



D6.2: REPORT ON STAKEHOLDERS VIEWS OF RISK AWARENESS, SOCIAL CAPITAL, AND VULNERABILITIES

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Executive Summary

BuildERS project aims at four types of innovations: scientific, process, social, and product/market innovations. In their design, BuildERS project uses co-creative methods and engages stakeholders to a variety of activities during the project: for example, scenario-based tabletop exercises, workshops to validate research results, brainstorming events, technology testing and demonstrations, research webinars and expert panel discussions. These merge expertise of experience and practise with the academic knowledge. With the co-creative approach, BuildERS Consortium wants to guarantee that the end-results and recommendations are relevant and feasible from a practitioner perspective.

The main objective of Work Package (WP) 6 is to enable an iterative process and facilitate co-creation amongst end users, practitioners, and BuildERS project consortium members. WP6 enables an agile iteration process. Each activity feeds into sequential Work Packages: collects stakeholders' experiences, adds new knowledge and insights, and provides seeds for the expected innovations throughout the project. External WP6 participants form a *Stakeholder Forum*. Members of this Forum are literally co-creators, not just respondents or knowledge providers as in the “traditional” research.

After the first year of the BuildERS project, the Stakeholder Forum has grown steadily and now includes 146 persons and more than 50 different organizations. Our stakeholders represent public, non-profit and private sectors. Most of them are practitioners and experts in the field of crisis management or intermediaries of individuals in vulnerable situations.

This report begins by explaining in more detail the co-creative approach in BuildERS project. Then it presents the results of the first years' co-creation activities. We have held a series of theoretical model validation workshops with the Advisory Board, first responder project partners and external stakeholders, and facilitated four scenario-based tabletop exercises on crisis communication in Estonia, Finland, Germany and Italy.

These activities have improved our understanding of the factors of vulnerability, including those that are related to risk and crisis communication and/or people's social capital (including their social support networks, links to helping volunteers and trust relationships with the authorities). We also discussed with the Stakeholder Forum, how the new forms of collaboration would be of help in reducing vulnerabilities in crises. For instance, collaboration with the social media influencers in raising awareness on crisis was considered as a double-edged sword: responsibly-acting influencers can be of great help, but they may also accidentally spread false information. Stakeholders also mentioned that close collaboration with the media companies and journalists is important; yet, this is also somewhat problematic, as media is “crowdsourcing” photographs and videos of disaster scenes from general public and thus putting them at risk. Furthermore, spontaneous volunteer networks – an emerging field of civic action in crises – can also be of support, when sharing information and persuading other to act according to it. However, spontaneous volunteers need training, guidelines and coordination so that they will not put themselves in danger or hinder official operations.



In line with the BuildERS project's research results, our Stakeholder Forum saw that the challenges in risk and crisis communication are related equally to the information receivers' situation, means of communication and the content of shared information. Thus, the factors of vulnerability may arise from the individual's life-situation, specific communication channels used, and/or from the ways crisis-related information is provided. Messages should be easy-to-understand and unambiguous.

Stakeholder Forum also confirmed that plain exposure and experience of crisis (that is being subjected to hazard) is one important dimension of vulnerability. For instance, first responders are intentionally, and tourists accidentally exposed to crisis; therefore, they can also be vulnerable to some degree, depending on the circumstances. However, these people and their vulnerabilities are rarely, if at all, mentioned in international and national surveys and data bases. And yet, there are various kinds of secondary factors that intersect with the primary factors, and consequently either increase or decrease individuals' vulnerabilities in crises. BuildERS project has elaborated these secondary factors of vulnerability within WP1 (in the updated report D1.3¹) and in several case studies of WP4 (in D4.1², D4.2³, D4.4⁴ and D4.5⁵).

In sum, our Stakeholder Forum confirmed that it is important to address vulnerability as dynamic and contextual in institutional crisis management practises and processes. First responders and other civil protection agencies, however, would need more knowledge of people in need or at risk. The Estonian case study — where the public databases are integrated to identify highly vulnerable populations — seems a promising initiative in this respect and provides seeds for the BuildERS project's social and technological innovations. Furthermore, we need to innovate new ways to collaborate with a variety of societal actors to build resilient societies. As we aim to help people with a high risk of becoming vulnerable, we must design these ways carefully so that we are reducing the risk instead of causing more harm. This means that the co-creative WP6 needs to go forward side by side with the WP7, which is responsible of the ethical monitoring of the project activities.

¹ Morsut C. et al. (2020; revised 2021) Report on segments of vulnerability country by country basis – inside and outside the official data, BuildERS project deliverable

² Jukarainen P. et al. (2021) Managing chemical spill emergency and mis-/dis- information through simulated responses, BuildERS project deliverable (Finnish case study)

³ Savadori L. et al. (2021, forthcoming) reducing social cost of evacuation from seismic hazard locations to temporary housing in safe areas in Italy, BuildERS project deliverable

⁴ Orru K. et al. (2021) Reducing social vulnerability by innovative data fusion for more-informed rescue prioritisation, BuildERS project deliverable (Estonian case study)

⁵ Schobert M. et al. (2021) Impacts of Elbe flooding disasters on socially underprivileged groups and lessons for resilience improvement, BuildERS project deliverable (German case study)



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List of Acronyms

BuildERS	Building European Communities Resilience and Social Capital project
COVID-19	Coronavirus disease pandemic
D	Deliverable, BuildERS project end-result
DoA	Description of Action, a working plan for the BuildERS project
GA	Grant agreement
NGO	Non-governmental organisation, which works independently from any government
NPO	Nonprofit organization, which primary purpose is other than generating profit (for example church or charity)
SWOT	Strategic planning technique used in the BuildERS project in the tabletop exercises on risk and crisis communication to identify strengths, weaknesses, opportunities and threats
T	Task under a Work Package in the BuildERS project
VTT	VTT Technical Research Centre of Finland, Ltd.
WP	Work Package of the BuildERS project



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1. Introduction to BuildERS co-creation process

According to the common vision of BuildERS project, the overall aim is to improve the resilience within (especially) European societies. As societal resilience (depends) on individual capacities to deal with crises, we seek to empower those who are currently in most vulnerable position and increase their potential to (re)act and contribute to crisis management. Although it is not possible to eliminate vulnerabilities in total, we could innovate better tools and practises to measure and reduce vulnerabilities in crises, and give related recommendations. We have explored the undelying factors behind vulnerabilities and analysed, what constitutes vulnerability and how can it be measured?

BuildERs project methodology is based on an extensive co-creative stakeholder engagement. The main objective of Work Package (WP) 6 is to facilitate co-creation amongst end users, practitioners and BuildERS project consortium members. Aim is to enable an agile iteration process: each activity feeds into sequential Work Packages: collect stakeholders' experiences, add new knowledge and insights, and provide seeds for the expected social and technological innovations throughout the project. Activities take different forms, such as face-to-face workshops, online discussions and questionnaires, panel discussions and expert interviews. External WP6 participants are literally co-creators; they are not just respondents or knowledge providers as in the “traditional” research. Participants also gain from their involvement and contribute beyond answering questions. Generally speaking, within WP6 activities we:

- a) **evaluate and validate research findings** (Do they make sense? Do the practitioners see them as credible? Do they match with their experiences? Can we generalize the findings to other European contexts?)
- b) **demonstrate, simulate and test technological tools and solutions** (Would they support in assessing vulnerabilities? Would they help in addressing the needs of vulnerable individuals? Would they help to learn to understand the factors and dynamics behind vulnerabilities?)
- c) **ideate and brainstorm scientific, social, process-related and product/market innovations** (How to identify, assess and/or measure vulnerabilities? How to learn to understand vulnerabilities and learn skills to reduce vulnerabilities? How to engage representatives of people with high risk of becoming vulnerable and various kinds of volunteers in the raising of risk awareness? How to collaborate with the emergent actors like informal/spontaneous volunteers and (social media) influencers?)
- d) **evaluate preliminary resilience policy recommendations** (Are they feasible? Are they too ambitious? Are they conventional or even clichéd? Can they be applied in different European, national and/or local contexts?)

Our policy recommendations aim at making an impact on the decision makers and policymaking officials, who are responsible of the strategic planning and drafting of laws. Our practical innovations, such as process guidelines, are primarily targeted for the civil society organizations, civil protection agencies, first responders, health care and social service providers, agencies providing psychological support in crisis, and other agencies in the field of crisis management. In addition, these innovations benefit their strategic partners that working together for inclusive and participatory resilience building.



Furthermore, our scientific contributions and innovations are targeted especially for academic community – especially for the scholars and students who are interested in risk assessment, disaster risk reduction (DDR), crisis management and crisis communication.

In this report, we will explain in more detail the overall process and practical steps of the co-creation approach implemented in BuildERS project. The first chapter will introduce our understanding of co-creation and its definitions elsewhere. We will also share our challenges in engaging our stakeholders during an ongoing global crisis: the COVID-19 pandemic, with restrictions on face-to-face social interaction. Although many of our key stakeholders have been occupied with the operational management of pandemic, we have been able to organise rather successful online events, which have validated the research findings and taken them further to innovate. As a first report of WP6 we will present here the external stakeholders' opinions on vulnerability, and how it is related to risk awareness and social capital.

In the 2nd chapter we will go through the validation of the first ideas for BuildERS theoretical framework. We will first explain the process and then present the stakeholders opinions on the key concepts and their interdependencies. As the risk awareness is expected to be one of the central factors in vulnerability, we have collected the stakeholders views on how risk and crisis communication is related to vulnerability. These results are presented in the 3rd chapter.

The BuildERS project WP1 has created a theoretical basis on what constitutes vulnerability. WP2 has complemented this theoretical work with an empirical survey on the understanding of vulnerability and resilience in different national European disaster and crisis management systems. This report merges the findings of WP1 and WP2 (published in the reports D1.1, D1.3, D1.4, D2.2 and D2.3) together with the results of co-creative activities with of our *Stakeholder Forum*.⁶ This Forum is extended, as the project proceeds and new members are invited to take part in co-creation. Project Milestone 6 requires that at least first 100 stakeholder participants have been engaged until project month 30 (October 2021). Under project objectives, it is also stated that 50 different types of organizations and hundreds of individuals participate in co-creation and evaluation activities of policies, strategies and tools — including technologies. At the time of reporting this revised version (in May 2021) our Stakeholder Forum comprises of 143 persons that have represented over 50 organisations.

Within WP1, BuildERS partners have outlined a model of the interrelationships between risk awareness/risk perception, social capital, vulnerability and resilience. Within WP6, this model and its hypotheses were validated. With several iteration rounds, definitions of the key concepts and the visualisation of the model were commented. Aim with the validation process was to support finalization of BuildERS deliverable D1.2 *Report presenting the unified theoretical framework on the concepts of risk awareness, social capital, vulnerable segments of society, and their interdependencies*.

⁶ Morsut, Claudia et al. (2019), D1.1 First Version of The Unified Theoretical Framework on the Concepts of Risk Awareness, Social Capital, Vulnerability, Resilience and their Interdependencies; Morsut Claudia et al. (2020; revised 2021), D1.3 Report on Segments of Vulnerability Country by Country Basis — Inside and Outside the Official Data; Hansson, Sten et al. (2019) D1.4 Communication Behaviour in Europe and Vulnerabilities; Orru, Kati et al. (2020), D2.2. Case Country Analyses and a Cross-Country Comparative Analysis of the Functioning of Disaster Resilience Systems, and Bäck, Asta et al. (2020), Social Media Campaign Analysis and Governments' Responses to Disinformation; all published within the Building European Communities' Resilience and Social Capital, BuildERS -project.



The four tabletop exercises held in Estonia, Finland, Germany and Italy continued discussion of vulnerability by validating the research findings related to risk and crisis communication. They handled vulnerability in terms of increasing risk awareness and risk perception: what factors are linked to vulnerability in disasters, if we look at it from a risk and crisis communication perspective? We also collected stakeholders' experiences of reaching people and tackling with false and harmful information — either unintentionally shared *misinformation* or intentionally produced and delivered *disinformation*.

The tabletop exercises took also further the preliminary BuildERS findings in terms of strengthening social capital and building on social support networks and volunteers. Within a fictional disaster scenario, exercise participants were invited to imagine key partnerships in organizing efficient risk and crisis communication. We also requested them to create ideas for collaboration with spontaneous volunteer networks in crisis. We asked of their opinion on virtual or digital volunteering; this type of volunteer work uses internet to deliver aid and support. An example shown was a group of volunteers in Germany, who designed maps to inform citizens of (im)passable areas during flooding. In addition, the role of social media influencers as crisis related content producers was problematized. Could social media influencers possibly support authorities in increasing risk awareness and promoting preparedness?

This report will document the key results of the aforementioned validation workshops and tabletop exercises. The sub-theme of managing deliberately and non-intentionally spread false information (dis- and misinformation) is reported in more detail in the BuildERS deliverable D6.3 *Report of the challenges related to of mis-, dis- and malinformation*.⁷ In that report, we will broaden the discussion and innovate the means to tackle false and harmful information together with our Estonian, Belgian, Hungarian, Italian, Norwegian, Portuguese and Swedish stakeholders. The COVID-19 pandemic has provided us excellent reference material in this issue. Therefore, both the tabletop exercises and workshops take COVID-19 as an example of the challenges; we will collect stakeholders experiences and lessons learned during the pandemic and use it as a material for formulating policy and practice recommendations within WP5. In this task we will build on the European Commission Action Plan against disinformation (2018)⁸ and the work of the newly established European Digital Media Observatory EDMO⁹.

⁷ Jukarainen P. et al. (2021) Report of the challenges related to mis-, dis- and malinformation, BuildERS project deliverable.

⁸ European Commission & High Representative of the Union for Foreign Affairs and Security Policy (2018), European Commission contribution to the European Council, Action Plan against Disinformation, Brussels, 5 December 2018, https://ec.europa.eu/commission/sites/beta-political/files/eu-communication-disinformation-euco-05122018_en.pdf, accessed 6 June 2020.

⁹ EDMO is a collaborative hub for fact-checkers, academics and other relevant stakeholders. Among other work, it will map, support and train fact-checking organizations in Europe, promote European research on disinformation, create a global repository of peer-reviewed scientific articles and build a public portal to increase awareness of online disinformation. See more from the European Digital Media Observatory website, <https://edmo.eu/>, accessed 11 June 2020.



1.1 Theory on co-creation – What can it be?

Co-creation means here finding solutions to "wicked problems" and designing recommendations *with* a variety of stakeholders, not only *for* them (Sanders, 2006; Sanders and Stappers, 2008; Halse et al, 2010). The concept of co-creation is closely interlinked with the concept of innovation; a notion that is also hard to define and largely dependent on the context of its use (e.g. Bason 2010; Langergaard & Hansen 2013). Essentially, co-creation is a method for *leading* innovation process (Bason 2010, 8).

In the private sector, co-creation means having end-users as possible co-producers of added value; thus the companies' customers take over specific activities in the production chain. In the public sector co-creation occurs with the citizens, who participate in drafting policies, designing public services and finding solutions to societal problems. Public service providers have used co-creative methods for instance to improve the quality and cost-efficiency of services and to increase their legitimacy (Jalonen 2019). Related concepts are collaborative governance, inclusiveness/inclusion management and deliberative democracy (Ansell et al. 2020; Rosenberg 2007; Voorberg et al. 2014)

Academic community can form a solid foundation for the co-creation process. (Haataja et al., 2018, 8-10). The academic scholars and students are motivated to take part in co-creation for multiple reasons. It can be that they want to ensure that their research has an impact outside the academic field, or they want new information and insight into an issue (Haataja et al. 2018, 47). In the co-creation process, the research results are shared with all participants, discussed with them and at a later stage used as an inspiration for innovative ideas, practical solutions and policy recommendations.

Though the facilitation approach is more targeted to the organization of physical workshops, most of the principals are applicable in an online context as well. For example, Haataja et al. (2018) state that when co-creation includes a research element, the methodological and theoretical discourse should be summarized to the participants in an understandable way. Professional jargon should be avoided because it can easily act as a dividing factor. Thus, it is important to create a common language and a communal atmosphere. (Haataja et al. 2018)

The benefit of co-creation compared to other innovation methods is often said to be related to the capacity building of citizens and other stakeholders. In the co-creation, actors with different viewpoints and competences are amassed together to partake in a joint problem-solving process. If the process is successful, participants understand the problem better and learn together. Through co-creation, participants gain a mutual sense of ownership on the issue (Sørensen & Jacob Torfing 2018).

Generally, it is also good to engage a variety of organizations as early as possible for the process to carry fruit (Bason 2010, 199). Overall, co-creation must benefit all parties that take part in the process. Thus, participants' motivation should be well understood. It can be quite straight forward as in the case of companies (monetary value benefit) but the reasons are different for academia, NPOs and NGOs, first responders and other stakeholders. Transparency is also important when informing the participants about how their input will be used (Liu 2017).

And yet, although a large diversity of stakeholders is a prerequisite for successful co-creation, it also makes the process management more difficult. Virtual, online co-creation platforms add another level of complexity (Castellano et al. 2018) declare it extremely difficult to generate and maintain online engagement through an iterative process. One of the main obstacles that influence online engagement is trust. The facilitators and the material must be approachable and the atmosphere such



that the participants feel free to express their incomplete ideas to others. The participants tend to follow the example of the facilitator; trust in the facilitator is essential for successful dialogue to take place (Haataja et al. 2018).

There are two main benefits to co-creation: divergence and execution. Divergence refers to the variation among the ideas that are introduced during the process. Bringing the knowledge to a varied stakeholder group can lead to new common interpretation of problems, challenges and opportunities. Moreover, engaging stakeholders in the creative process from an early stage can be an effective way to drive innovation. Co-creation can help overcome silos, dogmas and group thinking that stand in the way of innovative new solutions. It can lead to better outcomes at a lower cost (Bason 2010, 8-9.). Inviting a broader range of actors with fresh perspectives can sometimes help overcome political-ideological conflicts and other difficult impasses (Torfing et al. 2019, 810).

1.2 Validation of research, creation of innovations and drafting recommendations

The BuildERS project aims at the transference of research outputs by involving several types of actors or stakeholders into the process via the *Stakeholder Forum*. As stated before, this Forum is to be engaged to a variety of co-creation activities during the project, such as scenario-based tabletop exercises, workshops to validate research results, brainstorming events, technology testing and demonstrations, research webinars and expert panel discussions. The actors represent, among others, technology developers, first responders, authorities, non-profit and Non-Governmental Organizations (NPOs and NGOs) and both affiliated and spontaneous volunteer groups.

Co-creation approach should guarantee that the social, technological and scientific innovations are relevant for the practitioners and the policy makers. Co-design and co-development are related concepts for co-creation. BuildERS WP6 is titled "Co-design and co-development with Stakeholders"; however, the description states that this is a co-creative work package that supports, facilitates and produces new knowledge for the sequential work packages and tasks. Therefore, for clarity, we have decided to use the single term of co-creation of the various engagement activities within the WP6.

Co-creative approach has both a practical and fundamental value for the BuildERS project. One of the project objectives is to innovate new collaboration models, which would increase the social capital of vulnerable populations and further improve their resilience in crises. Especially large-scale crisis typically demand resources and capabilities beyond those of any individual organizations. Effective cooperation of various agencies and individuals is then crucial. (Noran 2014.) However, collaboration cannot be forced, or trust networks built in a short timeframe. Therefore, one of the indirect impacts of WP6 is that it develops collaborative working methods, while testing in practise various engagement facilitation techniques.



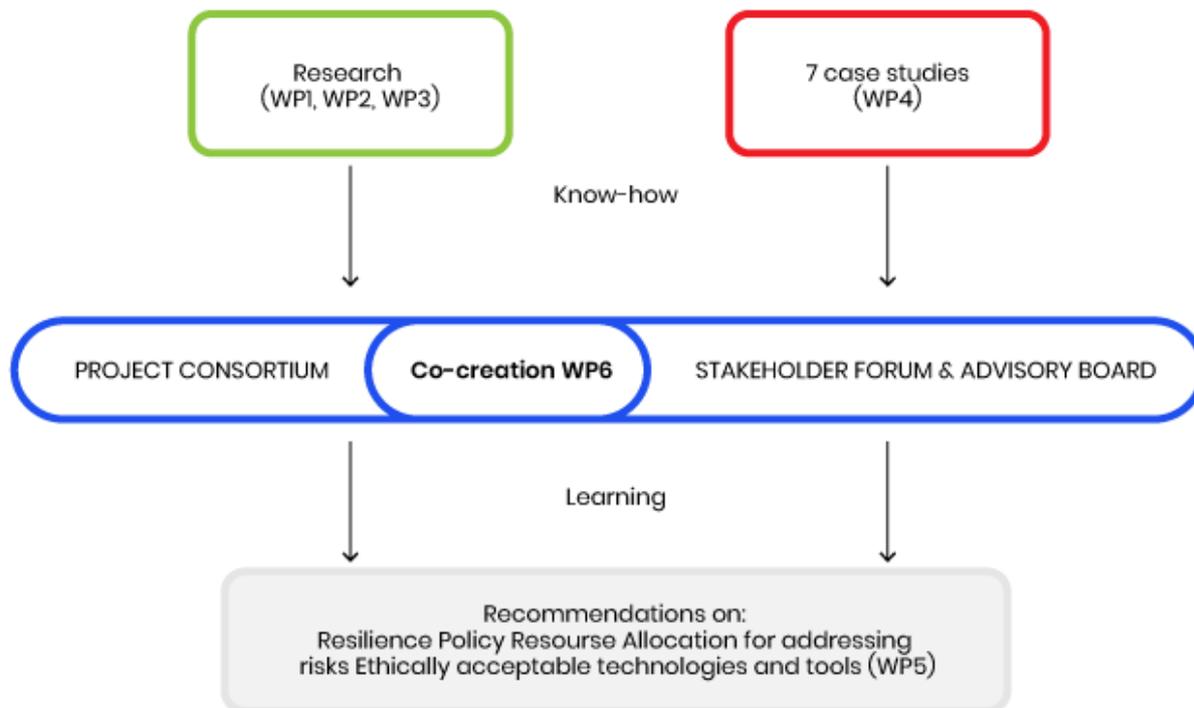


Figure 1. Co-creative approach in BuildERS

Learning is a significant incentive to encourage co-creation. Learning should be mutual and reciprocal. For instance, research literature too often reaches only the members of the academic community. Traditionally, academic knowledge enters the workforce through the education of new experts, but the method is linear and slow. Co-creation activities are an exploration into complex issues, and it usually starts with a preliminary definition of the problem (Haataja et al. 2018).

The Grant Agreement of the BuildERS project states our core challenge: how can we best increase the resilience of those, who are most vulnerable in crisis/disaster and thus strengthen the overall resilience of society. Our working hypothesis is that resilience in crisis is related to better awareness of risks and stronger social capital. With the co-creative approach, we will explore, whether this is really the case.

The BuildERS project has a multidisciplinary, international research team, which aims at ambitious scientific achievements together with the Stakeholder Forum. WP6 aims to ensure that BuildERS research and the Stakeholder Forum's views are in line with each other by bringing the research to them and asking for their input. The facilitators summarize the results during and after each WP activity, create a synthesis, and outline the outcomes for the formulation of resilience and innovation policy recommendations and recommendations on allocating the resources.

In order to follow the ethical principles of BuildERS project, our co-creation should allow diversity of participants and flatten hierarchies. It means that we appreciate different types of expertise and try to allow sharing of different opinions and ideas based on a diversity of experiences and knowledge.



We will engage in our WP6 activities persons who are:

- a) experts by personal experience: survivors of crisis, previous customers of first responders, care takers who are relatives - not trained professionals, but may receive financial compensation, spontaneous volunteers or volunteers working for the affiliated NGOs
- b) experts by working practice: operational level first responders, service providers who meet customers, communication specialists, coordinators of volunteer action
- c) experts by knowledge: practitioners in managerial positions and/or responsible of strategic planning, academic communities, advisors of policy makers, middle-management of first responders, ministerial level officers and employees, EU-level practitioners

At the time of reporting (May 2021) BuildERS project has already engaged a variety of different stakeholder groups in the validation of research results and in the risk and crisis communication themed tabletop exercises and workshops on information disorder (that is managing of mis-, dis- and malinformation). Currently our Stakeholder Forum comprises of following experts:

- a) first responders and other practitioners in the field of crisis management, like cities and municipalities, regional civil protection agencies, rescue services, law enforcement
- b) communications specialists, like representatives of media and national broadcasting agencies
- c) intermediaries with knowledge on vulnerable situations, like the citizen's groups, non-profit organisations, and associations responsible of social services, psychological support or emergency relief
- d) representatives of the first responder¹⁰ and emergency service provider project partners (Police of Finland/Police University College of Finland, Estonian Rescue Board, the Salvation Army, the German Red Cross, the Civil Protection Department of the Autonomous Province of Trento, in Italy), who are not part of the project delivery teams
- e) representatives of academic community and education specialists, who have taken part in the validation of theoretical framework and discussed the research findings created withing the WP1 and WP2 in two research Colloquiums organised by BuildERS project.¹¹

¹⁰ First responders are organizations or trained persons who respond immediately to an emergency or larger disaster. In practise they are emergency medical technicians, paramedics, firefighters, rescuers, police officers or (para)military personnel.

¹¹ BuildERS project will organize altogether three Colloquiums: two online webinars and one face-to-face event. Altogether 15 scholars and other interested persons outside the project Consortium plus 4 Advisory Board members joined the first Colloquium in June 2020; in addition there were 19 members of the Consortium sharing views with the participants on the first drafts of the theoretical framework and its key concepts. The first colloquium was planned to be a panel at the 2020 SRA (Society for Risk Analysis – Europe) conference, but unfortunately this was cancelled due to the COVID-19 pandemic. Thus, the planning of event was quite prompt and left little time for advertising. The 2nd Colloquium held in was larger event, and there were 30 external participants from universities and polytechnics/applied sciences, RDI-insitutions, crisis management specialists' associations and networks, and technology developers. In addition 2 Advisory Board members and 24 Consortium members took part in the 2nd webinar. The presentations were related to social media for emergency alerting, satellite imaging and hazards and other emerging technologies, managing information disorder (false and harmful information) in crises and the coping of social service providers



BuildERS project aims at four types of innovations: scientific, process-related, social and product/market innovations. These innovations form three clusters. First cluster of scientific, process and product/market innovations are related to the collection and processing of data for the vulnerability (risk) assessment with supportive tools and technologies. As scientific innovations we will create indicators for a more nuanced vulnerability assessment, and a framework to measure vulnerabilities in crises. The co-creation of these innovations is done in several steps: 1) simplified Delphi-process to validate conceptual definitions and the preliminary theoretical insights, 2) discussions within BuildERS Colloquiums (3) testing and validation of the suggested indicators and matrix for vulnerability mapping with the stakeholders.

Within the first cluster of innovations, we will also make *guidelines for authorities, on how to assess crises-related vulnerabilities*, and *guidelines how to gather and merge data of vulnerabilities*, so that the ethical issues are considered. These will be designed within a series of workshops, that deal with crowdsourcing, using of positioning data and location based solutions, and data sharing between authorities. Both Estonian case studies (D4.3 and D4.4), Indonesian cases study, and the Catalogue of Tools and Technologies (D2.4) are central background information for these innovations.

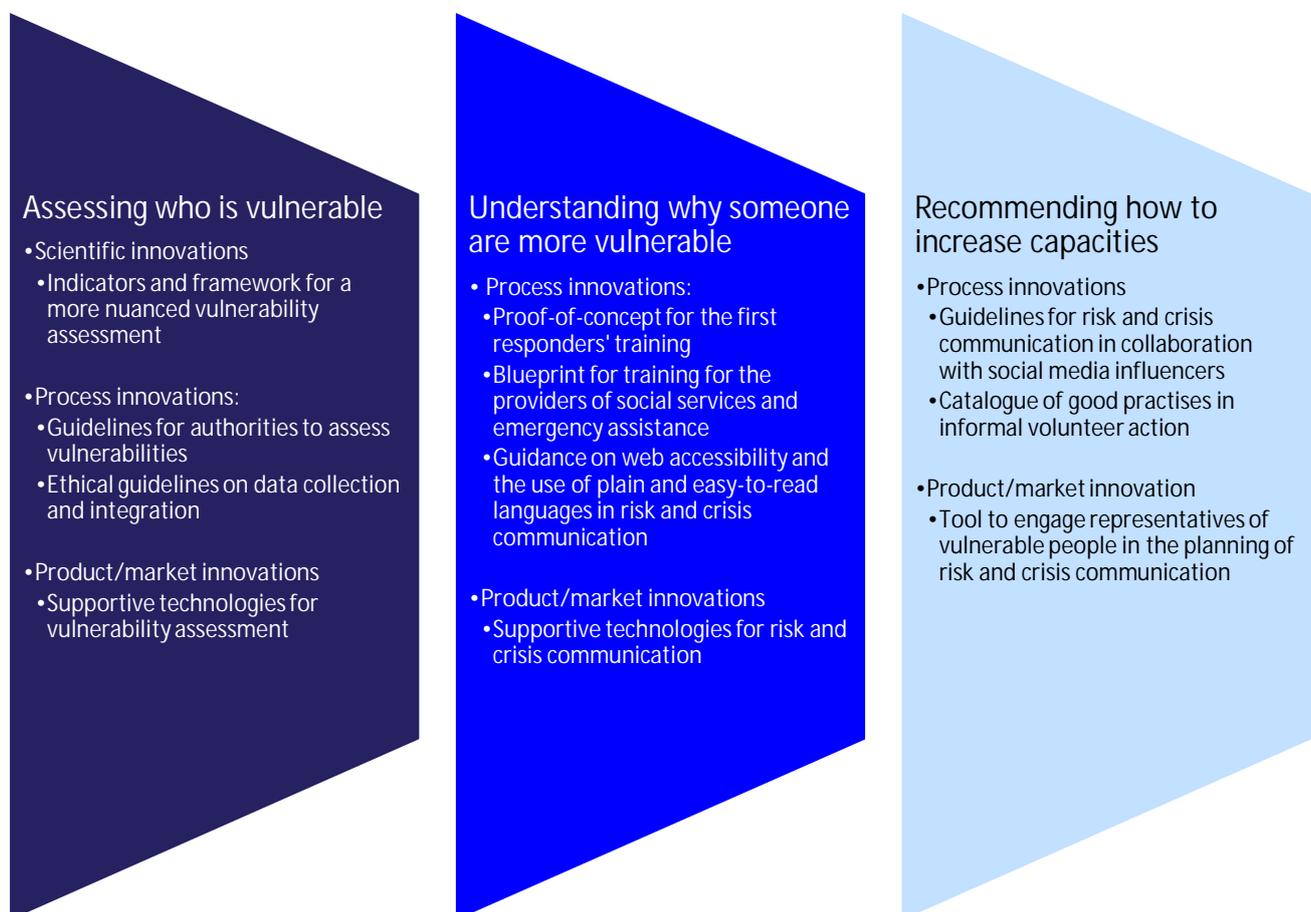


Figure 2. Innovation clusters in BuildERS

during the COVID-19 pandemic. The presentations served as openings for later discussions and a basis for later co-creation of solutions to the challenges addressed in the webinar. The recorded Colloquium presentations and the summaries can be found in BuildERS project reports Keränen et. al (2020) D6.7 *Colloquium 1* and Keränen et al. (2021) D6.8 *Colloquium 2* can be viewed in the [BuildERS project website](#).



Second cluster is related to capacity-building of key practitioners working with the people in vulnerable situations. We will co-create *training for the first responders and providers of social services and emergency assistance*. Both trainings aim at building competencies to raise awareness of risks among the individuals with various vulnerabilities, and ensure the accessibility of communication in crisis. The training for the first responders will be developed on a proof-of-concept level (POC) to be tested with the European end users and for the service providers' training we will create a blueprint for later development.

Third cluster of innovations is related to building of new types of strategic partnerships in order to increase the outreach of risk and crisis communication. We will innovate process guidelines for the collaboration with social media influencers – both with the macro-level “celebrities” with large audiences and micro-level influencers, who have lower number of followers, but who are often considered as relatable among their audiences. As a social innovation we will make a catalogue of good practices in informal volunteering action. We will also provide templates in several languages on social network mapping. As stated in the BuildERS D2.2 spontaneous and unaffiliated civil society action is growing in importance.

Furthermore, within the consortium partners and with the experts outside the BuildERS project delivery teams, we will create a tool (Risk and Crisis Communication Canvas); this is a tool for the crisis managers to plan a risk and crisis communication strategy, and make it more inclusive and accessible. Although the end-result (D6.5) will be confidential and shared only within the project consortium and the EU commission, the general description of tool will be published on the BuildERS project website.

Our co-creation processes follow the stages defined by Christian Bason (2010). Co-creation comprises consecutive phases, although the process is iterative in nature and not necessarily linear. In fact, it is often the case that there is back and forth movement between the key phases. The first stage is called *framing*: which clarifies the focus of the project. According to the common vision, our operationalised questions are the following:

ANALYSING who is vulnerable

- What constitutes vulnerability and how can it be measured?
- In how far is there a shared understanding of vulnerability in different (national) contexts?

UNDERSTANDING why some are more vulnerable than other

- What are the factors that lead to individuals becoming vulnerable?
- What are the factors that hinder individuals from coping with crisis?
- How to make sure the most vulnerable are able (and supported) to use their potential and capacities?

INNOVATING & RECOMMENDING how to increase capacities

- What recommendations can be given in order to build resilience?
- What kinds of new technologies could support the building of resilience?



Project scoping can be understood as the creation of the co-creation plan; it contains the design of the co-creation process. This includes setting the period, and defining the key activities, participants and the required resources (Bason 2010, 177). This overall scoping can be seen in the innovation outcomes.

The first initial stage of co-creation is called *knowing*. This stage means validation of the research results and assessment of the accuracy of research findings. In BuildERS, project experts' experiences on different issues are collected online and face-to-face events. We will validate and complement research results, which are created in WPs 1, 2, 3 and 4 with the Stakeholder Forum and Advisory Board (AB). WP1 produces the theoretical framework and comparative information on vulnerability and risk awareness, social capital and the use of social media. WP2 studies the institutional side of resilience management comparing the institutional structures and processes in several countries and the connection of institutional framework to the central concepts: social capital, risk awareness and vulnerability. WP3 contributes to the whole by producing more material on the vulnerability through a large survey in 14 countries for the customers of Salvation Army, and by interviewing the Salvation Army staff on meeting the needs of their customers during COVID-19. Intermediaries of survey respondents (like representatives of NPOs and NGOs and public service providers) are invited to join the Stakeholder Forum.

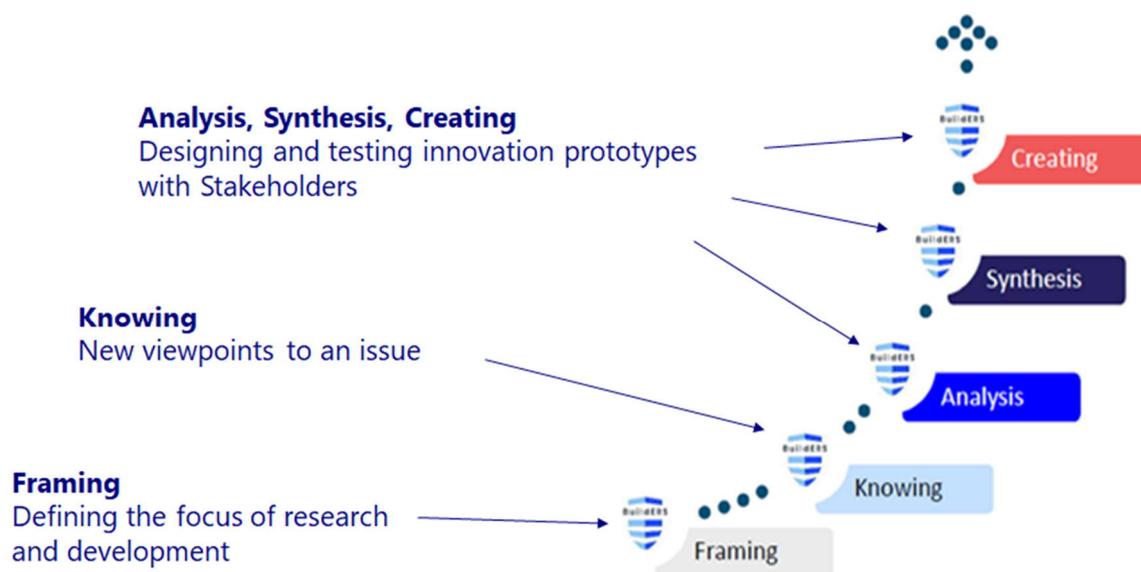


Figure 3 The main stages of co-creative process

The next stage is *analysis*, which refers to transforming the knowledge gathered at the first knowing-stage into possible innovation paths. This stage does not engage the Stakeholder Forum; the project consortium will work together in online and face-to-face "brainstorming" workshops and have mutual discussions with the WPLEaders. We must remember that the project consortium itself is diverse: its expertise is multi-disciplinary, and the partners are universities, companies, first responders and



NGOs¹². The analysis will identify key themes, within which the social and technological innovations are developed. This stage may also redefine the focus; there may emerge development needs, which we have not yet realized.

The third phase of co-creation is called *synthesis*. It consists of idea generation and selection of the most prominent ideas. This is done by free from judgement brainstorming. The best, most useful ideas as per Bason (2010) are selected by assessing:

- whether the idea is realistic
- the possible impact it would have
- the strength of evidence supporting its usefulness in practice
- how well it matches the core objectives and goals (of the project) and,
- the time frame and possible development capacity of the idea.

As WP6 facilitators, we will encourage an atmosphere of trust and confidence and allow asking also “silly” questions. Creative atmosphere can be achieved via various facilitation tools and methods. As a supportive technology, BuildERS project has used an online platform called Howspace and the Microsoft Teams working environment.¹³

Synthesis means a formation of a comprehensible set of solutions, activities and benefits that have their basis on an idea. In the BuildERS project, synthesis stage will be executed in cooperation with WP5. WP5 produces roughly following kinds of recommendations a) strategic insights for the policy makers, b) operational advice for the practitioners, c) technical tools to improve resilience. It will extract the key findings of the project and synthesize them into outputs.¹⁴ WP5 is thus an essential part of the co-creative process within WP6.

The last stage of the co-creation cycle is called *creating*. Creating denotes prototyping, testing and adjusting in an iterative process. Our “creations” are a set of indicators with a framework for vulnerability assessment, process guidelines for vulnerability (risk) assessment, strategic cooperation, supportive technological tools for practitioners, training concept and blueprint, and policy initiatives. In this stage, we will utilize live simulations, mock-up demonstrations in a workshop setting, and carry out end-user surveys assessing the innovation potential.

¹² BuildERS Consortium comprises of following academic partners: The University of Stavanger in Norway, the Stockholm University in Sweden, the University of Tartu in Estonia, the University of Trento in Italy, the University of Tübingen in Germany, the University of Indonesia, the Institute of Transport Economics in Norway, the Stockholm Environment Institute in Sweden and the George Mason Research Foundation in the United States. First responders are represented by the Autonomous Province of Trento, the Estonian Rescue Board, the German Red Cross, the Salvation Army and the Police University College of Finland. Private sector partners are Geonardo Environmental Technologies Ltd and Positium Ltd.

¹³ [Howspace](#) is an Artificial Intelligence powered digital platform, which enables a facilitation on workshops and other collaborative events. It can be also used for sharing research knowledge in a visually pleasing manner. Howspace is operated by a Finnish company, Howspace Oy. You will find more about the features in BuildERS Deliverable 6.1 *Online Platform Open and in Operation*, BuildERS -project.

¹⁴ BuildERS project Grant Agreement, Annex 1 (Part A), p. 35.



1.3 Coping with COVID-19 and challenges of online co-creation

Trust building in an online facilitation platform can be challenging. We have tried to maintain trust by making the participation process as transparent as possible. We clearly indicate the participants' rights, the personal information we collect and their opportunity to remain anonymous during the process. We only gather a minimal amount of background information about their field, level of expertise and years of service. An online workshop which can be entered any time is hard to facilitate. Therefore, the role of the facilitator is passive in these initial (online) stages. Most of the work to encourage participation must be done in advance.

Goal Orientation

Haataja et al. 2018 (35), encourage participants to partake in goal-oriented dialogue in the co-creation process. To achieve this, the goal should be repeatedly stated to the participants so that they stay with the topic. However, a goal cannot be merely confirming predefined results or hypothesis. It should instead revolve around a chosen theme and with the objective of trying to reach an understanding (or solving) problems that have been defined together. On the online platform, we state the purpose of the co-creation activity in broad terms in the introductory text that welcomes participants. We also introduce some of the BuildERS concepts to the participants incrementally as a type of path. WP6 draws from the other BuildERS WPs. Therefore, we were able to refocus the objective of our tasks only as the first deliverables were published. Based on the deliverables D1.1, D1.3, D1.4, D2.2, D2.3 we were able to re-evaluate the themes that we would take to the Stakeholder Forum. We created new operationalized images of the themes that are the focus of our activities. This work will guide all co-creation activities going forward.

Safe environment in online facilitation

We encourage the use of a pseudonym in all online activities. It was clear that some participants did not mind using their name or image in the online platform while to others it was clearly important. We have provided clear guidelines for the registration and anonymous participation in the participants' native languages. Furthermore, we only required the email domains of the participating organizations and did not collect a list of e-mails. The participants were able to choose to register on their own. Anonymous participation on an online platform can be very beneficial in the co-creative process. It can give the participants the freedom to express their views without judgement and let go of organizational silos (Bason 2010). We offered the privacy statement for the activity and the Howspace platform before registration, and it is always visible as a separate page on the platform. All the information is in the native language, and the partner responsible for contacting the stakeholders functions as a local contact person for any further information. We believe that transparency of data management leads to trust and larger participation. These two facilitation goals should be at the centre of any future activities be it online or face-to-face.



Flexibility in contextualization

Originally, we had planned to contextualize the T6.1 and T6.2 activities around different disaster themes for each country case reported in D6.2 (Italy, Finland, Estonia and Germany). Just as the online tabletop exercises were to take place, the COVID-19 crisis started to become serious in Europe. It had a significant effect on the planned workshop activities. We promptly revised the plan to conduct all the workshops on the Howspace platform that we were already planning to use in some of the exercises. At the same time, we decided to use the current crisis to contextualize and tie the exercises together. We did this in order to firstly, engage stakeholders that were busy with the everyday management of the pandemic and secondly to create interest in the project and the online working method. Many stakeholders were instructed not to partake in any activities beyond the current crisis. Nonetheless, by emphasizing the timeliness and significance of our project and by introducing our concept for vulnerability in crises, we managed to create much interest and accumulate a reasonable number of participants. As stated in previous chapters, we should analyse and be aware of the different motivations in order to create value for stakeholders and ourselves. In later rounds and activities, we should collect feedback on the motivation, the main interests and expectations in the Stakeholder Forum.

Information and personal security

During the co-creation activities, we engage first responder organizations and other critical actors in disaster, safety and security management. Therefore, it is essential that we consider the safety of stakeholders in our co-creation activities. The project has established a Security Board lead by the Security Officer; these are consulted in case a (personal or organizational) safety or security issue arises that needs further inspection. Most national preparedness plans and documents are confidential, so we must make sure that we avoid any detailed operational or tactical matters related to preparedness or contingency planning. We try to ensure that online participants do not use their name or likeness on the Howspace platform. The participants are encouraged to use a pseudonym instead. If they have not done so, the facilitators have replaced their name or profile picture. These cases were few but as the persons represent their organization, it is important to remind them of the opportunity (and indeed recommendation) to use a pseudonym. Furthermore, we instructed the participants to reply to questions concerning organizational strengths and weaknesses in general terms. Online targeting of officials has become more common and so personal security must be ensured in all possible means.

Significance of feedback

It is important to gather honest feedback on co-creation activities to discern the meaningfulness of the content to the participants. We encourage participation by making the content engaging, informative and incremental and by adding a feedback section to discern how well our approach works. All feedback is always used in the design of sequential activities and events.

We included a feedback section at the end of the T6.2 online workshops. It was a great way for us to evaluate our method. We received mostly positive feedback from the participants who thought that the content was interesting, engaging and relevant. Nonetheless, online co-creative workshops seem to be a novel concept for many. We must consider this in the planning of future online activities by emphasizing some of the particularities of such events.

First, we should put even more emphasis on stating the purpose of the workshop and differentiate it from traditional surveys and other information-gathering methods. We should not shy away from the



fact that participation will inherently take some time and rather focus on making the content engaging and creative. Moreover, we should consider whether there is a clearer way to create understanding on the concept of co-creation overall and encourage dialogue even more clearly. It is possible to like and comment on the responses of others on Howspace (and we did advice participants to do so). In fact, it functions much like a social media platform. We did not see participants take much initiative in such activities, though it can be argued that by reading the responses of others they continued the discussion threads. Nonetheless, we aim to encourage dialogue that is more direct in the future.

Here are some comments made:

“It is the first time that I participate in a project of this type and therefore I have no terms of comparison but it seemed to me a very interesting and well-structured project”. (Italian respondent).

Great! The phone just rings all the time as I do this, as it does every day now. Acute crisis management is still underway here, so focusing is my challenge. Of course, this is not the fault of the workshop”. (Finnish respondent)

“It made me think about many of the things I have had to do in my work during the crisis. And still wondering if it was done properly. So thank you for this opportunity”. (Estonian respondent).



2. Validation of the 1st ideas for BuildERS theoretical model

2.1 Validation process

Within Task 1.1, under the leadership of the University of Stavanger (Norway), BuildERS project partners developed a theoretical framework on how risk awareness, social capital and vulnerability are connected to the overall work of resilience building. This work was based on a literature review and a simplified iterative Delphi process. The final outcome was a conceptual model presented in D1.1 “First version of the unified theoretical framework on the concepts of risk awareness, social capital, vulnerability, resilience and their interdependencies”, submitted in October 2019 and then finalised in D1.2 “Final report of the unified theoretical framework on the concepts of risk awareness, social capital, vulnerability, resilience and their interdependencies”, submitted in September 2020.

The first draft of the conceptual model, including the preliminary definitions of key concepts (vulnerability, resilience, risk awareness and social capital), was presented in October 2019 in a series of small workshops with the members of the Advisory Board and the first responder partners of BuildERS (the Autonomous Province of Trento in Italy, the Estonian Rescue Board, the German Red Cross, the Police University College of Finland and the Salvation Army). In all the workshops, in addition to UiS, PUC and SU were present. Since, it was impossible to find a common day for all the relevant participants, the workshops were organised with the following schedule:

Table 1 Validation workshops

Participants	Schedule
Advisory Board member from Australia	Monday 21 October 2019 9:15 - 11:00 (CET) - Melbourne 18:15
BuildERS first responders partners (PUC, PAT, ERB, SAL)	Tuesday 22 October 2019 09:30 - 11:30 CET
Advisory Board	Wednesday 23 October 2019 09:15 - 11:00 (CET) - Tokyo 16:15
Advisory Board member from Sweden and BuildERS first responder partner (DRK)	Wednesday 30 October 09:30 - 11:00 CET

Suggestions were made on how to organise D1.2, on the draft model and on the key concepts. Participants were shown a figure from D1.1 on page 16 - First sketch of BuildERS model. The main critiques were related to: 1) the levels, which seemed unclear and complicated the understanding of the model; 2) the lack of measurements or ways to operationalise vulnerability; 3) the direction of the



arrows in the blue boxes, which suggested the idea of a continuum rather than of a circular process, which was suggested to be better to show interdependences; 4) the need to provide a long description, since the figure was not intuitively comprehensible.

The remarks were taken into account. The decision was to abandon the draft model 1 and to provide a new draft model without the levels and including the crisis management cycle and the UiS team summoned to improve the draft model and this led to figure 5 (see below). After this first round, the theoretical framework, the model and the key concepts' definition were discussed in plenum by the consortium during the first General Assembly in Budapest 18-19 February 2020. Workshop for WP1 Theoretical Framework (led by UiS) lasted for 3 hours and comprised of following themes:

1. Discussion on risk awareness/perception, social capital, vulnerability and their inter-dependencies within resilience building from a theoretical perspective
2. Discussion on the BuildERS model draft
 - Do you understand it?
 - Does it reflect BuildERS aims?
 - How to improve it?
 - Something missing?
 - Changes?
3. Conclusion: Overall implications of the model in BuildERS work (especially WP3, WP4 and WP5)

In March 2020, external stakeholders were invited in an online workshop via the Howspace platform. Four members of the Advisory Board and the first responder partners in BuildERS were involved as well. External stakeholders from subgroup 2 and 3 were invited, as well as other external stakeholders from the respective networks of the BuildERS partners, according to the following criteria: nationality (from the BuildERS consortium countries), academics with relevant experience, stakeholders with relevant expertise (crisis and disaster management, communication, DRR and so on).

Each BuildERS partner was asked to provide a list with 10 potential participants. WP6 leader (Police University College) was in charge to contact them and give instructions about the use of the Howspace platform. Unfortunately, the launch of the platform coincided with the outbreak of the COVID-19 pandemic. Despite of the time and resources used to involve as many participants as possible, eight external stakeholders took part in the workshop (see figure 4).



Validation of Theoretical Model and Key Concepts
(2nd round, March 2020)
Which organization do you work for?

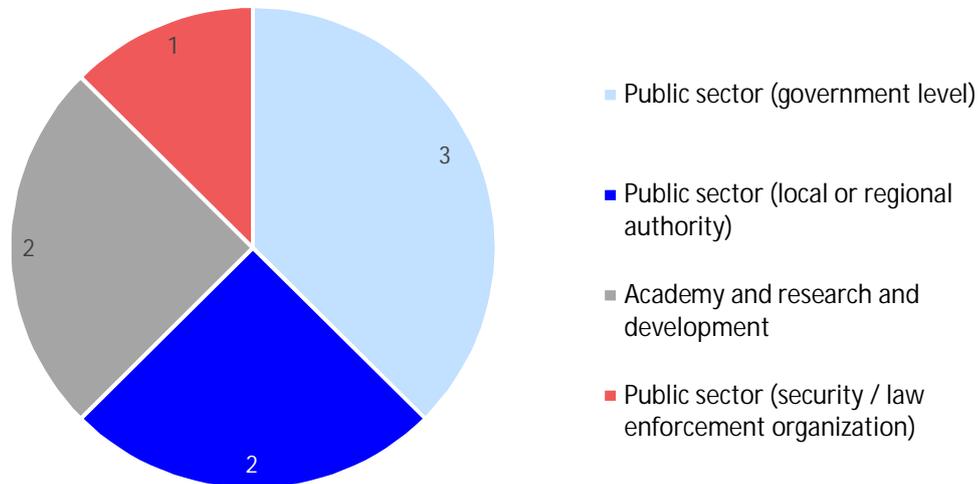


Figure 4. Validation of theoretical model: external stakeholders

2.2 Stakeholders opinions on the BuildERS theoretical framework/model

As stated above, the theoretical framework of BuildERS project was developed in an iterative writing process. Stakeholders were consulted and asked specific questions related to the key concepts and the theoretical model. The first round of validation was carried as conference discussions with the first responder partners and the Advisory Board. The second round engaged the external stakeholders in an online workshop that was arranged with a digital facilitation tool called Howspace. Both rounds of engagement were successful and provided guidance for the scoping study of WP1¹⁵. As the 2nd round was arranged within the WP6, we will present here its results; the whole iteration process, a simplified Delphi method is described in more detail in the BuildERS project report D1.2 Final report of the unified theoretical framework.

The external stakeholders were shown the draft version of the theoretical model (see figure 5) with key concepts (resilience, social capital, vulnerability, risk awareness and risk perception). Participants were first requested to share their first impression on the model without giving any in-depth explanation. The goal was to understand whether the visualization was intuitively and easily comprehensible, and whether it contained too much or too little information. Thereafter, the model

¹⁵ A scoping study of WP1 was a systematic literature review of earlier research findings. Its aim was to identify and analyse theoretical and empirical studies that focused on the relationships between vulnerability, social capital, and resilience within different stages of man-made or natural disasters/crises.



was presented with a detailed description on the linkages and assumptions. The participants were asked whether the description matched with the visualisation and whether changes were necessary either in the model or in the explanation or in both (for example, if some conceptual linkages seemed problematic or even wrong in their opinion). In addition, the participants could answer questions on the definitions of the key concepts and change the definitions according to their expertise.

Elements of Vulnerability		
Individual level	Group level	Governance level
<ul style="list-style-type: none"> • <i>Geographical exposure to hazards</i> • <i>Locational displacement</i> • <i>Cognitive challenges (low/non-education; mentally impaired)</i> • <i>Limited mobility</i> • <i>Social marginalization (e.g. excluded; homeless)</i> • <i>Limited access to information (technology, education)</i> • <i>etc.</i> 	<ul style="list-style-type: none"> • <i>Geographical exposure to hazards</i> • <i>Economic marginalisation of groups (poor; homeless)</i> • <i>Limited community cohesion</i> • <i>Demographic (elderly, children)</i> • <i>etc.</i> 	<ul style="list-style-type: none"> • <i>Low Institutional quality</i> • <i>Macro-economic disparity (GDP, income-distribution)</i> • <i>Poor political decision making</i> • <i>Civil society oppression</i> • <i>Lack of legitimacy</i> • <i>etc.</i>

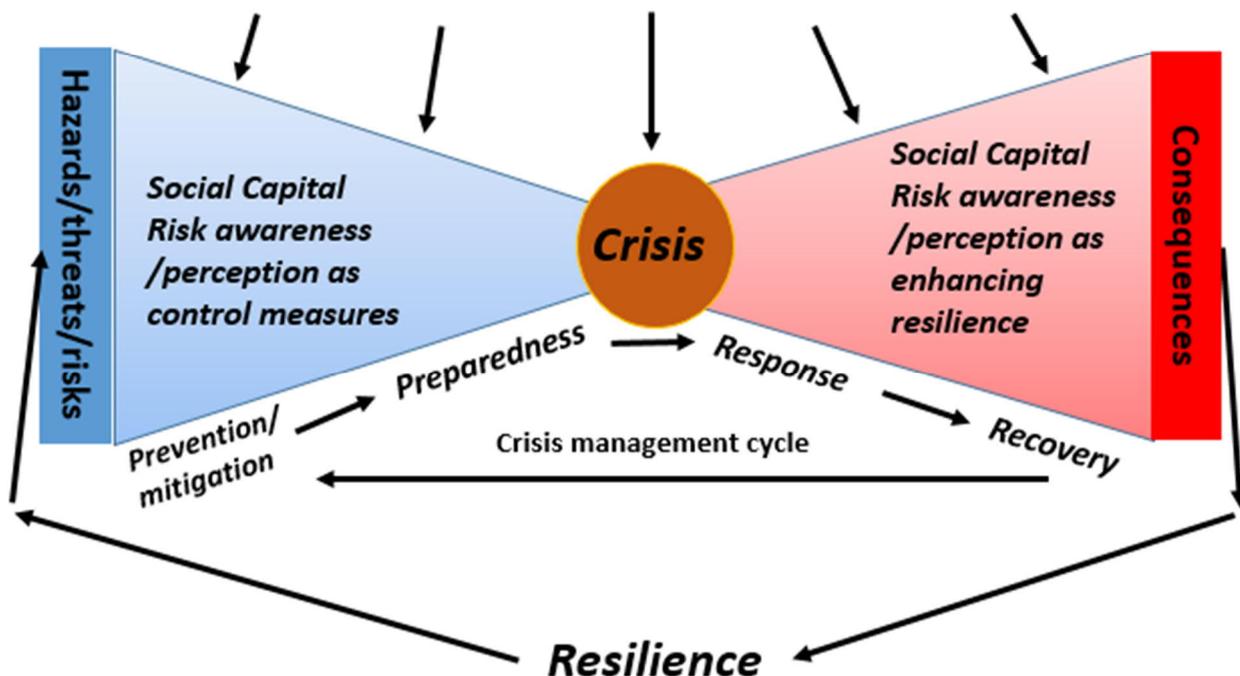


Figure 5 Sketch of the theoretical model of (a “bowtie” -visualisation) presented in Howspace

The participants suggested to develop a more “readable” model and to change the “bowtie” with another type of illustration (with ovals and arrows for instance), since without a textual explanation the visualisation was not intuitively understandable.

Two participants questioned the crisis management cycle, since they argued that the phases (prevention, mitigation, preparedness, response and recovery) can overlap. One participant suggested to include insurance as a resilience building measure, as a mitigation-phase “tool” in the model. Another participant saw that the phase or aspect of learning (from crisis/disaster) was missing in the cycle. As for the definitions of the key concept, the participants agreed on concise, but informative definitions. They all offered helpful inputs on how to improve the definitions. The tables below present the definition shown to the participants on Howspace and the elaborated definition after feedback.

Resilience: This definition of resilience did not receive substantial comments. It was only suggested to be more specific, but in general the definition was rated as good and clear.

Table 3. Validation of concepts: Resilience

Resilience	Definition presented on Howspace
	Process of patterned adjustment and adaptation in the face of risks, crises and disasters. It needs to be built in all phases of the crisis management cycle to make individuals, groups and societies more robust in facing future risks, crises and disasters.
	Definition elaborated after inputs from Howspace
	(BuildERS definition) Processes of proactive and/or reactive patterned adjustment and adaptation and change enacted in everyday life, but, in particular, in the face of risks, crises and disasters (Morsut et al., 2020)

Vulnerability: Some of the participants suggested that the definition of vulnerability should emphasize the *lack of capacity*. In addition, it was suggested that besides capacity, *ability to access* adequate resources should be added.

Table 4 Validation of concepts: vulnerability

Vulnerability	Definition presented on Howspace
	Situational capacity of individuals or groups to access adequate resources and means of protection to anticipate, cope with, resist and recover from the impact of natural hazards.
	Definition elaborated after inputs from Howspace
	(BuildERS definition) Dynamic characteristic of entities (individuals, groups, society) of being susceptible to harm or loss, which manifests as situational inability (or weakness) to access adequate resources and means of protection to anticipate, cope with, recover and learn from the impact of natural or man-made hazards.



Social capital: The feedback on the definition of social capital focused on the impact social capital has on resilience and vulnerability. One participant reminded of the *negative* aspects of social capital: some social networks and group-belonging could be harmful in a crisis. It was also suggested that besides shared norms and trust, *sense of belongingness* and *shared values* are important. In addition, the definition provided was not clear into what extent “group” and “network” included constellations of socialisation (individual- individual/individual with another group/group-group etc). Most of the participants were sceptical about the term “for productive purposes” which was too narrow. They argued that social capital should be rather seen as a *source of resources* that are useful in crisis situations, since social capital impacts *social cohesion* and *social capabilities* as well.

Table 5. Validation of concepts: Social capital

Social capital	Definition presented on Howspace
	Groups, networks, norms and trust that people have available to them for productive purposes.
	Definition elaborated after inputs from Howspace
	<p>Social capital (BuildERS definition)</p> <p>Networks, norms, values and trust that entities (individuals, groups, society) have available and which may offer resources for mutual advantage and support and for facilitating coordination and cooperation in case of crisis and disasters. (Morsut et al., 2020)</p>

Risk awareness: On risk awareness, the participants were quite in agreement that the presented definition is good. Nonetheless the definition was modified for BuildERS in other validation and co-creation rounds.

Table 6. Validation of concepts: Risk awareness

Risk awareness	Definition presented on Howspace
	“The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards” (UN-UNISDR, 2009: 22-23)
	The elaborated definition
	<p>Risk awareness (BuildERS definition)</p> <p>Collective (groups and communities) acknowledgment about a risk and potential risk preventing and mitigating actions, fostered by risk communication. (Morsut et al., 2020)</p>



The participants were also involved in a rating of official definitions of resilience, vulnerability and social capital provided by the United Nations, the European Union and the International Federation of Red Cross and Red Crescent, in terms of clarity and preference. All three received almost an equal number of votes.

After the Howspace platform workshop, which lasted from 4th to 20th of March 2020, the inputs received were discussed in an on-line meeting by the contributing partners of WP1 in May 2020. The definitions were adjusted following those inputs. The model in figure 5 was abandoned for a model that adhered to the advice from the participants. During the first research Colloquium definition and model were presented and received an extra round of comments and feedback that allowed to finetune them.

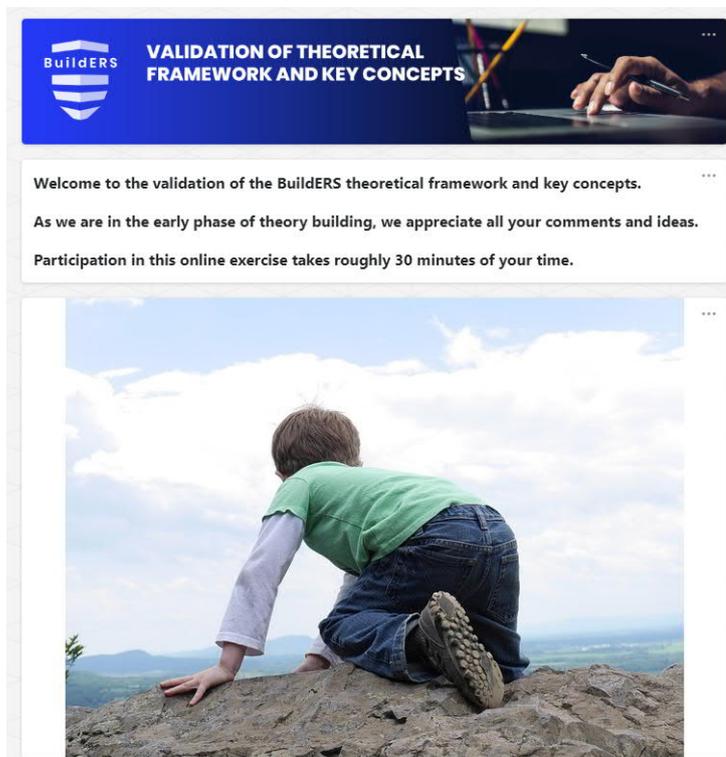


Figure 6. Excerpt from the Howspace -platform

3 Stakeholders' views on communication-related vulnerabilities

3.1 Online tabletop exercises on risk and crisis communication

Four tabletop exercises were held in Estonia, Finland, Germany and Italy. Participants mainly included crisis communication and crisis management experts. The exercises were tied to the current COVID-19 pandemic except for the German exercise, which combined the current pandemic and the heavy floods in Southern Germany. The topics to be discussed in the tabletop exercises were derived from the task description and the deliverables that were published in the winter and spring of 2020 (D1.3, D1.4 and D2.2).¹⁶ The results from the deliverables were analysed internally. The objective was to formulate thematic categories of the research results under which validation and co-creation activities could take place.

The main purpose of the tabletop exercises was to explore stakeholder views on risk awareness, social capital and vulnerabilities considering the project deliverables that discussed these themes. As stated in the introduction, the exercises introduced project results and included questions on vulnerability in terms of increasing risk awareness and risk perception with a focus on communication with vulnerable individuals.

We asked the following questions:

- What factors are linked to vulnerability in disasters if we look at it from a risk and crisis communication perspective?
- Which people are difficult to reach and why?
- Which people have been hurt due to false information (misinformation)?

The tabletop exercise participants were shown a summary of the analysis of communication related vulnerability and resilience in crises. The summary was based on the research findings documented in the BuildERS Deliverable 1.4.¹⁷ This table functioned as an inspiration to imagine factors linked to vulnerability in disasters in terms of communication (see Figure 4).

¹⁶ Morsut Claudia et al. (2020), D1.3 Report on Segments of Vulnerability Country by Country Basis - Inside and Outside the Official Data, Building European Communities' Resilience and Social Capital, BuildERS -project; Hansson, Sten et al. (2019) D1.4 Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital, BuildERS project; Orru, Kati et al. (2020), D2.2. Case Country Analyses and a Cross-country Comparative Analysis of the Functioning of Disaster Resilience Systems, Building European Communities' Resilience and Social Capital, BuildERS -project.

¹⁷ Hansson, Sten et al. (2019) D1.4 Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital, BuildERS -project.



	Increases vulnerability	Decreases vulnerability
Characteristics of communication	Short messages (e.g. tweets or emergency alerts) may be confusing and not state the source of the message.	Messages containing explicit information about the threat, affected area and protective actions (what, when and how).
	High number of simultaneous or even conflicting messages. Even official alerts can be mistaken as spam.	Trusted authorities and other trusted sources (like service provider NGOs or faith based organizations) use multiple channels in a coordinated manner.
	Sensationalist 24-hour news may promote disaster myths (e.g. exaggerate the impacts or present people as more vulnerable than they are - as passive victims without ability to self-organize for help).	Channeling information via trusted community members and peoples' already existing social (media) networks.
	Statistical information of the event and maps can be difficult to understand for some.	Narrative information (e.g other peoples' stories about the situation) may support individuals' decision making.
	National broadcasting may provide too generic and geographically wide information.	Local information may be more accurate, detailed and relevant for people.
Receiver's circumstances	Discrimination and hate speech push vulnerable groups further to the margins of society.	Including marginalized groups in awareness building for instance at schools and work places.
	A person who is not using multiple news sources and is not skilled in using internet search engines, is very vulnerable to online misinformation. Overall reach of the social media is still quite poor.	Social media messaging should be combined with the more traditional channels. Radio is the most trusted media in Europe in all age groups.
Disaster context		
	If the nature of the threat is intangible, time unlimited and deadly (threat is difficult to spot or see) one more easily believes rumors.	Government agencies should understand the phenomenon of rumormongering and its processes. Social media communities can be used for collective fact-checking and debunking myths and rumors.
	False information is most likely spread in terrorist attacks and other man-made catastrophes.	

Figure 7 Excerpt from the tabletop exercise material: vulnerabilities related to crisis communication

In the form of SWOT analysis¹⁸ exercise participants were requested to consider their internal strengths and weaknesses in terms of communication with vulnerable people and then assess three positive and three negative phenomena in their working environment.¹⁹ SWOT is a brainstorming tool for the analysis of internal resources and capabilities and linking these with the external opportunities and challenges. SWOT is a snapshot in time of the contemporary situation combined with a prospect to future risks and possibilities.

First, stakeholders were requested to think about the internal strengths and weaknesses of their organizations in disaster communication. We requested participants to consider their own working environment and contemplate the following questions:

- Which people are difficult to reach with current communicational means and channels?
- Which organizational factors hinder or support reaching vulnerable individuals in disasters?

¹⁸ SWOT comprises of an analysis of internal strengths (S) and weaknesses (W), and further of external opportunities (O) and threats (T).

¹⁹ Participants were shortly explained the idea of SWOT in this context. As the responses were shown to all others, participants were advised to go through their organizational strengths and weaknesses on a general level. We noticed that sharing this kind of information — weaknesses in particular — with the unknown participants using only a pseudonym was not easy. So, some respondents left this part unanswered or replied only shortly.

Next, we provided three examples of common threats in disasters: 1st: publicity-oriented behaviour, which threatens personal and public safety like photographing the scenes and publishing it in the social media, 2nd: unwanted publicity of victims like sharing their personal data, and 3rd: stigmatization and hate speech towards the suspected. We encouraged stakeholders to imagine means to respond these challenges. Finally, we asked for the participants' opinion of the functionality of short messaging, like sending emergency alerts or posting Twitter-feeds. Short messaging applications are becoming more and more common communication channel among the first responders and other service providers. Yet, as stated in the BuildERS Deliverable 1.4 , research has shown that people have difficulties in assessing the content of very short messages. They may be confusing as they may not always tell important details about the disaster or provide guidance for protective action.

Furthermore, the tabletop exercises took further the preliminary BuildERS findings in terms of strengthening social capital and building on social support networks and volunteers. Within a fictional disaster scenario, exercise participants were invited to imagine key partnerships in organizing efficient risk and crisis communication. They were also requested to create ideas for collaboration with spontaneous volunteer networks in crisis. Specifically, we asked the participants opinions on virtual or digital volunteering. An example shown was a group of volunteers in Germany, who designed maps to inform citizens of (im)passable areas during flooding. Also, we asked their opinion of the role of social media influencers as crisis communicators.

The Estonian and Finnish scenario narratives were related to COVID-19 pandemic and its future development. The German narratives revolved around heavy floods in Southern Germany. The first “We are doing great!” –scenario focused on preparedness in a situation when there were new opportunities for crisis communication. Participants were asked, how they would communicate, if they could use their internal strengths and capacities and take advantage of the new communication tools and technologies.

The main elements of this scenario were the following:

- Since a similar crisis took place some years ago the nation or municipality has updated its contingency plans
- The role of NGOs and NPOs has been recognized in providing spiritual and social support
- Several initiatives have launched recognising the role of spontaneous volunteers and social media networks in emergencies
- Technological development has been widespread (communication technologies for citizens, online access to services, crowdsourcing, big data)
- Training is offered about the use of different technologies to citizens
- Trust in institutions is high

The second “We try to survive” –scenario emphasized responses to a severe disaster situation, when false information was spread both deliberately and unintentionally. In this context, participants were asked of their communication strategy if they would have limited means and resources to reach people, correct false information and fight against information influencing.



Correspondingly, the elements of this second scenario were the following:

- Misinformation is widely spread online
- There is deep distrust in new technologies and tools that have been developed for the use of crisis management
- Lack of resources in volunteer organizations and poor social support networks online and otherwise; current operators are overwhelmed
- The nation has become highly polarized
- Trust in institutions is low

Schedule

The exercises were organized in the spring of 2020. The Howspace platform was open for the participant for 2 weeks so that they would have time to take part during the COVID-19 pandemic. The Italian tabletop exercise was available for longer due to the holiday season. All materials were translated by contributing project partners to native languages. Each contributing partner was responsible for contacting the potential participants in their country context and sending the Police University College the respective e-mail domains to be entered on the site. The participants received detailed instructions as to how to register on the site and the partners sent e-mails to the participants that detailed all relevant information. All information was given in native languages.

Table 6. Tabletop exercise schedule

Tabletop exercises			
Country	Time	Number of Participants	Contributing partners
Finland	25.3.2020 - 9.4.2020	10	Police University College (PUC)
Germany	15.4.2020 - 1.5.2020	10	the German Red Cross (GRC)
Estonia	4.5.2020 - 24.5.2020	8	University of Tartu (UTA)
Italy	6.7.2020 - 9.8.2020	17	the Autonomous Province of Trento (PAT)

Participants

Altogether 45 experts took part in the exercises: 10 from Finland, 10 from Germany, 8 from Estonia and 17 from Italy. Most participants from Estonia (six) and Finland (seven) worked in the public sector, either in the field of rescue and crisis management or security/law enforcement, or represented a state level, regional or local authority. Three Finnish participants represented NPOs and NGOs, being their communication specialists or researchers. In addition, one Estonian participant worked in the private sector and another person in an education and training institution. Correspondingly, four German participants worked in the public sector (rescue and crisis management organization), four persons in an academic research and/or other level education institution, one in a non-profit organization and one in a technology company. Italian participants mainly represented the public sector (6 persons from relief organisation and crisis management) 2 persons representing local or regional authority and 1 representing a state authority, 1 person from law enforcement, 6 persons from non-profit sector (volunteer organisations/NGOs) and representing private sector.



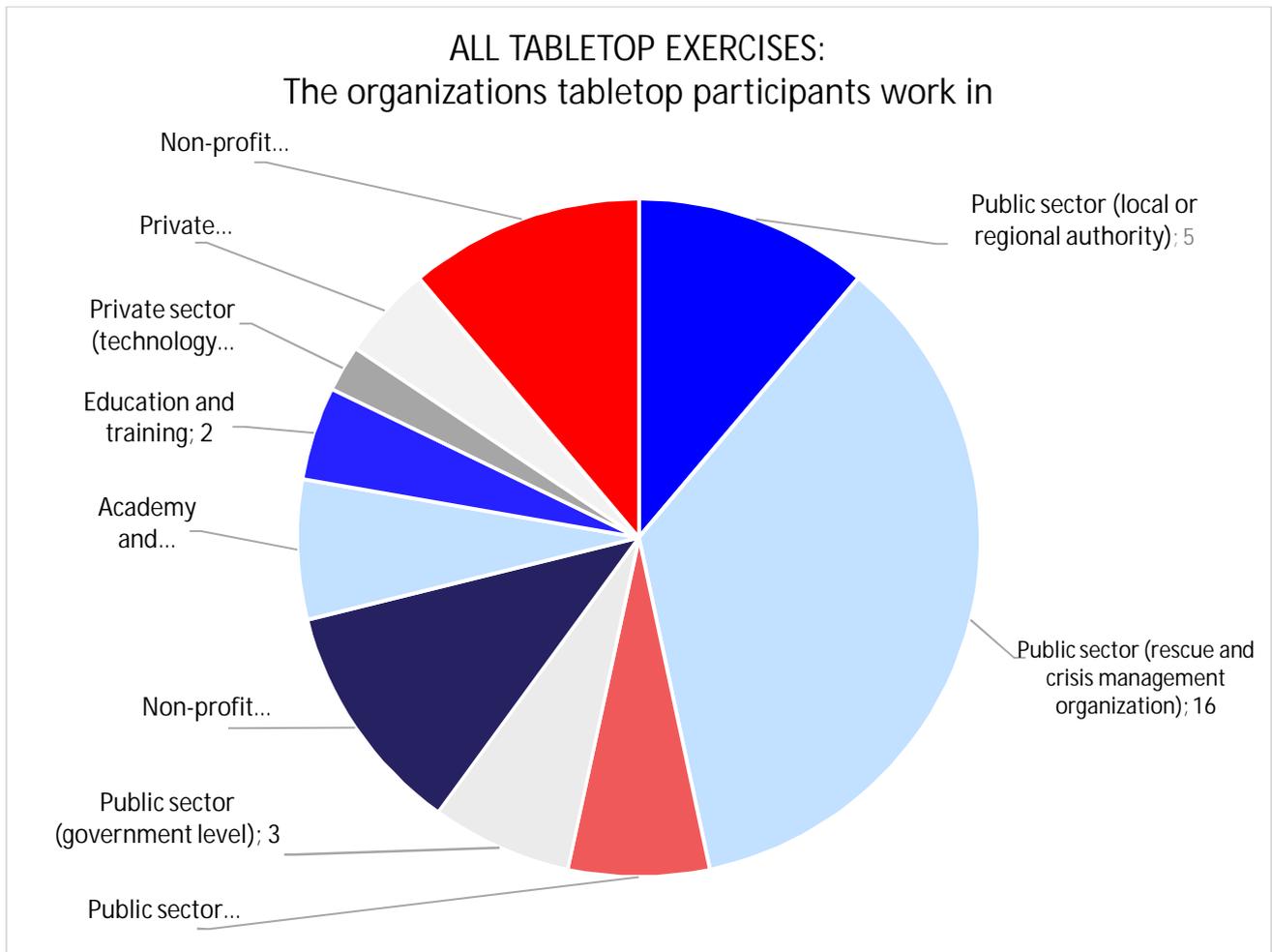


Figure 8. Participants represented a variety of organisations involved in crisis management and crisis communication



Among the participants were both junior and senior level practitioners, who had working experience in the current field from less than five years to more than 20 years.

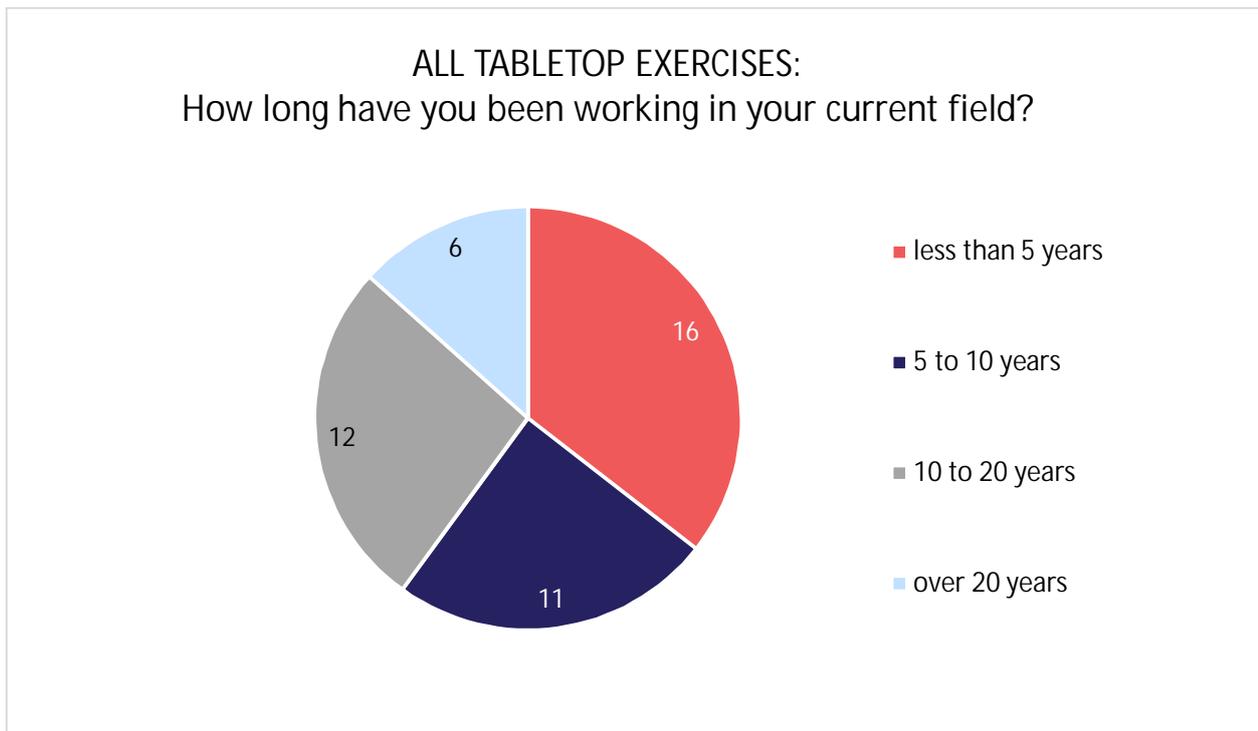


Figure 9. Level of experience in all tabletop participants

The figures below show at what level each participant worked:

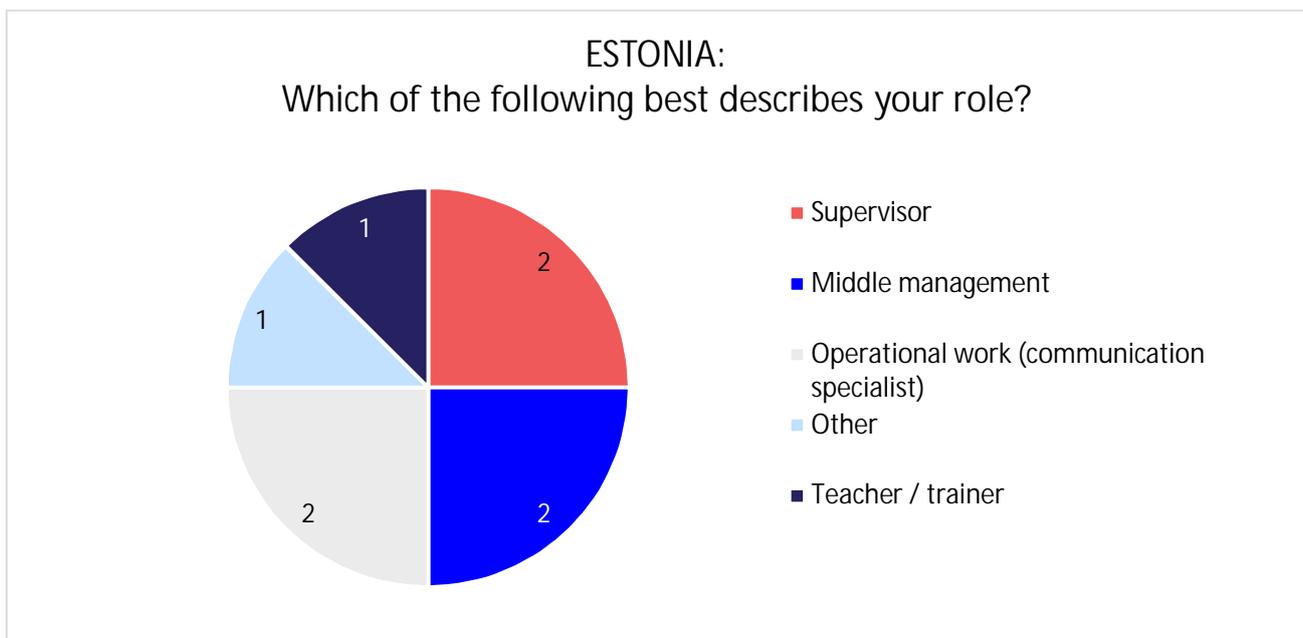


Figure 10. Estonian exercise participants' working roles



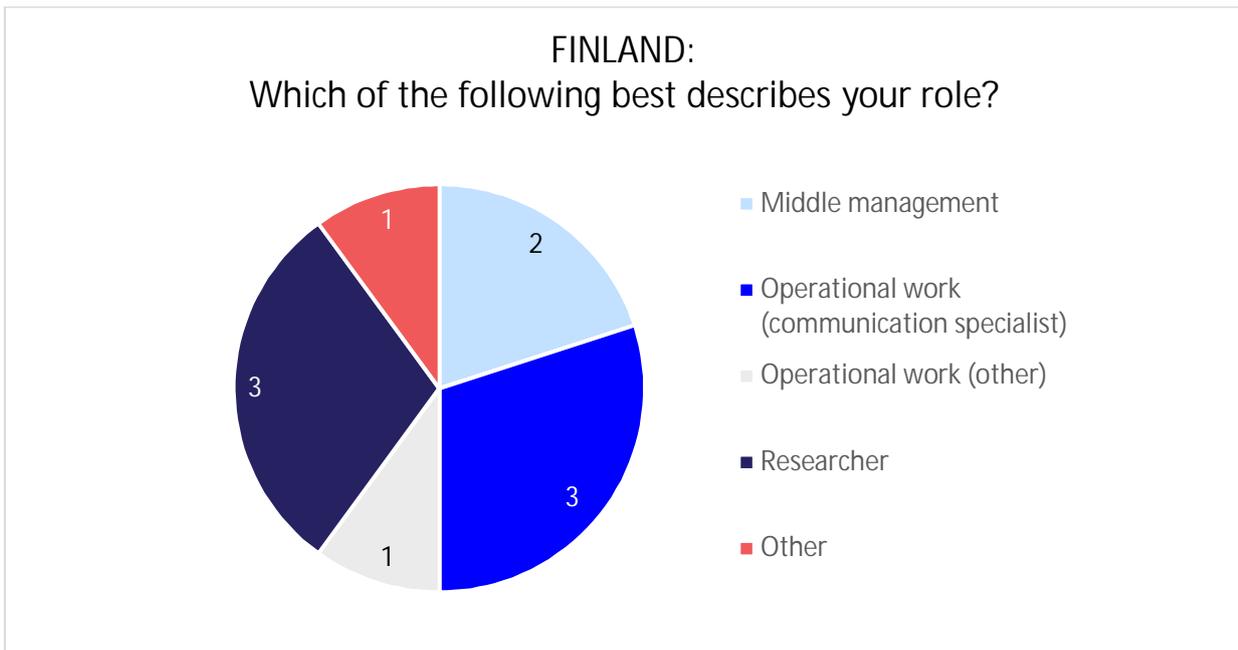


Figure 11. Finnish exercise participants' working roles



Figure 12. German exercise participants' working roles



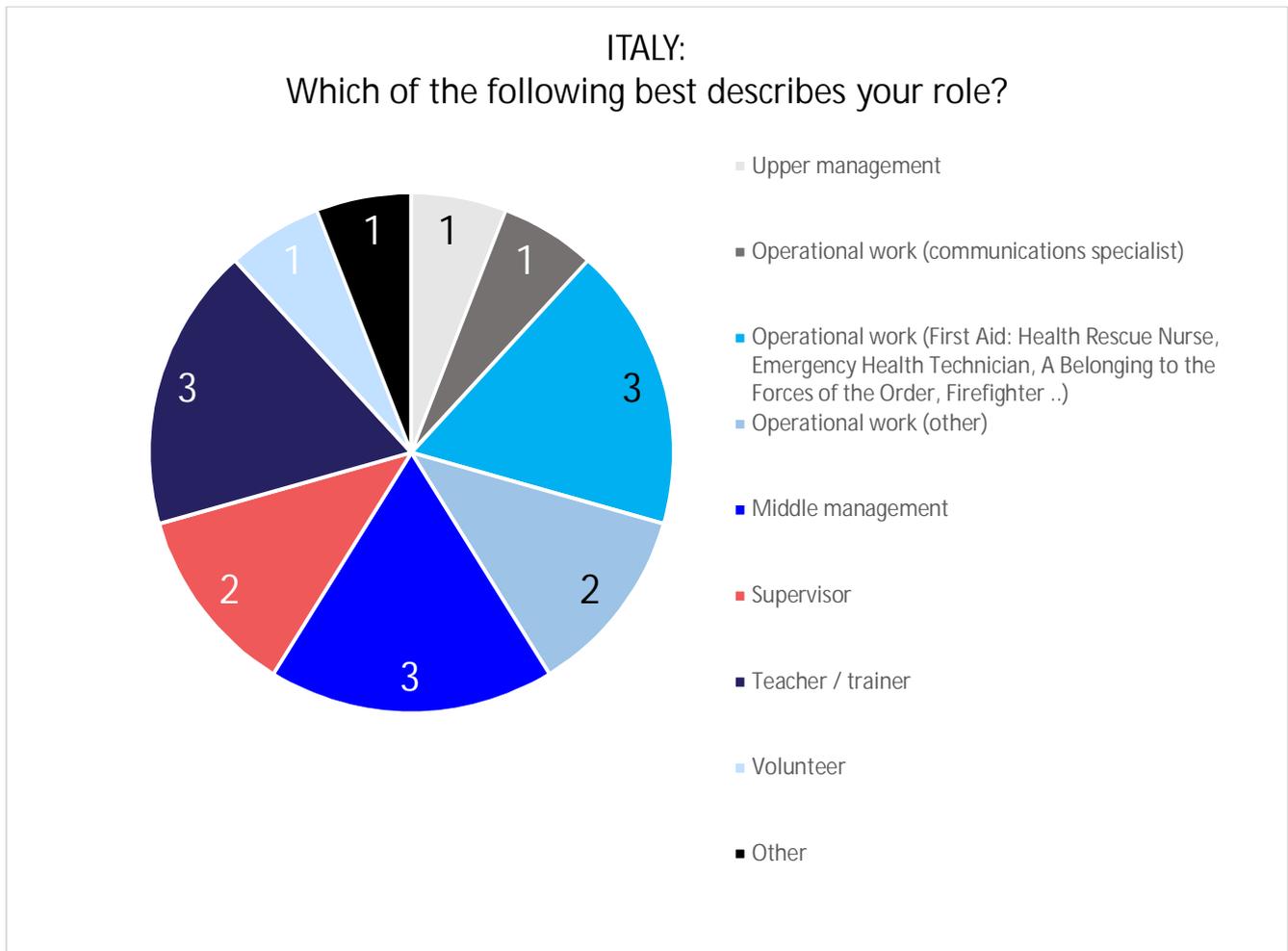


Figure 13 Italian exercise participants' working roles

3.2 Key results of the tabletop exercises on risk and crisis communication

Next, we go through the results of the tabletop exercises in detail after which we reflect the results considering the BuildERS research. The following chapters present the perspectives and ideas of the Finnish, Estonian, German, and Italian stakeholders. As their number is relatively small (45), and they participated anonymously in discussions, they do not represent any official opinions of their background organizations. Participants were able to partake in activities any time of day within a two-week period and visit the platform several times. In principle, this allowed them to open the discussion topic, and come back later and view the others' responses and comments. The exercise activities took approximately 45 minutes.

To explore vulnerability in relation to communication, we started by asking the participants to reflect who are most difficult to reach in a crisis. Furthermore, based on the fictional disaster scenarios, stakeholders imagined, which people are critical to reach in the crisis context.



Who are difficult to reach in disaster situations?

According to the Estonian participants, the people that are most difficult to reach with official crisis messages include those with hearing or visual impairments, elderly (especially those living alone), and the Russian-speaking minority. The Finnish and German participants also mentioned people with limited skills of national languages (Finnish or Swedish in Finland, German in Germany) and English as vulnerable in crisis situations. These people may also lack other capacities: for example, have a low level of media literacy to assess the legitimacy and validity of information sources.

Additional factor may be lack of social contacts with communities, where the correct information is shared. Or the same persons may not use or do not have access to digital media; reasons may for instance be poverty or physical or cognitive disability. Italian responders especially emphasised the importance of digital communication channels and stated that those without digital skills (pointing out the elderly and those without economic means) were hard to reach with current communication channels and means. Furthermore, those who are critical of the mainstream media, the impartiality of the research community and expert organizations, are challenging to reach with current means. Crises may boost extremist opinions, and thus create inaccessible "information bubbles". In addition, marginalized people were mentioned multiple times as well as people who have been institutionalized (elderly or hospitalized people) who do not necessarily have access to media. Moreover, Italian respondent mentioned irregular migrants, seasonal workers, and tourist as difficult to reach.

As stated in the Deliverable 1.4, participants noted that the communication challenges are not only related to the information receivers' situation, but also to the attributes of communication: communication methods and channels, and the content of messages and information.²⁰ Estonian participants saw that a major barrier to communication in the context of crises is that the official crisis messages are often (a) too complex, incomprehensible, or contradictory, and/or (b) too general, not tailored to the needs of specific local audiences. According to German participants officials have too little presence in social media and may not always react fast enough in dynamic crisis situations. Finnish participants by turn saw that it is difficult to use multiple communication channels simultaneously and their accessibility is not wide enough; standard crisis communication may not for instance reach persons with dyslexia, migrants or someone who is visually impaired.

Deliverable 1.4 states that trust in information sources may also play a part in whether people react to a hazard message. If the source is not considered trustworthy, people usually seek information from other sources.²¹ The experts mentioned people who do not rely or trust in mainstream media, the research community and expert organizations are difficult to reach in disaster situations. The viewpoint was not explicitly mentioned or covered by the existing deliverables. Nonetheless, the experts did not elaborate on how trust (and reach) could be cultivated other than generally emphasising the importance of local knowledge and contacts in their answers.

²⁰ Hansson, Sten et al. (2019) D1.4 *Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital*, BuildERS -project.

²¹ Hansson, Sten et al. (2019) D1.4 *Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital*, BuildERS -project, p. 18-19.



Which organizational aspects support or hinder reaching vulnerable people?

In Estonia, participants highlighted organisational strengths related to competent communications teams (experienced, systematically trained), crisis managers acknowledging the importance of crisis communication and having a strong network of collaborators and partners (volunteers, local governments). In Finland, participants stressed the *high level of trust* by citizens and media as well as extensive (local) networks. German participants also mentioned trust, strong national presence, and existing contacts with vulnerable people.

Many Finnish participants also stressed the importance of *local knowledge and grass-roots level cooperation* with NGOs and NPOs like sports associations as well as actors that work with linguistic minorities. Both Finnish and German participants mentioned the level of experience in crisis management as a supporting factor. In Finland, crisis response was seen to be swift and flexible and cooperation with other authorities and media well established.

Italian respondents saw strengths in their affiliated volunteer networks that are quick to mobilize. They often act in the region where they live and thus possess local knowledge. This corresponds with responses by some of the Finnish participants. The respondents also emphasised trust stating for example that there is high trust in known volunteer institutions by the population. Trust was perceived as important for crisis communication as it could be utilised to disseminate correct information during the early days of COVID-19. Another point that Italian respondents emphasised besides strong affiliated volunteers with local knowledge was training. Strength was perceived in existing collaboration networks already active and present in an area and the opportunity to train with them. Many highlighted good risk analyses, the importance of sharing information and shared education as important organisational strengths that support reaching vulnerable people.

In line with their organizational strengths, the Estonian participants stated that organisational weaknesses that hinder reaching vulnerable people include *lack of training, lack of experience, difficulties with preparing for and responding to new threats*, and difficulties with *gathering information about vulnerable individuals*. Finnish participants stated also that the *complexity of the media environment* hinder reaching vulnerable people. There are multiple communication channels in a rapidly developing and demanding communicational environment and organizations must adopt old and new communication channels and tailor messages to different groups. One Finnish participant mentioned that the media chain can be problematic: first news spread on social media after which news stories are printed in online media outlets and then the TV news and finally in print media. If a person has access to TV and newspapers only, the spread of the message takes too long time.

Deliverable 1.4 recommends that people should be encouraged to use local relevant social media channels so that they are better prepared during crisis.²² However, exercise participants saw that information on social media may not reach minority language groups or people with other challenges or issues (mental health issues, visually impaired, literacy problems etc.). Some mentioned that we would need more research knowledge on whether information on social media reaches vulnerable people. One clearly problematic fact is that most crisis communication takes place in native languages. Thus, linguistic minorities are at least potentially vulnerable in crisis. This is noted also in D2.3, which recommend that crisis managers consider communication problems that stem from

²² Hansson, Sten et al. (2019) D1.4 *Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital*, BuildERS -project, p. 30



citizens' lack of native language skills.²³ One participant saw that current channels (factsheets, e-mail, social media channels) do not paradoxically reach those who would most need the information.

Many Italian respondents raised issues related to internal circumstances within crisis management such as recognising each other's expertise and chain of command in a crisis. Actors responsible for crisis management should promote shared trust in each other's competence and spread information in a coherent manner. Some felt information sharing was lacking between different actors. They called for mutual training, tools for shared needs analysis and ways to overcome linguistic and cultural barriers when trying to reach vulnerable individuals. They also mentioned that some people may be left out of official rescue plans as they are not present in official registries. Furthermore, there are no shared networks that identify vulnerable people. One respondent called for better collaboration with the representatives of vulnerable individuals to tackle the problems.

Where Finnish participants called for *contact information registers* or *lists of regularly updated cooperation networks*, the German participants stated that a *database with information about people in need* would be helpful. Germans also felt that links within the organization need improvement as well as links between different sectors involved with vulnerable people (civil protection, welfare, and social work). They were also of the opinion that too many levels of decision-making can act as hindering factor when trying to reach those that are vulnerable.

According to deliverable 1.4 more should be invested in gaining a better understanding of the local information environment and preferences.²⁴ Tabletop exercise participants seem to reflect the previous viewpoint. They too highlight the need to *tailor messages* to reach certain vulnerable individuals. It seems that we should analyse how to reach people that receive their information mostly or solely from traditional media. Furthermore, stakeholders seemed to believe that there is still work to be done in the *collaboration between different sectors and organisational segments*. Though experts in all countries felt that they had good collaboration with local stakeholders, they also mentioned that they cannot reliably estimate the reach and accessibility of their messages.

Based on the answers, it seems that experts are aware of the interaction of factors that creates vulnerability. This is also in support of the BuildERS project research findings. Challenges exist at different levels. Some are more societal and structural (like media literacy), and others can be changed perhaps a little more easily such as investing in and considering the role of stakeholders that have existing contacts with the vulnerable people.

²³ Bäck, Asta (2020), *Social Media Campaign Analysis and Governments' Responses to Disinformation*, Building European Communities' Resilience and Social Capital, BuildERS -project, p. 37

²⁴ Hansson, Sten et al. (2019), *D1.4 Communication Behaviour in Europe and Vulnerabilities*, Building European Communities' Resilience and Social Capital, BuildERS -project.



Risk awareness: tackling harmful behaviour

We asked the participants to evaluate potentially harmful new media related behaviours such as photographing disaster sites and sharing such materials to discern expert experience and opinion on this phenomenon and how such activities have been tackled in exercise countries. Estonian participants stated that their means to control harmful publicity-oriented behaviour include asking the police to keep observers further away from the accident site and asking people via (social) media not to publish any content that could harm the victims.

In Finland, roughly half of the participants had either experienced the phenomenon or heard of it from others in the field. One participant stated that it is an ever growing and continuing problem. Another participant stressed the role of authorities in highlighting the dangers of such activities in social media. Such stories are often picked up by the media and this was a more influential method than regular information campaigns. Many of the Italian respondent were familiar with the phenomenon. They gave examples related to COVID-19 referring to people posting photos of group gatherings without masks. Sometimes such images can even be perceived as examples of defiance. Leading by example was important: some felt the phenomenon could be countered with good risk communication while quite many emphasised mitigations with civic education.

Public campaigns were also deemed necessary from time to time. As mentioned in D2.3, for instance in Finland there has been a citizen-initiated campaign to stop taking photos and videos in disaster and accident sites. People also disapproved media's eagerness to request these photos and videos.²⁵ One tabletop exercise participant stated that the issue should be highlighted in different channels regularly and storifying should be used to educate people. Debate on such phenomena should be public so that real information receives attention. D1.4 did mention that narrative information has a stronger influence on individuals' behaviour than statistical information.²⁶ None of the deliverables specifically mentioned storification as a method for increased risk awareness.

Vulnerability: privacy of victims, eyewitnesses, and family members

We also asked participants how we might protect the privacy of victims, eyewitnesses, survivors, and family members of victims to discern experts' thoughts on disaster victims (direct or indirect) vulnerability. Estonian participants stated that the means to protect the privacy of disaster victims, eyewitnesses, survivors and family members of victims include discussing ethical principles with journalists (setting journalism ethics and standards how not to hurt victims) and monitoring the media for potentially harmful content. However, participants stated that journalists are generally aware of the ethical standards and violations are rare. German participants also highlighted that media and social media should consult authorities before publishing pictures or information on affected people. German participants stated that a culture of compassion and consideration must be furthered in social media; otherwise, it is impossible to protect those who have been affected.

²⁵ Bäck, Asta (2020), *Social Media Campaign Analysis and Governments' Responses to Disinformation*, Building European Communities' Resilience and Social Capital, BuildERS -project, p. 6; 58

²⁶ Hansson, Sten et al. (2019), *D1.4 Communication Behaviour in Europe and Vulnerabilities*, Building European Communities' Resilience and Social Capital, BuildERS -project, p. 18.



In Finland, one participant emphasized first responders' responsibility to remind people on the spot that releasing photos of victims is unethical and against good journalistic conduct. Also, the Italian respondents emphasised the role of authorities and their responsibility to create a secure environment. The role of media and journalism was stressed in the Finnish responses as it was in the Estonian example. One participant stated that popularized news on why victims' names and photos should not be released is needed. They gave an example: during the tsunami in Asia, the Swedish media published the names of the victims. Consequently, their homes were ransacked. An Italian respondent also emphasised information campaigns for the protection of sensitive data and privacy. Such instances educate the media on why publishing such information can be harmful. One participant stressed the role of active community members and multicultural NGOs who could act as communicators in behalf of the persons being targeted and think of ways to guarantee protection. One Italian respondent stated that to reach a wide audience in an earthquake or a flood such risks cannot be completely avoided. Nonetheless, the respondent called for personal accountability regarding harmful information. It can also be mitigated with education which was seen as a slow but effective solution. One responder stated that legislative changes should be made, and such incidents should be reported to the police. Another stated that legislation would not put restrictions on freedom of information and documentation and thus the problem is mainly cultural and related to personal ethics. Indeed, some responders place responsibility on the consumers as such information will only be shared if there is an audience for it while others emphasised better regulation.

Experts mentioned two main factors in relation to the subject of vulnerability increasing communication activities. One: journalistic responsibility and the role of media and, two: the role of community members as mediators and protectors. D1.4 does mention that false information may spread via news stories continuing that journalists' stories may result in harm when their reporting is based on unverified information or the story misrepresents the situation.²⁷ The *collaboration between crisis management organisations and journalists* was mentioned several times during the workshops; so far this has not been a visible subject matter in the existing BuildERS deliverables. Thus, the BuildERS project should examine in more detail the opportunities related to the collaboration with journalists and media. More representatives of media should also be invited to participate in our co-creative activities. Ethically such issues are difficult to handle but responders felt that education and information campaigns might be helpful in changing the culture.

Vulnerability: short messages

Deliverable 1.4 listed communication channels that can increase vulnerability. One such method are short messages (posts on the social media channel Twitter, SMS text messages, emergency populations warnings) which can cause confusion as they do not necessarily contain all necessary information.²⁸ We asked the respondents about their opinion on the functionality of short messages in crisis.

²⁷ Hansson, Sten et al. (2019), D1.4 Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital, BuildERS -project, p. 25.

²⁸ Hansson, Sten et al. (2019), D1.4 Communication Behaviour in Europe and Vulnerabilities, Building European Communities' Resilience and Social Capital, BuildERS -project, p. 18.



Estonian participants stated that short messages can be used effectively in crisis communication if they are carefully worded and provided in several languages. For example, SMS messages are more personal — they may support other crisis messages and drive home the severity of a hazard. In Germany, SMS messages were also regarded positively as they are quick way to reach a large audience. Their shortcomings are related to the small amount of information in them due to their technical framework. One Finnish participant noted that Twitter posts need to be carefully designed out because their shortness gives room for misunderstandings; thus, a tweet must be both unambiguous and informative. Italian responders felt that short messages are useful for quick, one-way communication to manage emergencies, communicate alerts, inform about escape routes and behaviours to be followed.

Overall, any kind of short messages must be accurate and unagitated. Many seemed to believe when prepared carefully, short messages can be a good way to communicate to citizens in a crisis. It was stated that short messages work best when the message to be relayed is clear and simple, such as instructions for handwashing. They can also prevent the formation of an information vacuum and rumours from spreading. An Italian respondent stated that short messages were perceived to “fill the space” effectively that might otherwise be claimed by some other instance. They were even seen as essential to inform and communicate towards the greater population. Short messages to citizens were also seen as an indication of authorities’ priorities. Many responders, especially Italian responders, emphasised that official and institutional twitter profiles are a fast and concise communication tool if they are well-managed. Indeed, such channels should be managed by official, certified, recognized actors and contain usable information for the population.

A succinct message can be a sure way to acquire the attention of citizens. Especially the young people are accustomed to read short messages; acronym TLDR or tlrd is often used in social media posts to comment that the texts was “(t)oo (l)ong — (d)id not (r)ead”. However, in a crisis it should be remembered that people interpret messages from different premises. One participant stated that short messaging is “its own art form”: how to formulate a message that is clear and informative when the subject matter is complex and difficult. Not all participants were comfortable in using social media.

Experts opinions are somewhat in line with the findings of D1.4. which states that in general crisis messages should be specific, consistent, clear, and accurate and include explicit conclusions about the threat. They are a quick way to relay information in a fast-paced situation. However, tweets and other types of short messages can be confusing, and people have difficulties assessing their content as they often do not contain enough information.²⁹ Thus, they do not work alone. Therefore, short messages should always be complemented with additional information. For example, info graphs and embedded links could be useful. Cooperation with the media is also essential. Journalists can for example build news stories around the short messages.

²⁹ Hansson, Sten et al. (2019), D1.4 *Communication Behaviour in Europe and Vulnerabilities, Building European Communities’ Resilience and Social Capital*, BuildERS -project, p. 18.to



3.3 How disaster situation impacts risk and crisis communication strategies — Scenario-based analysis

Tabletop exercises were based on a working method, which was a combination of SWOT and TOWS analysis. SWOT analysis combines the contemporary situation analysis with a view of future risks and possibilities. TOWS analysis takes a step further and helps to get a better understanding of strategic options available in different situations. Thus, in a way TOWS analysis continues from SWOT analysis. TOWS analysis can help to assess how to maximize internal strengths to use external opportunities (positive S + O strategy), or alternatively minimize internal weaknesses to avoid external threats (defensive W + T strategy).

SWOT analysis

SWOT analysis is an acronym for identifying **strengths (S)**, **weaknesses (W)**, **opportunities (O)** and **threats (T)**.

SWOT is a good brainstorming tool for the analysis of internal resources and capabilities and linking these with the external opportunities and challenges.

SWOT is a snapshot in time of the contemporary situation combined with a prospect to future risks and possibilities.

Please think about your internal strengths and weaknesses in disaster communication below. After that, please tell us your opinion on current threats and opportunities related to crisis communication.

You can also "like" comments made by others.

When you think about reaching vulnerable groups in disasters, ... what would be your main organizational strengths? (For example level of trust, volunteer networks, training, media monitoring etc.)

Please answer on a general level. Your answer will not be shown to other participants.

strength	weaknesses
Opportunities	Threats

Figure 14 Excerpt from the tabletop exercise

Exercise participants were shown two different fictional disaster scenarios. The first scenario was more positive and the second included several challenges in terms of crisis communication. The first "We are doing great!" -scenario (later referred to as the GOOD scenario) focused on preparedness in a situation, where there are new opportunities for crisis communication. Volunteers were willing to help, and new communication tools and technologies were available. Within the second "We try to



survive" -scenario (later referred as the BAD scenario) false information was spread both deliberately and unintentionally and the actors had limited means and resources to reach people, correct false news and fight against information influencing. The aim was to elaborate the challenges in disaster communication when a) the authorities have sustained their normal level of trustworthiness and credibility, and are thus trusted as information providers, and b) when there was aggressive sharing of false information aiming to question trust and confidence towards authorities.

Before these two different crisis scenario activities, participants were requested to consider their internal strengths (S) and weaknesses (W) in terms of risk and crisis communication. Furthermore, we asked of their opinion of three opportunities (O) and three threats (T). Aim of the tabletop exercise was to reflect the internal capacities and the operational environment, and further identify feasible strategies for different kinds of communicational situations.

Next, we go through the results of scenario-based sections of the exercise. It is good to keep in mind that the Finnish, Estonian and Italian scenarios represent an outbreak of global pandemic and the German scenarios were related to heavy flooding in the Southern Germany. Although we had planned to use different scenarios in each exercise, we decided to change the scenario due to the outbreak of COVID-19 pandemic, to lower the threshold of participants to take part in our workshop. Most of the stakeholders needed to prioritize actions that were somehow related to the pandemic. On the other hand, we saw it as a great opportunity to do brainstorming by using the ongoing crisis as an "inspiration" for the imagining of communication strategies. This way participants were able to reflect the current situation with the future risks and opportunities.

Who is vulnerable in crisis: people that are critical to reach in the scenario situation?

In the GOOD scenario of global pandemic, Finnish participants stated that the people that are critical to reach include authorities and NGOs that have direct contact with risk groups. Information should be targeted to those individuals that ignored restrictions in the previous pandemic, employees in the critical service fields and critical infrastructure, volunteers who work with civilians and people who would not otherwise receive information, use social media or read the news as well as people who do not speak the national languages. In the GOOD Estonian scenario of global pandemic, the people that are critical to reach include businesses that are affected, vulnerable people (elderly, chronically ill patients), local government and hospitals. The individuals that may become more vulnerable include children, elderly, people who do not speak Estonian (including foreign students and tourists) who do not use local news media, and people who do not have a smartphone. One Italian respondent believed that the people that did not take the necessary measures in COVID-19 pandemic have been well analysed for future cases and should guide future actions. Another stated that everyone should be informed with modern communication methods if possible. Nonetheless, if there are limits imposed by the communication system, a priority rule should be followed starting with those that are most vulnerable. They elaborate that in such a case it becomes useful to use volunteers, if it is not known exactly if everyone has access to regular communication channels. Some Italians mentioned the elderly, families, immigrants/foreigners, families with disabilities and the poor. Many mentioned that though all should be reached, different tools and methods of communication should be considered when reaching different people.

In the BAD scenario, Finnish participants stated that the people that are critical to reach include risk groups, young and old people, people who do not speak national languages or lack language skills, those who do not use social media or read the news, those whose access to factual information has been recognised as poor, authorities, health and social care workers, employees in the critical



infrastructure, undocumented migrants, homeless people, people who work with people that have limited language skills, volunteers who are in contact with risk groups and people that did not receive enough information in the previous crisis. Authorities would benefit of information about tensions and conflict at the national level so that they can predict communicational challenges. In Italy, the responders mainly stated that all should be reached in the BAD scenario. Some stated that information should be especially targeted to the undecided and those who believe in conspiracy theories. The responder reiterates that those who believe in conspiracy theories are not a homogeneous group and the conviction is thus not necessarily very strong: “the real game will be played on them”. Another responder emphasised the secondary factors of vulnerability: poor education, vulnerability related to language-skills, socio-economic situation, and overall social class.

The German scenario related to a flooding disaster. In the GOOD scenario, participants stated that specific information should be provided to those who are vulnerable in the disaster (such as different language groups), elderly people, people with chronic illnesses, people with disabilities and people close to them such as carers. They also mentioned people with reduced mobility who need help leaving their homes. The responses in the BAD scenario did not much differ from the GOOD scenario. One participant added children without parents and people living in poor areas to the list.

There was some overlap in what constitutes vulnerability in different disaster scenarios. Nonetheless, the responses indicate that the type of disaster did affect opinions on who should be reached or paid specific attention to in a crisis i.e. who are considered most vulnerable. Many tabletop exercise participants understood vulnerability in the different scenarios as contextual, emerging from the disaster. Their understanding of vulnerability does seem to support a *dynamic* understanding of vulnerability where there is a strong dependency on the situation.³⁰ D2.2. discussed national approaches to individual vulnerabilities, and concluded that in general, individual vulnerabilities are considered in relation to certain risk scenarios.³¹ The participants’ discussions seem to reflect this conclusion.

Participants’ views also somewhat reflect research in D1.3³² on *intersectionality* related to vulnerability. Intersectionality means that people have simultaneous, overlapping identities. Thus, for instance elderly people are very heterogeneous in terms of coping capacity and self-preparedness. Vulnerability was mostly related to the non-static vulnerability-elements: the most often mentioned ones were (un)use of different media channels, media literacy, economic situation, belonging to an ethnic or cultural minority and ability to understand native languages.

In addition, a higher *exposure* to disaster was creating a need to be informed how to prepare to the disaster. This included for instance persons, who work in the customer services, are care takers of the elderly or people with chronic illnesses or are responsible of the maintenance of critical infrastructures. Thus, the participants did not only list “traditional” groups that are considered as vulnerable, but had a rather large perspective on vulnerabilities before, during and after crises.

³⁰ Morsut Claudia et al. (2020; revised 2021), D1.3 Report on Segments of Vulnerability Country by Country Basis Inside and Outside the Official Data, Building European Communities’ Resilience and Social Capital, BuildERS -project.

³¹ Orru, Kati et al. (2020), D2.2. Case Country Analyses and a Cross-Country Comparative Analysis of the Functioning of Disaster Resilience Systems, Building European Communities’ Resilience and Social Capital, BuildERS -project.

³² Morsut Claudia et al. (2020; revised 2021), D1.3 Report on Segments of Vulnerability Country by Country Basis— Inside and Outside the Official Data. Building European Communities’ Resilience and Social Capital, BuildERS -project.



**Key strategic partners in reaching the vulnerable people in the scenario situations:
GOOD vs. BAD scenario**

According to Estonian participants, the key strategic partners in reaching vulnerable people in a scenario where there is high trust in institutions, enough resources and new opportunities for crisis communication strategic partners include municipalities, local entrepreneurs and companies (stores, restaurants, tourism), schools (teachers, headmasters), religious groups, apartment associations, and associations of ethnic minorities. The Finnish participant mentioned different levels of government, social and health providers, NGOs, organizational experts that cooperate with local, regional, and national actors, communities (different language groups, neighbourhoods, religious communities), media, social media influencers and businesses. One Finnish participant stressed that authorities should not rely on themselves only but utilize NGOs and influencers with a wider, diverse audience. Unions, central organizations, businesses, and communities could also spread information to their target groups. Italian responders would mainly organise activities within official actors. Many mentioned (civil society) organisations that are rooted in and branched into the territory as essential to reach vulnerable people. They also mentioned civil protection, Red Cross, the police, and voluntary organisations with credibility as important partners as well as local, municipal, regional, and political authorities. Furthermore, a few responders stated that health companies and religious communities such as churches and mosques may be important strategic partners as people may have more trust in such instances than in institutional bodies (in this crisis).

In the Estonian BAD scenario of global pandemic, key strategic partners in reaching the vulnerable people include journalists, entrepreneurs, universities, information technology (IT) experts, medics, representatives of vulnerable individuals (hearing impaired, visually impaired). The Finnish responses in the BAD scenario followed the lines of the GOOD scenario with an additional emphasis on local actors by one participant. German participants highlighted those who work with the target groups regularly as the main strategic partners, as well as emphasized the role of parties who can reach many people in times of crisis and otherwise (e.g. religious communities). Italian responders reiterated that the role of official actors is essential (those who are institutionally in charge), but many also mentioned “testimonials in mass communication” and referred to the role of famous, public figures such as sports stars, actors, singers and/or social media influencers on different channels like YouTube and TikTok. Otherwise, they would mainly collaborate with the same instances as in the GOOD scenario. They did however highlight slightly varying themes: One responder emphasised the responsibility of political actors in the BAD scenario stating that although there are institutions that are in the forefront in a health crisis like a pandemic (scientific community, civil protection, national and supra-national health organisations), the political actors (regional and provincial) must make their contribution felt. Some Italian participants highlighted the role of collaboration in general: “with a pyramidal structure, from the top down, anyone who has a part in managing the situation must be able to interface with others. Collaboration and synergy are fundamental and cannot be improvised, but they require concrete opportunities to be built. A good example is the joint Civil Protection exercise, in which all organisations operating in Civil Protection (either officially or voluntarily) are involved in the field in the design, management and evaluation”.

The GOOD and BAD scenarios did not differ greatly in the county cases except for Italy. Estonian participants did think more specifically of the strategic partners in the BAD – scenario and took the particularities of the case into account by mentioning IT experts and journalists who would presumably have influence in the case where technological solutions are not trusted and there is much misinformation. Italian responders emphasised the role of collaboration in the preparedness phase,



testimonials in mass media and equal responsibility by all relevant actors in the BAD – scenario when compared to the good one (where they mainly recited relevant partners in this particular crisis). Their responses show that they also thought more carefully who those relevant strategic partners would be but went even further than that to ways to manage the crisis in the best possible way.

Key stakeholders in organizing efficient risk and crisis communication:

GOOD vs. BAD scenario

In Estonia, the stakeholders in the GOOD scenario could involve NGOs, municipal workers, educational institutions, and the organisations they are outsourcing tasks to. In current crisis, it was important to get into contact with retail and hospitality companies, event organisers, city community unions, religious unions, flat owners unions. To reach ethnic groups whose home-language is other than Estonian, their ethnic/cultural unions could be contacted to spread the word. Strategic partners could be involved in the spread of rightful information and help amplify official messages from the state authorities to different target groups. This means for example, referring/liking/retweeting official social media posts and adding supportive comments. These partners could also be of great help when spreading information to those that do not follow media (going from door-to-door to inform personally). Regarding the GOOD scenario, the Italian participants mentioned the role of civil protection, voluntary organisations, neighbourhood associations, religious associations, and NGOs. Many highlighted the role of Civil Protection and their associates and communication channels. The responders emphasised credible sources; one stated that information from other channels than Civil Protection should be taken with a “grain of salt”. Most elaborated that all possible channels for disseminating information should be used while considering the people that one is trying to reach. Some of the communication channels and methods mentioned were: mass communication, social media (for reaching certain categories of population), radio, TV, telephone messages, posters in places with greatest transit and door-to-door information provision. One responder emphasised the role of news programs that provide institutional information, social networks, information campaigns by trained experts, “all that can be activated to cover the widest dissemination of correct information”. They also mentioned re-posts and re-tweets of official messages, official websites, newspapers (both paper and online versions), instant messaging applications and related groups such as a territorial WhatsApp group. Again, responders emphasised existing networks and uniform messaging (albeit with different levels of detail according to the channel) during crisis.

In the Estonian BAD scenario, participants stated that it would be useful to engage people from local and national media, institutions tasked with civil protection and social care, but also universities, medical specialists and virologists that could help in creating and spreading rightful information. Also, individuals with special needs (e.g. with hearing or sight loss) are a target group in case of whom a different communication approach needs to be applied. Furthermore, it is reasonable to consider the communication target groups in terms of clusters such as educational institutions (including interest schools) or retail (different shops). All the representatives of these clusters need to receive the same information to avoid sending ambiguous signals to their clients and attendees. In addition to the information provision to these institutions, controlling the enforcement of the rules and guidance is necessary to ensure a coherent approach by all institutions and to create a sense that wrong behaviour is dangerous and unacceptable. In the BAD – scenario, the Italian responders mainly reiterated the responses from the previous scenario. They did, however, emphasise the role of communication experts in planning a communication strategy. Some wished for a single channel for information while others stated that “it is unthinkable to think that, to date, people follow only one channel”. They also mentioned that disinformation should be fought “with the same weapons, that is,



by using official channels/pages/accounts in NON-official platforms (Facebook, Instagram) stating that the “tone of the information must be calm but decisive, it must never give the idea of arrogance (I know more than all of you, you others shut up and listen)”. They also stated that both one-way communication and interactive communication is necessary to enable either dialogue or at the least a space to dissipate major doubts. Once again Italian responders considered authoritative testimonials recognized as such by different target groups (the “right” social media influencer for a specific group of people) to disseminate correct information.

In Finland, in the GOOD scenario, the strategic partners in crisis communication could include a variety of actors: national, regional and local authorities, health care and social services agencies, NGOs and NPOs, media, businesses, individual social media influencers, and different types of communities, like linguistic minorities and neighbourhoods. Thus, authorities should not trust that their message is enough alone but use other organizations, communities, and individual citizens in spreading the word. The strategic partners mentioned were almost the same also in the BAD scenario, so the level of trust or the prevalence of false information did not seem to have an impact on the participants’ opinion.

Virtual volunteers

In Estonia, volunteers were considered of great help when they can contribute to spreading rightful and timely information. However, all tabletop countries asserted that to create necessary synergy, their activities must be well-coordinated and consented with the official institutions tasked with crisis management. The Germans added that their integration must be regulated (Germany: managers must be trained, and contact persons must be named, exact agreement on the field of application). Finnish responses collaborate the Estonian sentiment. In Finland, virtual volunteers were regarded to have much potential. The participants also emphasized that they can be of help to authorities but at worst enable the spread of false information. Finnish participants stated that such new forms of volunteerism require resources and coordination. Successful execution does not happen on its own but require a common direction, respect, dialogue, genuine communication and cooperation, continuous feedback, and development. In Finland, virtual volunteering was comprehended as a trend of the future; it was speculated that the role of volunteers may be changing or returning to a more ad-hoc-form.

Often authorities and established NGOs do not know how to relate to such forms of 4th sector volunteerism. It can also be an issue that 4th sector volunteers bear no real responsibility for the spreading of potentially false information. The citizens should understand that the information does not come from an authority or an established NGO. Italian responders stated that civil protection organisations focus on highly specialized types of volunteering with theoretical tests, practices, and continuous updates. Unaffiliated volunteers were perceived to lack “the knowledge of the tool”. They were seen as a potential resource and should be made available to those who manage the emergency and not to act independently which could cause damage. Indeed, most felt that virtual volunteers would be helpful if planned and foreseen in the crisis management system. Otherwise, there is a risk that they provide unreliable information and generate confusion and anger. Responders were mainly concerned with the accuracy of information.

In Estonia, the experts mentioned that un-coordinated action can create ambiguities and further mistrust. For example, in case of the current COVID-19 crisis platforms directed volunteers to run errands (do shopping, walk dogs) for self-isolated elderly. Yet, in many cases “volunteers” also troubled (blackmailing etc.) trustful people in need. German participants added that attitudes towards



virtual or digital volunteerism are positive as they can support authorities and other organizations with security responsibilities as well as motivate more people to get involved in voluntary work. However, concepts for such activity are long overdue and should be developed as soon as possible.

Social media influencers as support for authorities in crisis

Estonian participants considered social media influencers as a double-edged sword: they can be of great help in cases where they are responsible and have the right information. Yet in some cases, they do not perceive the extensiveness of their role when accidentally spreading false information. In general, the participants deemed collaboration with influencers a necessity, since it has become a very important source of information for many (particularly younger) people. Nevertheless, it was deemed difficult to spread serious messages through influencers. In Finland, views towards influencers were mainly positive. Most deemed influencers as a good or important channel to spread information. One stated that the COVID-19 pandemic is the first big crisis of the social media age and the influencers have proven to be important mediators of information. One stated that authorities should not have to rely on influencers in crisis situations and alluded that citizens should instead be directed toward government social media channels (e.g. YouTube). Some perceived difficulties and threats in the use of influencers. Some elaborated that cooperation should be based on the target audience and objectives of communication. Moreover, influencers should work in cooperation with authorities and crisis managers. One participant state that there is no verified way to discern, now, what information is valid and verified and what is not in relation to influencers; information originating from authorities should recognizable. This statement was collaborated in the German exercise. Likewise, in Italy, the responders saw that influencers would be beneficial when reaching out to particular segments of the society. If they provide correct information, they can be helpful in managing an emergency. One Italian participant stated that by conveying positive messages they can make a significant contribution in the post-emergency period. As in previous Italian responses, some perceived them to be helpful as testimonial providers for official communication campaigns. Participants mentioned that if they provide correct information, influencers can be helpful, otherwise they might be a danger. The participants did see potential in the existing networks that they have. One responder gave a positive example: a pair of influencers raised funds for the construction of an intensive care unit dedicated to patients suffering from SARS-CoV-2. In Finland, one participant applauded a webinar by government actors targeted at social media influencers at the start of the COVID-19 pandemic and stated that similar educational material is called for. German participants added that social influencers do not have a comprehensive overview of the situation alluding that information in media can be fragmented. Trustworthy information is still provided by the authorities. Yet, influencers have wide distribution and can reach a large audience; they can help reach people who are not informed about traditional media.

Overall, participants in all countries seemed to perceive influencers as positive channel to reach certain individuals but highlighted that verified information still originated from authorities and that there should be a way to discern information that has been verified by authorities. They can help reach a wider audience and especially relay information to younger people and others who do not follow traditional media channels. They were also perceived to be helpful at different stages of a crisis: to create positive sentiment and unity at the post-crisis stage and to offer testimonials in official campaigns to raise awareness in different phases as well as to spread information to their networks during a crisis.



How to collaborate with spontaneous volunteer networks in crisis

The Finnish tabletop exercise participants saw that all kinds of spontaneous volunteering are increasing its importance, including the so called virtual or digital volunteering, which uses internet as a channel for providing support and relief in disasters. It is a great opportunity, but needs to be coordinated, which further requires both adequate resources and experience. There is a risk that volunteers spread (unintentionally) false information. Thus, authorities and other agencies, who are responsible of providing accurate information should collaborate closely with the volunteers. Italian participants reiterated that they are a good addition to crisis management if coordinated and placed in a specific role, they can help disseminate reliable information. Nonetheless, they should be trained and supervised, not everyone possesses accurate information regarding the crisis.

Estonian participants saw spontaneous networks as helpful when approaching numerous individuals personally to draw attention to the right/protective behaviour. They are also valuable in monitoring the social media discussions. Each pair of eyes can be useful in spotting false information and reporting it to the web-police. One Italian responder stated that the strength of spontaneous volunteering does not lie in having people to be placed in a complex hierarchy, but in the horizontality of the response. The responder believed that temporary volunteers are part of the affected communities and therefore a primary source of information to discover possible needs. They can also perform early identification of rumours that could impact behaviour during crisis. Nonetheless, they were perceived as good creators of “social support” both electronically and in person.

According to Finnish respondents, official crisis management actors could actively provide factual information to the organizers of spontaneous volunteer action (as well as to those responsible for social media). However, spontaneous volunteers require support and guidelines to organize themselves so that they do not put themselves in danger. They also usually fall outside services provided for established, organized NGOs such as defusing and debriefing activities. In Italy, responders mainly believed that they should be recruited as part of official volunteer organisations. This could be done with the help of advertising and recruitment campaigns.

Authorities could finance e.g. NGOs and NPOs so that they could coordinate spontaneous volunteer action. Existing information, guidelines and materials should be shared with such volunteers. One Finnish participant believed that civil society actors, faith-based-organizations and other NGOs will be able to collaborate better in the future. Another Finnish participant mentioned neighbour support networks as an example and stated that although such “leaderless” networks can be difficult to collaborate with, they come into existence due to a genuine need and are usually altruistic. The participant was keen to learn more about the subject.

In difficult disaster situations, the most influential actors who can disseminate information widely should be recognized. These are for instance those who also work with the focus groups in everyday life and are in regular contact with them (for instance care services, citizens' associations, religious communities). For instance, migrant communities have networks which can provide a wider outreach. That way factual, legitimate information can be spread via trusted channels. German participants saw that the spontaneous networks can spread important messages through their low-threshold access to people so that the information is effectively and widely shared. Spontaneous networks could encourage "group pressure" and persuade others to act accordingly to information.



4. Summary: stakeholders views on vulnerability

WP1 has constructed an overall theoretical framework of vulnerability in crises. The very robust first draft of this theoretical model was published in October 2019 in BuildERS deliverable 1.1.³³ This model and the preliminary definitions of key concepts were shown for the project Advisory Board, first responder partners and external stakeholders (the Stakeholder Forum). The first sketch of the conceptual definition of vulnerability defined it as: "the situational capacity of individuals or groups to access adequate resources and means to anticipate, cope with, resist and recover from the impact of natural or man-made hazards". Stakeholders were invited to comment this definition and suggest, how it could be improved. They recommended that instead of capacity, we should speak of *incapacity*.

Furthermore, the *reasons behind* this "lack of capacity" should be explained in more detail; is it for instance the same as dependency from something or someone or incapability? Country studies (of Estonia, Germany, Hungary, and Italy) documented in BuildERS deliverable 2.2 indicate that people's vulnerability in crisis is mainly related to their limited or inadequate self-sufficiency in crisis situations. This individual or community-level preparedness, however, is much dependent on the situational and social conditions, like poverty.³⁴

Experts interviewed for the BuildERS deliverable 2.2 suggest that vulnerability should be assessed on an *individual* level. A priori identification of certain groups as vulnerable in crisis may lead to their stigmatization and victimization in society.³⁵ In man-made disasters, information (whether legitimate or false) about the suspected perpetrator may also encourage stigmatization of larger groups and communities, even nationalities. Online tabletop exercises with the Estonian, Finnish and German communication experts discussed this phenomenon and asked of ideas to manage it. Exercise participants were provided examples in relation to COVID-19 pandemic. World Health Organization has been seriously concerned of the use of certain negative and stigmatizing expressions and IFRC has published a guide to prevent and address social stigma associated with COVID-19. German participants saw the importance to raise awareness of discriminatory behaviour even when there is no acute crisis going on. This awareness raising should be done *together with the discriminated/stigmatized people* and it would be a good idea to build larger "alliances" around the issue.

One of the Finnish exercise participants reminded that not only citizens, but responsible officials may be targets of hate speech. This fact validates the BuildERS model for framing vulnerability in crisis, presented in the BuildERS deliverable 1.3. *Exposure to hazards and crises* is thus one essential dimension of vulnerability. For instance, first responders are intentionally, and tourists accidentally exposed to crisis and thus, equally vulnerable — at least to some degree depending on the other

³³ Morsut, Claudia et al. (2019), D1.1 First version of the unified theoretical framework on the concepts of risk awareness, social capital, vulnerability, resilience and their interdependencies. Building European Communities' Resilience and Social Capital, BuildERS -project.

³⁴ Orru, Kati et al. (2020), D2.2. Case Country Analyses and a Cross-country Comparative Analysis of the Functioning of Disaster Resilience Systems, Building European Communities' Resilience and Social Capital, BuildERS -project., p. 24; 44.

³⁵ Orru, Kati et al. (2020), D2.2. Case Country Analyses and a Cross-country Comparative Analysis of the Functioning of Disaster Resilience Systems, Building European Communities' Resilience and Social Capital, BuildERS -project., p. 26.



vulnerability increasing elements. These people and their particular vulnerabilities are rarely, if at all mentioned in international and national surveys or data bases.³⁶

Current BuildERS project reports underline the multidimensional nature of vulnerability. Participants of tabletop exercises also related vulnerability to different non-static elements. The most often mentioned ones were (un)use of different media channels, media literacy, economic situation, and ability to understand native languages. This means that the academic concept of *intersectionality* is useful, when trying to grasp the notion of vulnerability in crisis. Instead of focusing on predefined vulnerable groups like the elderly or the disabled, first responders and other service providers need to estimate more carefully people's situation. Otherwise, there is a risk of treating people as passive victims, without a competence of helping themselves or supporting others or situational awareness. Thus, people may not just wait for the rescuers and other service providers to bring knowledge and support but start to help themselves and others. For example, at the very early phase of the COVID-19 pandemic spontaneous volunteers started to advertise their aid and support for the persons at risk of becoming seriously ill if being infected of the virus. In addition, digital activists organised hackathon-events together with the private businesses and other actors, and innovated seeds for various kinds of technological solutions.

This relates to a comment of WP1 validation-workshop participants, who emphasized the non-linear nature of the “crisis management cycle” presented in the 1st draft of the model. In practice, prevention, mitigation, preparedness, response, and recovery actions do not follow each other in a sequential manner, but are rather simultaneous actions, which vary in intensity. For example, the recovery phase may start (at least partly) also before the “formal and authorized” response is finished.

Most tabletop exercise participants understood vulnerability in the different scenarios also as *context specific*, emerging from the particular disaster. Hence, stakeholders' perspectives seem to support a *dynamic* understanding of vulnerability, where there is a strong dependency on the particular crisis situation. Furthermore, in the fictional case of pandemic, participants highlighted several interesting aspects related to *communicational* vulnerabilities. Communication means and channels, and the ways in which messages are presented have a significant impact for people's resilience in crisis. Thus, vulnerabilities in terms of communication should be further explored and analysed within the BuildERS project.

Stakeholders emphasized that communication has a large impact on vulnerabilities in crises. Many participants mentioned people with limited language skills and poor media literacy as both difficult and critical to reach during disasters. Especially vulnerable are persons, who do not use social media or internet as an information channel or do not have personal contacts with communities, where the news is spread either digitally or mouth-to-mouth. Another challenge are people who question the legitimacy and reliability of major broadcasting companies and/or the objectivity of scientists and experts. In addition, older age, dependency on institutional care, and sense of social exclusion were seen as major vulnerability factors.

³⁶ Morsut Claudia et al. (2020), D1.3 Report on Segments of Vulnerability Country by Country Basis — Inside and Outside the Official Data, Building European Communities' Resilience and Social Capital, BuildERS -project., p. 67



Factors enabling better outreach were mostly related to social capital: citizens' trust, collaborative relationships between the media, authorities and Non-governmental organizations, and the large networks of supportive individual volunteers.

Simultaneous use of multiple communication channels was mentioned as a challenge in rapidly escalating and severe disasters. On the other hand, it was estimated that the current communicational methods reach people who are already interested in preparedness issues. It is also difficult to share classified information — not only from authorities to citizens, but also with the private sector.

Participants also suggested that adding humour in the awareness raising activities may help, even if the issues are serious. The Estonians and the Finns saw that the officials have a central role in cutting rumours and providing proactively factual and more detailed information about the crisis. When people experience fear and uncertainty, they have a need to find the reasons and root causes behind the crisis. This is naturally difficult in a situation when there is little scientifically or otherwise proven knowledge available like in the case of the COVID-19 pandemic. Equally challenging is to share facts about vulnerabilities in public, like for instance that some communities are less prepared or less aware of the risks. These kinds of news can easily fuel the general populations' hate towards the "uninformed".³⁷

³⁷ For example, the Russian -speaking minority in Estonia and the Somali families in Finland have been considered as vulnerable during the COVID-19 pandemic due to their linguistic and cultural conditions.



5. Next steps in the BuildERS project

In sum, our Stakeholder Forum agrees with us that it is important to address vulnerability as both dynamic and context specific in crisis. Understanding of vulnerabilities as being attached to certain groups, like the elderly or children, is simplifying, and may lead to false assumptions. However, a more nuanced assessment of who are vulnerable – when and why – would need *more knowledge* of people in need or at risk. Thus, for instance the Estonian case study, where the public databases are integrated to identify highly vulnerable populations seems a promising initiative.³⁸

Furthermore, the Stakeholder Forum shared the opinion on the importance to look at those “hidden”: less visible and rarely addressed vulnerabilities. Thus, the stakeholders validated the theoretical matrix developed within the WP1 and published in D1.3.³⁹ For example, it essential to add *exposure* to hazards or crisis as a secondary vulnerability factor or dimension. For instance, first responders and tourists are rarely included in international and national research, which addresses issues of vulnerability in crisis.

Participants in co-creation also validated the statement published in BuildERS deliverable D1.4 that risk and crisis communication methods and means and the content of messages have a significant impact on people’s vulnerability. One critical factor mentioned was the inability to meet the communicational needs of people, who are not fluent in native languages. European neighbourhoods and workplaces are more and more international. The level of language skills varies, and this has an impact on the preferred communication methods and channels. Poor media literacy is another challenge; during and after disasters there is plenty of false information spread. The BuildERS project deliverable D6.3⁴⁰ has explored more this challenge and reports stakeholders’ good practises and novel ideas to tackle false and harmful information in crises.

The Stakeholder Forum did not agree with all the findings of WP1 on communication related vulnerabilities. Contrary to the research results presented in D1.4, sending short messages (like tweets or SMS) was seen as a quick and effective way of communication to large audiences. They can prevent the formation of “information vacuum” and clearly indicate authorities’ priorities, what is the most important issue to know and do. Hence, short messages are more of a “first-aid-type”, they do not work alone. For instance, journalists may build larger news stories around the short messages. It was also suggested that short messages would contain or embed links to further information and progression of events. Thus, cooperation with journalists and media was seen as important, and we will engage more representatives of media also in the forthcoming WP6 co-creative activities.

It became clear that authorities and other responsible organizations do not manage alone in crisis. New type of collaborative relationships, like the involvement of virtual volunteers or social media

³⁸ Orru et al. (2021) Reducing social vulnerability by innovative data fusion for more-informed rescue prioritisation, BuildERS project deliverable (Estonian case study)

³⁹ Morsut C. et al. (2020; revised 2021) Report on segments of vulnerability country by country basis – inside and outside the official data, BuildERS project deliverable

⁴⁰ Jukarainen P. et al. (2021) Report of the challenges related to mis-, dis- and malinformation, BuildERS project deliverable



influencers were welcomed; yet, these supportive actors should be trained, kept constantly informed of the legitimate information and their actions should be coordinated. In the latter affiliated NGOs could work together with the authorities. In autumn 2021, we will continue the co-creation in specific WP6 activities that are related to the building of partnerships with the social media influencers and informal volunteers. Together with the project partners of WP5, we plan to carry a survey for the social media influencers and experts on social media marketing about the costs, benefits and risks related to influencers in crisis communication. We will also organise a workshop in collaboration with the influencers; we will continue existing initiatives for the involvement of social media influencers during the COVID-19 pandemic by raising risk awareness together with government officials and other agencies responsible for pandemic management. In terms of collaboration with the informal volunteers, we will collect a catalogue of good practises to serve as an inspiration for crisis managers. Although there are many challenges, there are also solutions to these challenges. All in all, we plan to continue co-creating new collaborative partnerships with our expanding Stakeholder Forum and hope to share these initiatives in the forthcoming deliverables of WP6 (potential practical innovations) and WP5 (policy-level recommendations).



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Comments from the BuildERS 2nd review regarding D6.2. and our responses (PUC)

Reviewer's comment	Response	Page
<p>Though the idea of hierarchy flattening (page 19) and horizontality is correct and full of potential, this doesn't necessarily mean that all the feedbacks count the same. It is evident that, without previous exercises and adequate dynamization, we can end by having naïve and/or amateur approaches and "findings" that are rather fitting "common sense" standards and don't introduce real new insights to the picture.</p>	<p>We have clarified this sentence and added an explanation of "hierarchy flattening". With this we mean that when feasible, we try to combine different types of expertise together. We are not engaging "lay people". Instead, we may e.g. organize discussions where there are</p> <ul style="list-style-type: none"> a) experts by personal experience: survivors of crisis, previous customers of first responders, care takers who are relatives - not trained professionals, but may receive financial compensation, spontaneous volunteers or volunteers working for the affiliated NGOs b) experts by working practice: operational level first responders, service providers who meet customers, communication specialists, coordinators of volunteer action c) experts by knowledge: practitioners in managerial positions and/or responsible of strategic planning, academic communities, advisors of policy makers, middle-management of first responders, ministerial level officers and employees, EU-level practitioners 	<p>19, in revised D6.2 page 16-17</p>
<p>Regarding the theoretical model validation workshops: Has been the stakeholders' knowledge on a factual matter taken into account while revising answers? Have been their roles/areas of expertise taken into consideration? Tailoring of questions and "wicked problems" to different targets could bring more effective and knowledgebased responses to the table.</p>	<p>We have clarified the process of theory validation and co-creation and demonstrate the results more clearly in the updated version. We have included more information about the process (incl. schedule and participants), information about the expertise of the external stakeholders. We have also explained how the concepts in D1.2 developed in the process (Howspace results) and how the theoretical model was developed in workshops. The discussions with all stakeholders were planned according to the participants/participant categories.</p>	<p>Theory validation and co-creation: in the revised version on p. 25-31</p> <p>Validation of theoretical model: external stakeholders expertise on p. 27</p>



		External stakeholders in tabletop exercise, expertise on: p. 35-38
Page 15, Table 2 with new targeted activities shows a lack of understanding of certain analysis' complexity, not linked with previous theoretical progress and categories. How are these new targeted activities linked to D1.2? Have they been revised and revisited thanks to D1.2? Or they were developed in parallel and without interaction and iteration?	The table has been removed completely as the WP6 working plan has evolved greatly. The link to the BuildERS Common Vision and DoA are now more clearly demonstrated. The leader of D1.2 has also gone through the whole of D6.2 to make their comments regarding the deliverable. We have taken their feedback to heart. All WP6 activities is aligned with D1.2 as demonstrated also by the Co-creation matrix. The tables and a matrix are provided in the stand-alone document.	15 (removed)
With regard to the work in WP6 about co-creation, more clarity and transparency have to be demonstrated.	We have clarified the process of theory validation and co-creation and demonstrate the results more clearly in the updated version. We have also clarified the analysis section regarding the tabletop exercises to make the method of analysis clearer. In 2021, we will carry several workshops and other activities where we continue the iteration process. (both validation and co-creation: at later stages of the process co-creation will become more visible. These first exercises validated the first research results of WP1.	29-31, in revised D6.2 pages 15-21
Table-top exercises questions appear not to be built upon the theoretical framework. This makes it difficult for the exercise to lead to any useful conclusion linked to WP1 and WP2 and applicable in WP4. Indeed, some of the findings (page 36, 37, 38) are merely echoing the reflections of WP1.	The questions were derived from WP1 deliverables. We studied D1.4 very carefully in regards to the tabletop themes and discussed the contents with task leaders. We also read the D1.1 and D1.2 (draft) with the goal of considering the main concepts in BuildERS. For example, we added a description on vulnerability to the tabletop exercise which was discussed with EKU ahead of tabletop exercises (they reviewed the tabletop content). The concepts of risk awareness and social capital were written into the themes and questions but the exercises main focus was on communication related vulnerabilities (with consideration of social capital and risk awareness).	



	<p>At the beginning of the process co-creation aim at finding new avenues for thinking. We show in our later work how these themes evolve into innovation potential at later stages of process (“stand-alone document” and co-creation matrix should demonstrate that). The aim is to find the focus which we will demonstrate that we have done. As WP6 engages in both validation and co-creation, we may also validate theoretical results. Co-creation is more apparent at later stages.</p>	
<p>The number of attendees appears to be relatively low, and it doesn't appear that stakeholder profiles and fields of expertise have been considered to better tackle and/ or measure answers and contributions</p>	<p>We have clarified the process of theory validation and co-creation and demonstrate the results more clearly in the updated version.</p> <p>The number of participants has been increased due to tabletop exercise in Italy in summer 2021 which was the most successful one as it comes to number of attendees (17). We have greatly increased information on the attendees to validation and co-creation activities both in the section regarding theory validation workshops and tabletop exercises. We have included information on the schedules, and greatly increased information about Stakeholder profiles in form of images (field of expertise, experience level, role in organization).</p> <p>It is common in online and face-to-face workshops to have appr. 20 participants. However, the ensuring the quality (right expertise) is essential.</p> <p>Altogether we have now 146 external stakeholders in our Stakeholder Forum. After D6.2 was reported to now (by end of May), we have thus already exceeded our 6th Milestone (MS6) of 100 participants M30 (Oct 2021).</p>	
<p>The co-design and co-development approach underlying WP6 is only very weakly developed. The consortium needs to address some of the following points: What was the objective of co-creation? How did you involve stakeholders? How did you collect feedback? With how many stakeholders did you interact? Was this an iterative process? Technology demonstration and testing? How did you</p>	<p>The co-design and co-development process in WP6 has been developed further. The “stand-alone document” shows the WP6 process going forward and explains the links to other workpackages.</p> <p>The process is now more clearly explained in D6.2 with the objectives and end-goals more clearly stated.</p>	



<p>do it? The consortium provided information on what it did, but far less on how they did it.</p>	<p>The BuildERS Common Vision guides co-creation activities; these are clearly demonstrated in our co-creation matrix which explains the links to previous BuildERS research (including preliminary recommendations derived from BuildERS research) and the outcomes of co-creation. This has been possible due to very close cooperation with the project partners. The WP6 activities have been planned in continuous cooperation WP5 and WP8.</p> <p>Technology demonstration and testing will be part of future activities, their connection to research and previous activities are detailed in the “stand-alone document” requested by the reviewers.</p>	
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