further improvements: To focus more on flood response and management, the scenario is divided into smaller, single-layered sub-parts with more specific tasks and challenges. These sub-scenarios can be discussed and analysed in more detail.
- The quality of the contributions is still rather heterogeneous, even if the number of external experts has increased. A better moderation of the discussions is aimed for. If necessary, a more active effort will be made to bring the discussion back to the flood management aspects.
- Language barriers are a serious problem in a number of countries. In result, they reduce the total amount of contributions as well as they may introduce a bias in the contributions. In the DNC, even more efforts need to be made to reach the respective national practitioners and to increase their commitment to provide inputs and answer the questionnaire.

One possible solution was to translate the most important parts of the scenario and the questionnaire as well as the preliminary results from them into the respective national languages and to make them accessible to local practitioners.

However, this attempt to promote a discussion in all regions of the Danube Region was not as successful as expected. Therefore, for the current fourth cycle of TWG workshops, the DAREnet project tried to take advantage of the relaxation of COVID-19 protection measures to get in direct contact with practitioners at on-site or hybrid events planned by DAREnet partners. These events were:

1. Virtual "Danube Flood Resilience Innovation Event" and Firefighter Expo held on 15 – 18 September 2021 in Budapest & Balatonföldvár, Hungary.
2. Workshop/Demonstration Exercise "Strengthening Resilience and Capacities of Floods Protection and Response Stakeholders – Good practices and Development" on

28 – 29 September 2021 at RACVIAC (28 September) and Camp Zagreb/Rakitje Lake (29 September) (ref. Figure 1).

3. German Conference on Disaster Risk Reduction, 25 – 26 October 2021, online.



Figure 1: Participants of the RACVIAC Workshop on 28 – 29 September 2021 in Zagreb/Croatia.

In this way, input from about 70 practitioners of different levels of experience, operational levels and types of organization were selected. By means of the following figures, this population of participants can be subdivided according to their:

- Nationality (Figure 2),
- Personal experience in flood and disaster protection (Figure 3),
- Type of organisation (Figure 4) and
- Command level (Figure 5).

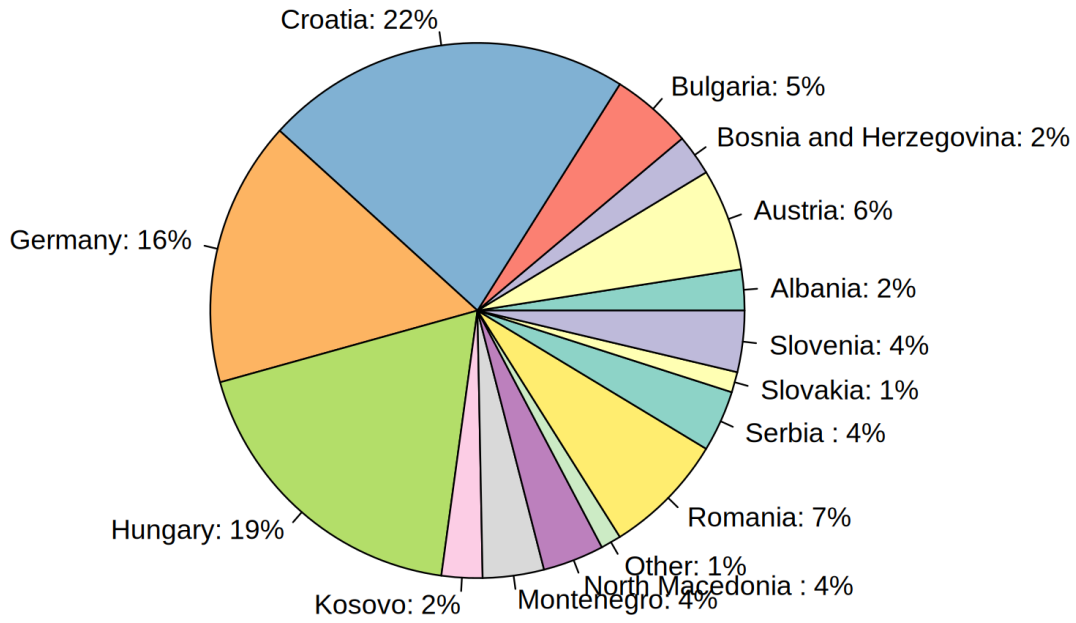


Figure 2: Origin/ nationality of the practitioners that contributes during the three events.

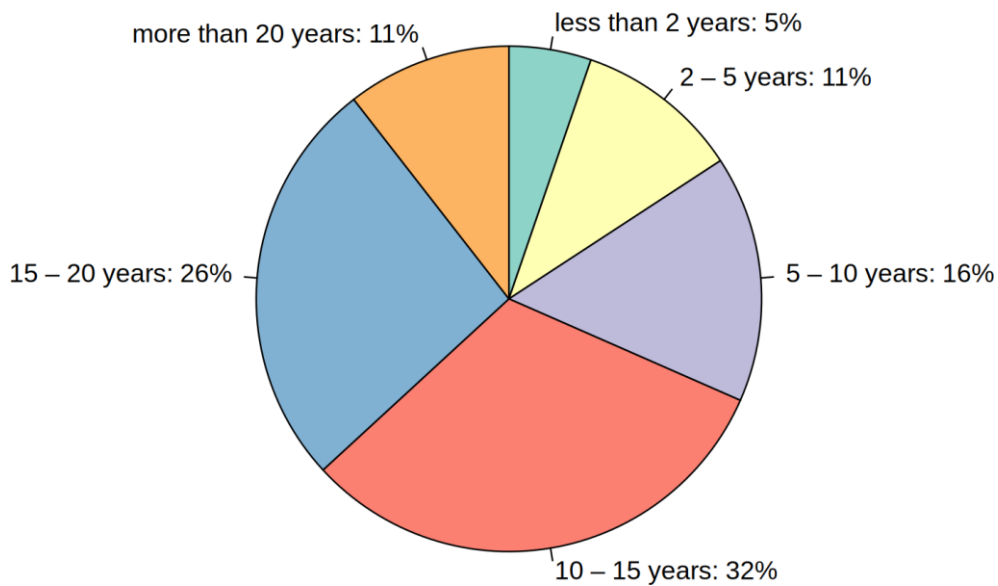


Figure 3: Level of personal experience in flood and disaster protection of the practitioners that contributes during the three events.

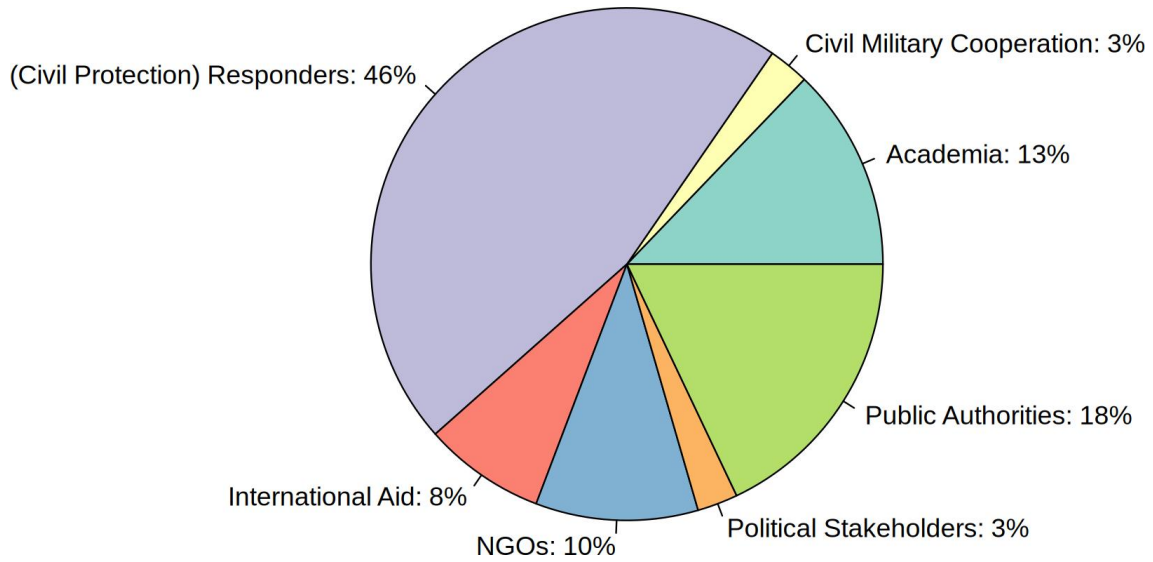


Figure 4: Type of organisation of the practitioners that contributes during the three events.

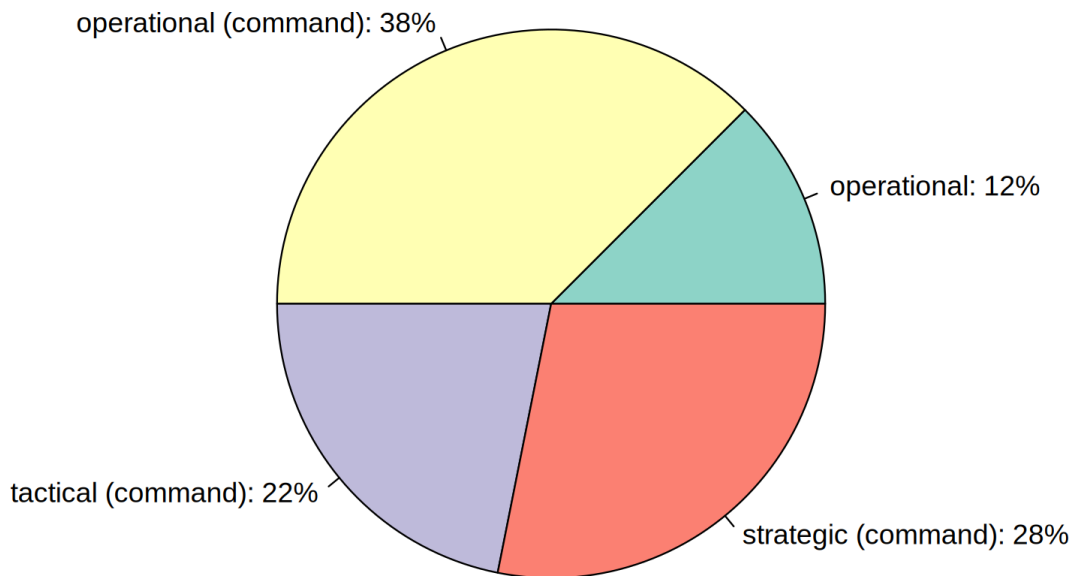


Figure 5: Distribution of command levels of the practitioners that contributes during the three events.

In order to comply with GDPR, the full participant list will not be provided.

3 Results from the forth DAREnet RDI Workshop

3.1 Content of the forth RDI Workshop cycle

As for the previous 3rd Roadmapping Cycle the preparation of the workshops at the three on-site/ hybrid events was managed by virtual meetings due to the ongoing COVID19 situation. In contrast to the previous cycles, the pre-selection of the relevant sub-topics was supported by external experts this time. A total number of 23 practitioners (including 15 external experts) filled out an online questionnaire, assessing the relevance of 22 areas of flood management in terms of “standards” and “procedures”, as shown in Figure 6.

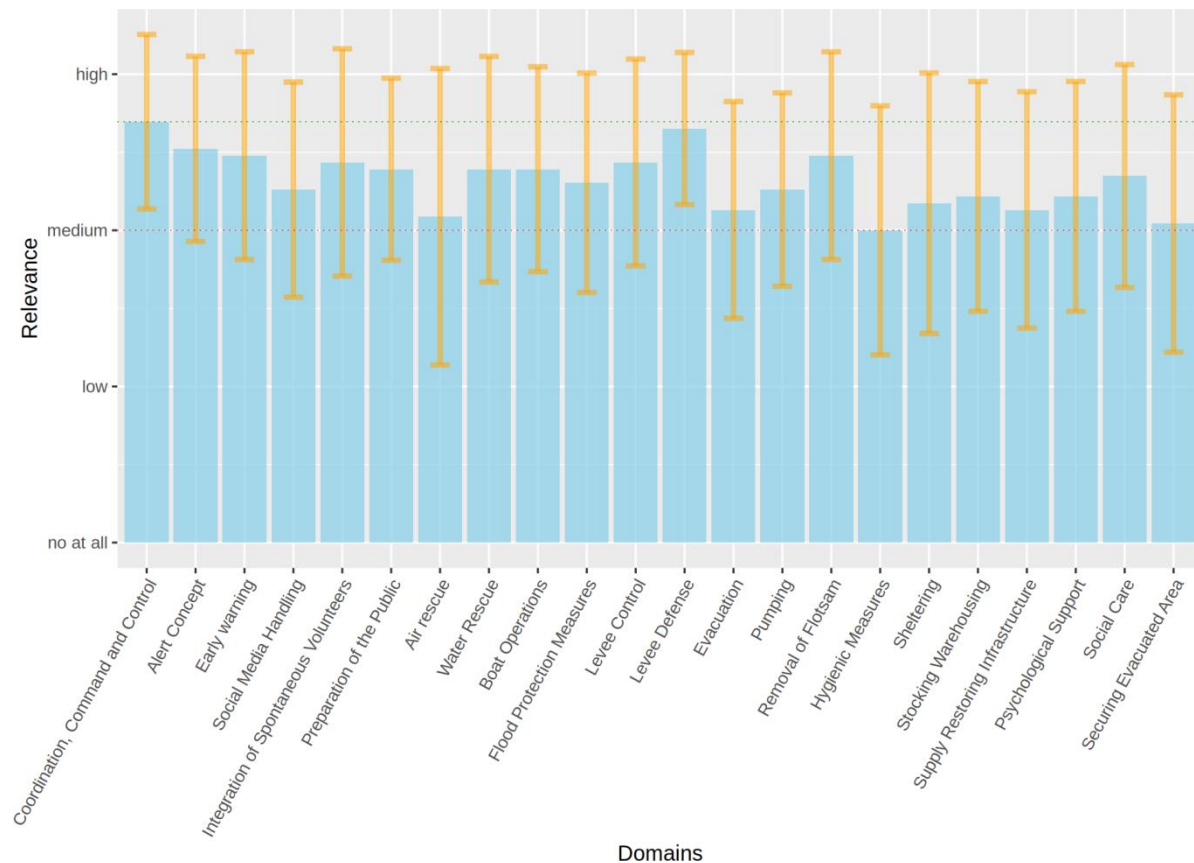


Figure 6: Relevance of Domains of Disaster Management regarding “standards” and “procedures”. Blue bars indicate the relevance; brown marks denote the variance of the input from the 23 experts.

Please note that lower values, e.g. for hygiene measures, only indicate that there is less need for further improvements regarding “standards” and “procedures”. This explicitly does not mean that there is generally little need for “standards” and “procedures” for a particular area of flood response. Higher scores indicate that the practitioners see gaps and the need for further improvement in the specific domain.

In general, the results are in line with the internal ranking of these domains of flood response, as presented in Table 1. The (internal and external) assessments deviate from each especially for the sub-domain “Coordination Command and Control”, which was considered as too generic internally.

Table 1: Summary of the project-internal assessment of all sub-topics of flood response in terms of “standards” and “procedures”.

Sub-topic	Relevance		
	A	B	C
Coordination Command and Control <i>(too generic, will not be considered any longer)</i>			
Alert Concept		++	
Early Warning	++		
Social Media handling	++		
Integration of spontaneous volunteers		+	
Preparation of the public (citizens)	++		
Air rescue			–
Water rescue			–
Boat operations			–
Flood protection measures		+	
Levee control			–
Levee defence		+	
Evacuation			–
Pumping operations		+	–
Removal of flotsam/ log jams			–
Hygienic measures		+	
Supplying	++		
Sheltering		+	
Stocking/Warehousing	++		
Supply/restoring infrastructure		+	
Psychological support	++		
Social care		+	

Sub-topic	Relevance		
	A	B	C
Securing evacuated areas		+	

However, external practitioners had seen the highest relevance (i.e. gaps and need for improvements) for this particular domain in terms of “standards” and “procedures”. This assessment was supported during the three workshops by very intensive discussions about “Co-ordination Command and Control”.

These sub-domains assessed so far were then combined into three groups: “CCC + Alerting + Information”, “Rescue Operations + Flood Protection” and “Supporting Actions”. In this way, a thematic framework was to be created in order to be able to discuss all essential aspects in the limited time of the workshops and to collect input from the practitioners.

3.2 Report on the Topic Discussion: “CCC + Alerting + Information”

3.2.1 Most relevant factors

From the discussions with the practitioners during the three workshops, the following factors were identified as most relevant with regard to “standards” and “procedures” for the field of Coordination, Command and Control, Alerting and Information:

- Mandatory use of standards for information exchange in operations:** There were numerous examples of cross-border operations, but also of national or regional operations involving different (levels of) authorities that were impeded by suboptimal information exchange. Language barriers were the decisive factor in very few cases and can be mitigated by the coordination of a liaison officer. (Excising) standards and tools such as NATO NICS are not applied. In general, there is a lack of joint training. Therefore, the exchange of information is not given enough weight in exercises.
- Interpretation of information + thresholds regarding local circumstances (for professionals and general public):** Much information is available from direct measurements or forecasting models/ simulations, etc. This results in a high number of alarms that may or may not have any local/ regional impact. Generally, a lack of experience can be found in the assessment/ interpretation for such warnings regarding local circumstances throughout the Danube.
- Level of preparedness/ training/ education of local population:** Early warning is only effective if the preparedness of the affected population has reached a sufficient level. Otherwise, people cannot follow instructions properly, lose too much time or don't even have trust in warning provided. Key factors for raising preparedness were seen in covering all age classes and a special consideration of local circumstances/ threats.
- Reliability of crowd sourced information (from social media):** In case of floods, a lot of information is shared via social media. However, to complement the situational picture of emergency forces, this information has to be filtered to avoid e.g. fake news and misleading information. Therefore, a “link” should be established in advance with those who provide such information, e.g. via an APP. Furthermore, a rating of the information provided (e.g. 1 to 5 stars) could be introduced to raise the level of trust in the mid-term.
- Assurance that high-priority tasks are really done:** This is a question of “official” task distribution and resource management of “law enforcement agencies”.

When assigning task to, e.g. spontaneous volunteers, they need to be informed about the priority of tasks. Mission control needs to track, whether high-priority tasks are really done at first.

- **Integration of SVs in organisational strictures of rescue organisations:** In most disaster situations, there is very quickly high numbers of spontaneous volunteers, but no real integration/ adjustment with “professionals”. Thus, parallel structures are built up, resulting in conflicts, misunderstandings and lack of motivation of volunteers. Special coordination of spontaneous volunteers is needed.

3.2.2 Possible/ known countermeasures

- Training on right interpretation of data and adoption to local environment
- Consideration of local (geographic, hydrologic, etc.) circumstances
- Closer “connection” to spontaneous volunteers beforehand to increase trust and reliability → create filters for information
- Set-up of “reception” structures for a better integration of spontaneous volunteers

3.2.3 Recommendations to decision makers

- Consideration of (standardized) information exchange in joint trainings
- Education programs and awareness for different age groups (children up to old age) starting at primary school with strong focus on specific, regional threats; different media content
- SOPs for prefect/ major level (municipality/ county level)

3.3 Report on the Topic Discussion: “Rescue Operations + Flood Protection”

3.3.1 Most relevant factors

From the discussions with the practitioners during the three workshops, the following factors were identified as most relevant with regard to “standards” and “procedures” for the field of Rescue Operations and Flood Protection:

- **Organisation of levee monitoring:** Levee monitoring is often done by volunteers. However, this is a less attractive task. Moreover, (younger) people are migrating to the cities, so there are no resources left for monitoring tasks. Furthermore, this task is impeded by the sometimes conflicting responsibilities across different authorities and agencies.
- **Pre-defined plans for evacuation lacks planning for livestock, cultural heritage, etc.:** Currently, there are only pre-defined plans for the evacuation of the affected population, but not for livestock, cultural heritage, etc. Especially the requirement to leave livestock behind can strongly influence and delay the evacuation of the population in rural areas.
- **Unawareness of first responders with instability of buildings during floods:** Structural damage to buildings is not as easy to assess under water as, for example, in a fire. In some cases, the inspection and assessment of building plans is necessary for a reliable assessment of the stability.
- **Lack of knowledge or awareness of downstream effects of decisions:** Decisions made upstream may have tremendous negative effects downstream. A careful

coordination of measures and weighing of impacts against each other is necessary. This includes the consideration of local and/ or regional circumstances.

- **Interpretation of numerical values, value ranges etc.:** There is a need to better or more realistically assess the concrete hazard under local conditions. Often risks are assessed as too high, which leads to many false alarms. This then prevents an appropriate reaction in the case of an actual danger or delays necessary measures.

3.3.2 Possible/ known countermeasures

- Development of sensor systems for levee monitoring
- Raise awareness in training that pumping out water on buildings must not be done too early to prevent collapse
- Better consideration of local and/ or regional circumstances when assessing downstream effects for flood protection/ management decisions

3.3.3 Recommendations to decision makers

- Built-up of national teams for registering cultural heritage etc.
- Mandatory digitization of floor plans for large buildings to enable navigation/ orientation of first responders

3.4 Report on the Topic Discussion: “Supporting Actions”

3.4.1 Most relevant factors

From the discussions with the practitioners during the three workshops, the following factors were identified as most relevant with regard to “standards” and “procedures” for all other “Supporting Actions”:

- **Better compliance with international standards for supplying/ restoring infrastructure:** Even minimum standards as for example <https://spherestandards.org> are not used everywhere throughout the Danube region when restoring infrastructure after floods.
- **Missing data about evacuations and the behaviour of the affected population:** In the case of major disasters, there is a high degree of uncertainty about the behaviour of the affected population. So far, data or at least estimates on the timing of evacuations or the actual need for e.g. shelters are missing in all Danube regions. Often shelters are prepared but not used because the affected population stays with relatives, etc. There may be significant differences between rural and urban areas in this regard. Cooperation with insurance companies for data collection and analysis was suggested. Other suggestions were to use volunteers to collect such data.
- **Limited (inter-organizational) information about stored materials:** In terms of warehousing, a single organisation/authority often cannot store all the necessary materials and make them available in the event of an emergency. However, there is limited information about other organisations' warehouse resources. Better (inter-organisational) information exchange is therefore urgently needed. This is especially true for materials that expire and cannot be used regularly.
- **Register of load-bearing capacity for heavy-duty transport:** There is a lot of “regular” damage to infrastructure, so actual load-bearing capacity for heavy-duty transport is often unknown. Therefore, national registers and a dedicated update process are necessary.

- **Telecommunication bandwidth in affected areas:** In case of major damages to the infrastructure, there is a lack of bandwidth in affected/ destroyed areas that hinder CCC/ operations.
- **Psychological Support:** The general opinion is that all emergency services along the Danube are not really prepared to provide psychological support during and after flood situations. In the future, more capacities for psychological support need to be built up. Capacities of volunteers should be used for this purpose: Spontaneous volunteers need and should receive psychological support during and after operations. However, selected spontaneous volunteers could also provide this support.
- **Social Care:** Social Care often focuses on people and the situation in urban areas. However, rural regions may face specific and different challenges (e.g. loss of live-stock, etc.) that are not yet (sufficiently) addressed.

3.4.2 Possible/ known countermeasures

- Research programmes for data collection during real events with regard to the moment and timing of evacuations, the actual need for shelters, etc.
- Cooperation with insurance companies for data collection and analysis
- Better (inter-organizational) information exchange regarding warehousing, especially for expiable materials

3.4.3 Recommendations to decision makers

- Integration of standards (and compliance to those) in education and training for restoring infrastructure; this especially applies for water purification
- Special contracts with warehousing companies
- Register (and regular updates) of load capacities of bridges in the road network
- Obligation to mobile phone providers to implement Cell Broadcast
- Recommendation of general public to save bandwidth in affected areas or (additionally) technical solutions for enforcement
- Research programmes for better social care for rural regions

3.5 Upcoming actions

In order to derive the roadmap for the 4th DAREnet RDI Cycle, the following upcoming actions were identified:

Next steps for WP4:

- Analysis of the outcomes gather during the three workshops/ discussions with practitioners
- Summary and preparation of the results for discussion in the DAREnet national networks
- Literature reviews regarding existing solutions for all the identified promising innovation opportunities.
- Preparation of the deliverable D4.8

Next steps for WP5:

- Review of the provided document of DLR.
- Rethink the information gathering/ assessment in tasks 5.2-5.5 and ask the task leaders to start their work based on the provided document of DLR
- Tracking the progress of the work
- Design approach to coordinate and control the work of the task leaders 5.2-5.5

4 Conclusions

This deliverable presents the work for the 4th cycle of Topic Working Group (TWG) Workshops in the DAREnet EU project. The focus of this cycle is on identifying innovation opportunities for the topic “standards” and “procedures” in different, pre-defined sub-domains of crisis management. In contrast to the previous cycle, the DAREnet project benefited from the beginning relaxation of COVID-19 protection measures. It was possible to get in direct contact with practitioners at on-site or hybrid events organized and conducted by DAREnet partners. In this way, the level of engagement as well as the amount of needs and gaps discussed with about 70 practitioners could be notably increased in comparison to the 3rd Topic Working Group cycle.

Before the actual workshops, the list of sub-domains of flood management and flood response was intensively discussed in the project consortium as in the previous cycles. In addition, for the forth cycle this list of sub-domains was sent out to 15 external practitioners/experts. In result, for most sub-domains the assessment was nearly equal. However, the domain of “Coordination, Command and Control” was again integrated in the discussions of the workshop. As an experience from the previous cycle, this topic was considered as too generic leading to input with no or only very little connection to flood response and flood management. The discussions during the workshops showed that with respect to standards” and “procedures” several gaps and needs could be identified with direct connection to flood response and flood management.

Deviating from the previous cycles, the workshops were not focussing on a specific sub-topics or certain content only. Because of a sufficiently early planning phase, enough time could be allocated during the events to discuss all topics with all practitioners in a “World Café” manner. In the next step, the findings from the discussion are analyzed in the follow-up deliverable D4.8 (Report of Topic Working Groups: Knowledge Base for assessment and roadmaping cycle 4).

Annex I: Explanation of the tasks and activities in the 4th RDI Workshop cycle

Brief explanations for the identified tasks and activities of the DAREnet flood scenario

Coordination, Command and Control + Alerting + Communication

Coordination, Command and Control

This sums up general CCC questions once it is known that the respective area will or might be hit by a disaster. In this scenario a significant flood is expected, which will impact an extend area and will challenge the exchange of information, situational awareness and cooperation of different CCC structures.

Alert Concept

Are there sufficient concepts to alert responders and related other actors in a timely manner?

Early Warning

Are there systems installed to provide timely and accurate warnings to the public and authorities? Who has access to this kind of data?

Social Media handling

During the last couple of years the importance of self-organized activity of the public as well as the relevance of possible false information becomes obvious. Another aspect of social media would also be crowd sourced information gathering and the effective integration in situational awareness management. Both aspects might be challenging for the responders.

Integration of spontaneous volunteers

Flood events in the last decades demonstrated the willingness of people not associated to responding authorities or organizations to become active and support response measures. For those in charge of the operations, this is a challenging situation, since there are organizational questions which need to be solved as well as the lack of training and equipment. However, in uncritical environments and labor intensive tasks, these could support the response efficiently.

Preparation of the public (citizens)

Is the public aware of the flood risk? Are there programs to prepare the public? Do evacuation routes exist? Does the public know?

Rescue Operations + Emergency measures

Air rescue

In some cases, air rescue might be needed. Therefore, specifically equipped helicopters need to be deployed, as well as specialized personnel.

Water rescue

Evacuations from flooded areas via wading with rafts. Rescuing of trapped people, for example in cars or pressed against fences. This task requires special trained and equipped teams.

Boat operations

Besides supplying trapped peoples, or evacuating them or simply rescuing them, also securing of driftwood, or tanks, etc. might be necessary. Additionally driving a boat through flooded areas also bears high risks that are not comparable with ordinary water rescue operations, standing waves, siphons, or wires could pose multiple threats for boats and there crews.

Flood Protection Measures (Preinstalled protective measures)

These measures have become quite common in larger cities to ensure a nice riverbank without much visual disturbances, but also provide efficient flood protection. Are there temporary/removable systems? Is there a clear plan / distinct responsibility behind these measures?

Levee Control

Levee and embankments are usually the main protective measures to protect lives and material goods. Compared to dams, dykes are not meant for a continuous and long lasting impounding. Therefore, the control of such structures is needed to identify weakening or possible damages as early as possible.

Levee Defense

If a levee (or dam) is damaged or its structure weakened, it needs to be reinforced. Although building emergency dams could be summarized under this task. These activities involve often sand bags, however big packs and dedicated substitutes have been used more and more over the last years.

Evacuation

Due to failed levees or water levels too high to defend, there might be necessities to evacuate civilians from their properties. This could also mean that livestock needs to be moved to safer grounds.

Pumping operations

Pumping operations might be necessary to empty flooded buildings and structures. But even more important in the aftermath of flooding to support or substitute damaged / malfunctioning sewage systems.

Removal of flotsam/log jams

Floods usually cause a lot of flotsam, which ranges from litter left in the flood plain, to entire trees, or even cars or houses. Besides obvious destructive effect of cars and houses although smaller flotsam can be a threat to infrastructure located at the stream. Particularly, log jams at bridges could cause problems and require fast actions. If not removed, these log jams could

lead to further flooding due to the raise of the water level at the jam, or even lead to a failure of the affected bridge. For this scenario log jams and their removal should be in the focus.

Hygienic measures

An important aspect is hygiene in these situations. Primarily for the responders, but ultimately for everyone who might get in touch with the water or when the water sinks the remaining mud. The water during a flood contains often chemicals, such as diesel, or gasoline, and often the sewage systems are also affected leading to spillages of untreated waste water.

Given the fact that flooding bears high hygienic risks, it is important to provide sufficient information to those affected, but especially the inhabitants which have to clear their homes from any debris and might get exposed to any contaminated material. Further, a fast recovery of the sewage and drinking water systems is critical to reduce hygienic risks.

Supporting Actions

Supplying

Due to the isolation of certain areas a basic supply with medical assistance, food and other goods might become necessary. This could also include shuttling of those enclosed to get to work, etc. This is a logistic challenge, which could be done using large (off-road) vehicles, or boats.

Sheltering

The evacuation requires also sheltering of the evacuees. And given the fact that most of the belongings had to be abandoned, there is also a large need to supply them with clothing and convenience goods.

Stocking/Warehousing

How and where are materials stored? Who is responsible? How will they be made available? Are additional materials available do plans exist to organize sandbags, sand or other materials?

Supply/restoring infrastructure

Potable Water Waste, sewage, energy, but also medical supply or food

Psychological support

For the people affected by the flood, this often resembles a stressful situation, especially the high degree of uncertainty can be traumatic. A fast provision of psychological support can help to reduce later traumas.

Social care

Those who suffered massive losses to their property might require fast (financial) support, to get back into a normal and self-determined routines.

Securing evacuated areas

The evacuated perimeter needs to be secured against plunderers.

Annex II: Document coding

Level of confidentiality and dissemination

By default, each document created within DAREnet is © DAREnet Consortium and should be considered confidential. Corresponding legal mentions are included in the document templates and should not be removed, unless a more restricted copyright applies (e.g. at subproject level, organisation level etc.).

In the DAREnet Description of Action (DoA), all deliverables listed in section WT2 (p2-11) have a specific dissemination level. This dissemination level shall be mentioned in the document (a specific section for this is included in the template, both on the cover page and in the footer of each page).

The dissemination level can be defined for each document using one of the following codes:

- PU = Public
- PP = Restricted to other programme participants (including the EC services);
- RE = Restricted to a group specified by the Consortium (including the EC services);
- CO = Confidential, only for members of the Consortium (including the EC services));
- INT = Internal, only for members of the Consortium (excluding the EC services).

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This level typically applies to internal working documents, meeting minutes etc., and cannot be used for contractual project deliverables.

It is possible to create later a public version of (part of) a restricted document, under the condition that the owners of the restricted document agree collectively in writing to release this public version. In this case, a new document code should be given so as to distinguish between the different versions.