LINKS

Strengthening links between technologies and society
for European disaster resilience

D8.1 LINKS COMMUNITY STRATEGY

Research Report

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DISCLAIMER

EXECUTIVE SUMMARY

About the project

LINKS "Strengthening links between technologies and society for European disaster resilience" is a comprehensive study on disaster governance in Europe. In recent years, social media and crowdsourcing (SMCS) have been integrated into crisis management for improved information gathering and collaboration across European communities. The effectiveness of SMCS on European disaster resilience, however, remains unclear, due to the use of SMCS in disasters in different ways and under diverse conditions. From this point of departure, the overall objective of LINKS is to strengthen links between technologies and society for improved European disaster resilience, by producing sustainable advanced learning on the use of SMCS in disasters**.** This is done across three complementary knowledge domains**:**

1. Disaster Risk Perception and Vulnerability (DRVP)

2. Disaster Management Processes (DMP)

3. Disaster Community Technologies (DCT)

Bringing together 15 partners and 2 associated partners across Europe (Belgium, Denmark, Germany, Italy, Luxembourg, the Netherlands) and beyond (Bosnia & Herzegovina, Japan), the project will develop a framework to understand, measure and govern SMCS for disasters. The LINKS Framework consists of scientific methods, practical tools, and guidelines addressing researchers, practitioners, and policy makers. It will be developed and evaluated through five practitioner-driven European cases, representing different disaster scenarios (earthquake, flooding, industrial disaster, terrorism, drought), cutting across disaster management phases and diverse socioeconomic and cultural settings in four countries (Denmark, Germany, Italy, the Netherlands). Furthermore, LINKS sets out to create the LINKS Community, which brings together a wide variety of stakeholders, including first-responders, public authorities, civil society organisations, business communities, citizens, and researchers across Europe, dedicated to improving European disaster resilience through the use of SMCS.

About this deliverable

The LINKS Community Strategy (D8.1) will introduce the overall engagement approach that the LINKS project will follow as well defining the collaboration and content requirements of the LINKS Community.

The main purpose of D8.1 is to ensure that:

- The right audiences are targeted, respecting an appropriate and defined timing, through intelligible channels and tools.

- Stakeholders can contribute to output development, evaluation and exploitation. Thus, they should be identified and encouraged from the start to proactively interact with the Consortium Partners on a systematic basis.

- LINKS partners have a clear understanding of what is expected from them with regard to building the Community, and how they can participate in ensuring that the Community is a valuable and effective resource for the development of the LINKS Framework.

An Introduction to the LINKS' Community is provided in Section 1. Section 2 describes the objectives of the Community, including a detailed stakeholders' engagement approach, along with the categories of stakeholders that will be included in the Community. Section 3 explains how the stakeholders can be approached for their inclusion in the LINKS Community. Section 4 explains how the Community will be able to provide feedback to the LINKS partners, via the LINKS Community Workshop. Then Section 5 illustrates the sustainability of the LINKS Community and the LINKS Community Center and Section 6 presents the Innovation Management Plan.

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LIST OF ACRONYMS

Abbreviation / Acronym	Description
ANDRASEC	Association Départementale des Radioamateurs au service de la Sécurité Civile
ASBL	Association sans but lucratif
BCE	Belgian Crisis Center
BE AWARE	Enhancing decision support and management services in extreme weather climate events
BuildERS	Building European Communities' Resilience and Social Capital
CARISMA	Coordination and Assessment of Research and Innovation in Support of Climate Mitigation Actions
CMINE	Crisis Management Innovation Network Europe
COPE	Copenhagen Center for Disaster Research
CoU	Community of Users
DEC	Dissemination and Communication
DCT	Disaster Community Technologies
DG	Directorate General
DG ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
DG HOME	Directorate-General for Migration and Home Affairs
DHPoL	Deutsche Hochschule der Polizei
DMP	Disaster Management Processes
DoW	Description of Work
DRPV	Disaster Risk Perception and Vulnerability
DRS	Disaster Resilient Societies
ECSO	European Cyber Security Organisation
EENA	European Emergency Number Association
ENCIRCLE	European Cbrn Innovation for the maRket Cluster
ENGAGE	Engage Society for Risk Awareness and Resilience

EOS	European Organisation for Security
EU	European Union
EC	European Commission
FEU	Federation of European Union Fire Officer Associations
FNRASEC	Fédération Nationale des Radioamateurs au service de la Sécurité Civile
INHESJ	L'Institut national des hautes études de la sécurité et de la justice
IN-PREP	An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises
KUL	Katholieke Universiteit Leuven
LAC	LINKS Advisory Committee
LCC	LINKS Community Center
LCU	Links Campus University
LCW	LINKS Community Workshop
PLS	Pour la Solidarité Association
RAN	Radicalisation Awareness Network
RDRT	Red Cross Regional Disaster Response Teams
REA	Research Executive Agency
SAFECLUSTER	Security and Aerospace Actors for the Future of Earth
SIC	Safety Innovation Center E.V.
SMCS	Social Media and Crowdsourcing
VU	Stichting VU
VUB	Vrije Universiteit Brussel
WP	Work Package
WPL	Work Package Leader

1. INTRODUCTION

The creation of a sustainable stakeholder community - the LINKS Community - is one of the main outputs of the LINKS project. Consisting of multidisciplinary stakeholders from several countries, professions and schools of thoughts, learning and benefiting from the project development and results and in turn providing their knowledge and expertise for the betterment of LINKS research. The LINKS Community will work collaboratively hand in hand with the LINKS Consortium to better understand, explore and produce new knowledge on best practices for the use of social media and crowd sourcing (SMCS) in disasters.

While LINKS will initially engage with the Community for input in the development of the LINKS Framework, and the tools, methods and guidelines that will accompany it, the Community will also provide validation of the Framework at each step of the design process, and testing to ensure that the final version is successful. This will require leveraging the knowledge of different groups of stakeholders so that they can be actively involved in assessing the main outputs of the projects. This approach entails going beyond knowledge sharing as it deals with the actual development and assessment of the new information produced by LINKS.

An important point to note is that the creation of this Community will benefit not only the LINKS Partners, but the members of the Community itself. It is foreseen that the Community will have a greater role beyond validating the LINKS research and outputs, as it is envisaged that the exchanges and activities organised through the Community (the LINKS Community Workshops and the LINKS Community Center) will subsequently form a support network for practitioners and researchers (as well as other stakeholders) that can be approached for the sharing of best practices regarding SMCS for disaster resilience, advice on implementation of the Framework beyond the lifecycle of the project, and will become an established resource for stakeholders by developing as a repository of knowledge and experiences that the crisis management community can call upon. Therefore, the ambition for the LINKS Community is that it becomes a resource for both the LINKS Consortium and its participant members.

The implementation and success of the Community, and therefore the LINKS project is directly connected to the multiple levels of stakeholder engagement that is foreseen within the LINKS Community, including practitioners, industry, policy/decision makers and citizens actively working with or innovating SMCS across the three knowledge domains: Disaster Risk Perception and Vulnerability (DRPV), Disaster Management Processes (DMP), and Disaster Community Technologies (DCT).

Other entities are already active in the CM space, such as the Crisis Management Innovation Network Europe (CMINE[1]), the European Forum for Disaster Risk Reduction (EFDRR[2]), and DG HOME's Community of Users on Secure, Safe and Resilient Societies (CoU[3]). As these examples show, there is a wide variety of structures active that are available to support crisis management efforts in Europe, with distinct roles and resources to leverage; likewise, similar projects to LINKS such as ENGAGE[4] and BuildERS[5] foresee the creation of an internal forum or community throughout their project lifecycle, and it is expected that there will be mutual participation between projects, given the overlapping topics and areas of interest. A fuller version of this network analysis and a plan for engagement will be developed as part of the Task 7.5 *Integration and Communication with other Networks*, beginning in M10. This is expected to strengthen research efforts and provide a basis for the LINKS Community to develop a permanent position in the over-arching crisis management eco-system.

Table 1 Examples of Crisis Management Networks

Entity	Focus
CMINE	A Community of Practice that fosters innovation and shared understanding of crisis management practices.
EFDRR	The European Forum for Disaster Risk Reduction facilitates discussion and advances on disaster risk reduction issues in a coordinated fashion at the regional level.
CoU	The Community of Users provides a platform to share information across Member States and brings together the latest policy and research developments in an easily accessible format. It encourages the exchange of information and thereby supports those responsible for countering the various threats the society faces.
LINKS Community	The LINKS Community will be a knowledge repository on the application of the LINKS Framework and for the use of SMCS to build disaster resilience and inform crisis management practice in Europe.

On this basis, it is not intended that the LINKS Community compete with other entities. Rather, the LINKS Community will be a complementary effort, that develops and engages with other entities through mutual participation, knowledge sharing and co-creation, strengthening crisis management

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[1] https://www.cmine.eu/
[2] https://www.preventionweb.net/organizations/8679/profile
[3] https://www.securityresearch-cou.eu/
[4] Website not yet online
[5] https://buildersproject.eu/

efforts and in particular disaster resilience at a European level. As Table 1 briefly shows, while other networks and entities exist at the European level to facilitate exchanges and support crisis management practice, their focus is sufficiently diverse to the focus and specific knowledge that will be contained within the LINKS Community. This specific knowledge will be drawn from the LINKS Community's focus on SMCS, which also incorporates knowledge and experiences from sectors and professionals that aren't directly related to crisis management and therefore may not be present in other networks or stakeholder groups, such as digital professionals, social media experts and social scientists. Given the vast and rapid expansion of social media and its incredibly diverse user base and functionality, this stands to be a knowledge base that will only develop in size and importance, giving the LINKS Community an important role to play in ensuring that crisis management and disaster resiliency efforts pay sufficient attention to the role of SMCS across the three knowledge domains LINKS will focus upon.

The added value of the LINKS Community therefore becomes clear when envisaging the diversity of participants and stakeholders that will be present, and the engagement and knowledge-sharing that will take place based upon their specific experiences, giving a greater understanding of the challenges of SMCS for improved disaster resilience. It is this ultimate end-goal – sustainable advanced learning on SMCS for improved disaster resilience – that makes the Community valuable, as resilience must be engendered across all sectors of the society, from the bottom up.

The LINKS Community is formulated around three primary means of knowledge-sharing, participation, and interaction in the LINKS Community: online in the LINKS Community Center (LCC), the web-platform for online sharing and integrating lessons learned and ongoing experiences and knowledge within the LINKS Community, as well as with broader EU and international networks; in person (and potentially virtually if necessary) through the LINKS Community Workshops (LCW's), which will be held in each of the selected case countries and are crucial for gathering and communicating information regarding the project's objectives and requirements, and for exchanging best practices among local stakeholders affected by and/or managing disasters; and through the LINKS Advisory Committee (LAC), which consist of invited expert advisors from relevant organizations.[6]

The ambition of this Strategy is to engage each of these levels through providing a plan for a stakeholder analysis that will inform the building of the Community, and by identifying key organisations and individuals who will be approached for participation. This Strategy will ensure the success of the Community by enabling an efficient and sustainable means of interaction that allows the LINKS partners to gather the information required for development of the project needs, and at the same time providing a valuable resource for the stakeholders to improve their own knowledge and understanding of SMCS for disaster resilience. Indeed, the participation, interaction and cooperation between stakeholders will be the cornerstone of the LINKS Community Strategy. By

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[6] More detailed definitions of the LCC, LCW and LAC are provided in Section 5.

Informing, Consulting on, and Empowering (see Section 2.4) the developments and research throughout the project, such as through the LCWs and the LCC, these stakeholders will play a crucial role in the evaluation of the different phases of the project, including beyond the project lifecycle, once the Framework is finalised and openly available, via the LINKS Hub.[7]

Being the reference for all actions to be undertaken to build and keep the Community sustainable, the LINKS Community Strategy has to be seen as a living document that will be constantly evaluated, and will receive to formal updates (D8.2 at M21 and D8.3 at M39). The present Strategy will be applied until M21 and after a careful assessment of the consortium will be revised according to the needs of the project.

Therefore, the ambition of this first deliverable is to provide an overview of the Strategy and the objectives of the LINKS Community, through several steps: firstly, the main stakeholders and how to best engage with them, are described in Section 2, including the in-depth stakeholders' analysis that will inform the building of the Community and will provide insights on the sustainability Strategy. This undertaking will be described in Section 3, before the means of interaction with the Community are detailed in Sections 4 and 5: the LCW and LCC, which well also ensure the sustainability of the Community. Finally, the Innovation Management plan is introduced in Section 6.

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[7] A LINKS Hub, is currently being conceptualized as a means through which the Framework and LCC will be integrated into the Community, and will provide the means of knowledge sharing once the project is finished. See Annex I for a full Glossary of LINKS Project Terms.

2. LINKS COMMUNITY STAKEHOLDERS AND ENGAGEMENT

For the LINKS Community to be a valid and successful resource for both project partners and external members, it requires a multi-disciplinary and diverse membership, with stakeholders from different fields and backgrounds able to provide input and share knowledge. This Section first sets out the key objective of the LINKS Community, before identifying the stakeholders that LINKS will target for inclusion in the Community and how they can be engaged by project partners.

2.1 Objectives for Building the Community

As described above in Section 1, the ambition for the LINKS Community is to build a multi-purpose Community, that is able to provide information and feedback for LINKS partners to understand stakeholders needs and experiences and subsequently use this to verify and improve their research. At the same time, the Community will provide external stakeholders with a resource that contains methods, tools, and guidelines, as well as best practices for their deployment, regarding the management of SMCS during disaster situations, in the form of the LINKS Framework.

Understanding the motivation for engaging with stakeholders is the foundation for a well-defined Strategy and will inform the selection of appropriate tools and channels to be used. In the sections below the objectives are explored, starting from the General Objectives (2.1.1) of the LINKS Community and concluding with a specific and coherent approach (2.1.2).

2.1.1 General Objectives for Engaging with the LINKS Community

This section introduces the objectives of external engagement for the LINKS project. While these are for the overall engagement of the project, they are a starting point for understanding the specific objectives of the LINKS Community, as they detail what is expected from stakeholder engagement, and from this, the LINKS Community objectives can be detailed.

Five main objectives of engagement have been identified within the overall engagement approach of LINKS. Each objective provides a different level of intensity in the engagement activity, while requiring a varying number of stakeholders to be engaged.

- **To Gather information** about LINKS stakeholders' needs and requirements, as well as the state of the art and impact that can be expected for end-users. The stakeholders' analysis will feed into the overall LINKS Community Strategy and will help in shaping the Community based on realistic needs and expectations.
- **To Verify and improve** LINKS research through ongoing expert feedback and input to (preliminary) LINKS research results[8]. The feedback will be taken into account to improve

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[8] Research focused on Social media, disaster technologies, crowdsourcing, diversity awareness, disaster governance, risk perception, European disaster resilience and community resilience.

the results, refine the outputs during the entire project life cycle and to verify the added value of the LINKS Community, from an internal and external point of view.

- **To Boost awareness** of LINKS' research and successes at local, national, European and international levels. Awareness can only be improved if the LINKS Community will feel a sense of the ownership over e.g. the Framework. This will be ensured through active engagement in assessing the outputs of the project.
- **To Extend and enhance LINKS' reputation**: sharing LINKS research results with the Community will develop trust and a sense of ownership in research developed within the project.
- **To Intensify LINKS' Community impact**: efficient and personalised communication with stakeholders will support the uptake of the project's outcomes and increase their relevance, thereby also supporting disaster resilience in societies.

2.1.2 Specific Objectives for the LINKS Community

The success of the project is built on multiple levels of stakeholder engagement within the LINKS Community, actively working with and innovating SMCS across the three knowledge domains. The LINKS project has four specific objectives, three of which relate specifically to the LINKS Community, with several criteria for each.[9] The criteria that are relevant to the LINKS Community are listed under the objectives below. These criteria form the basis for the assessment of the performance of the LINKS Community. By achieving these criteria, the LINKS Community will help achieve the related objectives, by taking advantage of the engagement opportunities.

Specific objective 1: Sustainable advanced learning on SMCS in disasters

This objective is met if knowledge is not only shared but acted upon, meaning that methods, tools and guidelines in relation to the SMCS are used by different groups of stakeholders within the LINKS Community. For examples, methods by researchers, socio-technical tools by practitioners' organizations and ad-hoc guidelines by policy makers.

- at least 50 members of the LINKS Community are present by M18.
- Of the 50 members, at least 30 are from the countries where the case studies will take place, representing all stakeholder groups that are included in the LINKS Community and meeting in person (if the situation allows it. An alternative is proposed in Annex II) within the LCWs by M21.

Specific objective 3: Govern the diversity of SMCS in disasters

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[9] Objective 2 as identified in the DoW was not included here as it is not directly relevant to the Strategy and actions of the LINKS Community.

This objective is met if an improved governance of diversity, an improved understanding, and a proper use of SMCS in disasters is reached.

- The LINKS Framework tools and guidelines are developed through the 'diversity by design' principle for relevant stakeholders.
- The LINKS Framework is flexible enough to be applied and evaluated in five different socio-cultural cases and has been validated by professionals and experts through the LCC and the LAC.

Specific objective 4: Bring multidisciplinary SMCS stakeholders together

This objective is met if the LINKS Community manages to cover and address several sets of stakeholders coming from the practitioners, industry, policy/decision makers, scientific community and citizens' side across Europe. The main aim here is to exchange information, share thoughts, good practices and lessons learned with regards to the effects of SMCS on disaster resilience.

- at least 250 members, representing all stakeholder groups, are part of the LINKS Community by the end of the project.
- at least 30 members of the LINKS Community, representing all stakeholder groups, are from the countries where the case studies will take place.

These numerical criteria reflect the diversity of stakeholders and local specificities that will be required to provide a sound knowledge and expertise base so that interaction with stakeholders is of sufficient quality.

The figure of 250 members of the Community, with at least 30 from the case study countries, is an estimate. This figure reflects the expected design of the LCW's, which, as explained in Section 4, should feature a maximum of 15 participants. LINKS intends to hold 20 Workshops, and therefore 250 participants should allow for a sufficient pool of stakeholders for the required participation in the Workshops.

However, these figures are aspirational and should not necessarily reflect the expected outcomes and participation numbers within the Community, and progress should not be expected to be linear within the two years. At the end of the first year, and again after 18 months, progress reviews will be made with regard to the number of stakeholder contacts that have been identified for the Community, and the number of members that are part of the Community.

This will form a key part of D8.2, as there are several factors that will need to be considered, such as the definition of an 'active member' of the Community, the ratio of members of the Community to participation in Workshops, the breakdown of members by stakeholder category and level, and the number of attendants at workshops. These reviews will help determine the focus of D8.2, by identifying strengths and weaknesses of the Community engagement Strategy.

Similarly, these reviews may reveal the need to adjust the targets, based upon the experiences of organising Workshops, the number of contacts received from partners and the formation of the Community Center.

The following section examines the stakeholder groups that are expected to form the Community.

2.2 Identification of LINKS Community Stakeholders

The starting point of the Community will be the five target groups for the LINKS project that have been identified in the LINKS Description of Work (DoW), but these will be more closely stratified to provide a smaller and more concise target audience that will be intended to form the core of the Community. This is necessary as the expectations and goals for these stakeholders are different to those of the general target audiences: the LINKS Community expects greater engagement interaction, as described in the objectives of the Community, set out in Section 2.1.

Given the organic nature of the Community and the restrictions of ethical guidelines, this Strategy will not prescribe an exhaustive list of contacts, organisations and networks that partners should target for inclusion in the Community. Instead, examples of each type of audience will be given, as they are categorised by type of audience, but also by the level of their operations and focus (Local, Regional, National, European), which naturally will give them a distinct skillset and area of knowledge, that can be applied to LINKS research and exploited by partners accordingly.

The next section will identify the stakeholders most relevant to the LINKS Community and how partners can leverage their own contacts for the development of the Community.

For clarity and greater identification of key targets, the stakeholders for the LINKS Community will be grouped under five categories: practitioners, policy and decision makers, industry, the scientific community and citizens. The explanation of the constitution of each category is below. These categories were agreed by the LINKS consortium to be the most relevant to the Community as they were likely to have the relevant knowledge and experience to be a valuable resource for development of the LINKS research, as well as citizens being an important subject of the research.

As mentioned above, this is not to say that other stakeholders are not welcome in the Community; in fact, it is likely that their inclusion will take place and will prove beneficial. However, the core efforts at building the Community will be focused on five groups identified below:

2.2.1 Practitioners

LINKS follows the European Commission's definition of practitioners which states that "A practitioner is someone who is qualified or registered to practice a particular occupation [or] profession" (European Commission, 2017) in a field relevant to LINKS research areas. Practitioners are a key member of the LINKS Community as they are the main end-users of the LINKS project and

therefore their early involvement in the research procedures will emphasise the bottom up approach that the project is taking and help improve the credibility of the research, as well as improve the eventual uptake of project outputs. They will also play a crucial role in the validation and assessment of project outputs via their participation in the case studies and development of the LCC and LINKS Framework.

The LINKS Community will include practitioners from different levels, coming from such fields as: crisis management, internal and external security issues, law enforcement, public safety and civil protection, forensic information analysis and cyber security, national and regional resilience and support functions. Based upon these fields, it is apparent that these contacts can be drawn from both the public and private sphere and both are valid backgrounds for inclusion in the Community.

2.2.2 Industry

LINKS will include industrial bodies and private sector manufacturers that are relevant to the research and activities in the Community. These may be, and are not limited to, individual companies such as SME's or local business networks and suppliers of goods in services, that may be engaged in disaster resilience efforts or provide goods or services that can be utilised for SMCS, crisis management or another relevant interest for LINKS. Industry entities may be relevant either for their practitioner activities or for their research efforts, and both are welcome in the Community. While they are not necessarily the key focus of the LINKS Community, it is important to acknowledge the impact that they can have, especially related to adoption and proliferation of LINKS outputs, and therefore incorporation into the Community will be beneficial.

Given the local context of the case studies and the bottom up approach that involves new developments and innovative ideas, localised and more specialised business will be the initial target of the Community, for participation in the local case studies and development of these innovative elements. Further down the line, larger industrial partners can be sought for inclusion in the project, with the aim of adoption of LINKS outputs.

2.2.3 Policy / Decision Makers

Policy and decision makers are legislative and executive authorities that operate at different spatial and legislative levels and have a large cross-sectoral impact. They are strongly connected to the LINKS Community because of the responsibility they share, such as disaster risk management or decisions regarding the implementation of e-Government services that can facilitate such management. The scientific evidence that LINKS expects to obtain can be considered a key impact that will affect these stakeholders, and therefore their inclusion in the Community will help ensure that scientific results have a stronger impact.

In this category, experts or organizations working in the public or policy sector and using LINKS findings for the achievement of their duties to help the society are targeted. Standardisation bodies

will be approached for their participation as well, but are not necessarily expected to be key contributors to the Community. The LINKS Consortium will attempt to identify and contact the relevant people and invite the actors to the project activities that are relevant. If necessary and when possible, regulatory and legislative impact of LINKS outputs will be identified and discussed with policy and decision makers[10].

2.2.4 Scientific Community

2.2.4.1 *Researchers*

This category, composed of researchers in the (non-exhaustive) areas of crisis management, social media and crowdsourcing, social sciences, political science, technology, law, architecture and design, and environmental science is crucial for providing feedback on the validity of LINKS research processes and outputs and the understanding and analysis of the concepts of DRVP, DMP and DCT that LINKS will employ. LINKS aims to impact the scientific community by expanding the existing knowledge of SMCS in the crisis management domain.

Researchers in this field, or focused on other issues such as researchers on ICT, are dedicated to analysing problems to find solutions, and for exploring new avenues for research or opportunities to validate different approaches and confirm the most effective options.

These contacts will be a key part of the Community, through participation in the workshops and LCC and providing valuable feedback on the LINKS research. Once again, these contacts can be drawn from public research institutes, universities or from private entities, and both are valid contexts for inclusion in the Community.

2.2.4.2 *Networks*

This category, composed of academic networks in the areas relevant to LINKS research, is also crucial for providing feedback on the validity of LINKS research outputs and the understanding and analysis of the concepts of DRVP, DMP and DCT that LINKS will employ. While there will be overlap between individual researchers identified in Section 2.2.4.1 and the participants of networks identified under this category, it can be beneficial to categorise them separately as their relevance to the Community. The ways in which LINKS will engage with these categories may differ at times, for instance through direct involvement with individuals in LINKS research activities, versus broader engagement with networks via the LCWs and LCC. Specific network resources will be targeted to help to inform stakeholders and promote engagement with project activities and outputs. They will

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[10] According to the deliverable 9.1 "Policy and decision makers are legislative and executive bodies that operate at different territorial levels (local, regional, national and European) and in which many subjects are active, such as mayors, councillors, ministers, parliamentarians and Member of the European Parliament."

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also be key targets for 'Informing' (Section 2.4) the Community, through LINKS partners participation in these networks and regular opportunities for sharing of information.

2.2.4.3 *Related Projects*

Related research projects are an important vector for the development of LINKS. They are an important stakeholder category, as their environment needs to be aligned with LINKS' approach, avoiding possible overlaps and enhancing complementary synergies. The primary focus here is on similar European funded research projects, both completed and ongoing, for inclusion of their research findings and adoption of the networks of contacts that may have been developed, as well as understanding of the research topics and potential advice that can be received. Several of these projects have already been identified as part of the preliminary research in D9.1 and are included in Annex III.

2.2.5 Citizens

Citizens are one of the primary groups which the project research will impact. During a crisis situation they are one of the largest groups of not only consuming social media, but for crisis management purposes they can also generate an extremely large volume of potentially important information via social media and crowdsourcing. Therefore, involving Citizens in the Community will be beneficial for the research and also for strengthening resilience. Citizens encompass individuals and inhabitants of a given region, entity or authority and, for the purpose of their inclusion in the LINKS Community, are private individuals that either represent themselves or a wider group of citizens in a private capacity for the protection of civil rights, articulation of impacts on individuals and communities. Citizens can be considered via the same levels as the other stakeholders, and for LINKS, particular relevance should be given to local citizens who are likely to be impacted by the case studies.

LINKS identifies two key sub-categories of citizen stakeholders: Civil Society and Vulnerable Populations.

2.2.5.1 *Civil Society*

According to the UN definition, civil society refers to civil society organizations and non-governmental organizations (UN, 2020). Accordingly, this includes educational institutions, organized volunteers' groups, and others such as social movement organisations and networks. These organisations reflect the interests and will of citizens, while remaining independent of the government or authorities, as they will operate for the collective good, absent direct state control and commercial interest. The role of these groups in LINKS project is relevant (e.g. the participation of Save the Children Italia). They could offer a different perspective on the disaster risk management processes, helping to better focus on e.g. vulnerable groups or specific social groups that usually risk staying at the margins of the process or are engaged only in some phases (e.g. in crisis response but

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not in prevention). While they most likely have a shared interest in crisis management responses or activity in other research areas, they don't necessarily perform professional services nor have professional training or expertise. They also have the knowledge about the local situation that is potentially relevant in all phases of the crisis response.

2.2.5.2 *Vulnerable Groups*

Research activities may involve vulnerable people. Vulnerability is at the basis of the project, that aims to give more attention to the needs of vulnerable groups and improve their resilience. In this Strategy, vulnerable groups are all the groups of people with a high level of exposure and risk to the hazards and scenarios that are central to the LINKS research. Accordingly, socially vulnerable groups and temporary vulnerable groups are included. The first group includes all the people socially and economically disadvantaged who live in situations of marginalization due to one or more of their socio-economic characteristics, like gender, age, illness, disability, ethnicity, low-income and so on. Accordingly, this group includes (but is not limited to) minors, elderly people, refugees, irregular migrants, people with physical or mental disabilities, chronic-ill people, ethnic minorities. Instead, the second group includes people that could have a strong resilience but, due to specific circumstances, are temporarily exposed to risks, like traumatized people, tourists, volunteers, and first responders.

The table in Annex III provides examples as to how these different stakeholders function at different levels of geographic responsibility, legislation and expertise, and provides partners with an illustration of potential Community members.

2.3 Purpose of Engagement with the Community

As already identified in Section 2.1, the objectives of the Community have been defined. However, to transpose this into a practical understanding of how and why stakeholders will be engaged, the matrix below can be used by partners to identify the importance of the LINKS Community stakeholders to the objectives of each Work Package, within the context of their participation in the LINKS Community Workshop. A completed example is below, in Table 2. These have been shared with the relevant Work Package leaders, who, based upon their understanding of the objectives of their research have provided an initial attempt at completing their Matrix.

Table 2 Example Matrix Completed for WP5

WP5 Objectives	Practitioners	Policy / Decision makers	Industry	Researchers	Citizens
Formulate requirements and work plan for the LINKS Framework	5	2	1	5	1
Develop and evaluate the methods, tools and guidelines within the LINKS Framework	5	4	3	5	4
Produce and disseminate a sustainable LINKS Framework	5	4	3	5	3

These Matrices will allow the organisers of each workshop to pinpoint the relevant audience and thereby better target them for involvement in the Community. This will allow for clearer and more purposeful messages to be crafted and deployed to persuade the target groups to participate in the Community, as their relevance to each objective will be a reflection of their skills, knowledge and interests, and how they can utilise these for the betterment of the LINKS research.

These matrices will also help the Workshop organisers define the content to be discussed in their workshop, based upon the Community availability and relevance to each research area. These will be completed in the coming months, and the final versions included in D8.2.

As can be seen from the example matrix above (Table 2) , for the success of the WP5 research goals, the Community must clearly target practitioners and research organisations that are relevant to the LINKS Framework and that are capable of evaluating the guidelines and requirements for the LINKS Framework. This can be visualised as show in Figure 1. It may be the case that different stakeholders would be needed according to different phases of the project. While citizens would not be involved in defining the strategic planning (the roadmap) of the LINKS framework, their engagement is key in evaluating the potential added value of the output.

Combined with the stakeholder analysis in the LINKS Community Database (Section 3.1), these matrices can be used to evaluate whether the resources of the Community are sufficient to provide suitable engagement. For example, the relevance given to each stakeholder group by the WP leaders will inform the prioritisation of targeting certain stakeholder groups for inclusion in the Community. This analysis will be provided with the full conclusions in D8.2.

Figure 1 Relevance of Stakeholders to WP5 Objectives Matrix[11]

Relevance of Stakeholders to WP5 Objectives

- ■ Produce and disseminate a sustainable LINKS Framework
- ■ Develop and evaluate the methods, tools and guidelines within the LINKS Framework
- ■ Formulate requirements and work plan for the LINKS Framework
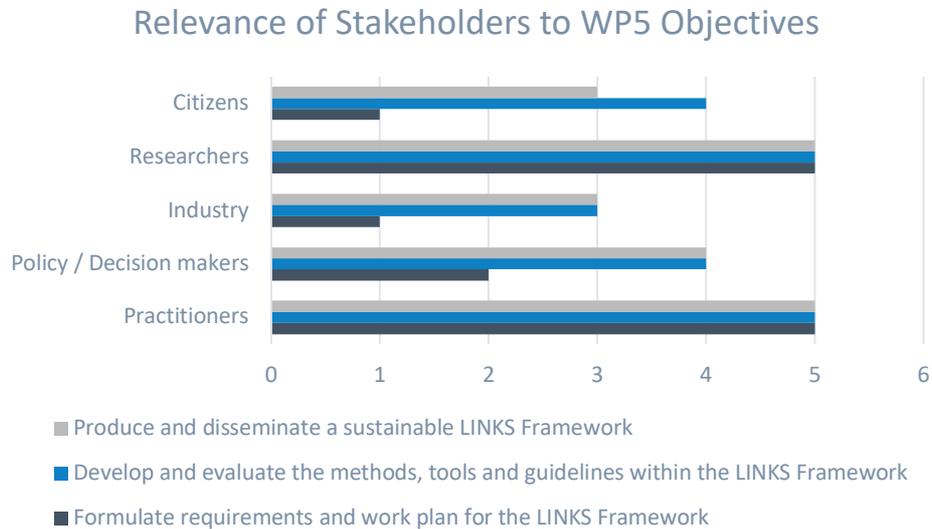
This can therefore also be used for motivating partners within each Work Package to share relevant contacts and leverage their networks for specific purposes. Once the Matrices are complete, they can be used to help plan the engagement with each Community stakeholder group, as set out in the following section.

2.4 How will LINKS Partners Engage with the Community?

Like other EU funded projects, LINKS will follow the Spectrum of Public Participation, which has been developed by the International Association of Public Participation (IAP2): informing, consulting, involving, collaborating and empowering. The idea of using the Spectrum of Public Participation is justified by the wish of having "all communities to be authentically engaged in decisions that affect them through education and increasing awareness of authentic engagement and all its benefits" (IAP2, 2018).

As mentioned previously, the two main vehicles for engagement of stakeholders will be the LINKS Community Workshops and the LINKS Community Center. More information on these is available in Section 4 and 5 respectively. Given the context of the LINKS Community, active participation by stakeholders is expected to be a key function of the Community; that the LCC and LCW will be important avenues for dissemination of project results; and that the feedback that they Community provides will have a significant impact on LINKS research results, EOS has adapted the spectrum to suit the anticipated roles of the Community: Informing, Consulting/Involving, and Empowering.

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[11] Scale of relevance: 1 - should not participate; 2- irrelevant to results; 3- can provide context, but no direct impact; 4 - of secondary important; 5 - fundamental to objective.

Figure 2 LINKS Spectrum of Stakeholder Participation
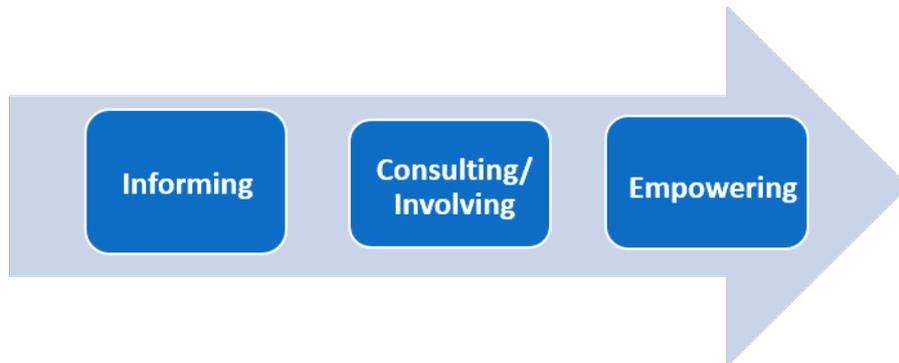
Source: Adapted from the IAP2 (International Association for Public Participation)

These are defined below:

Informing: Per the IAPP, informing is defined as the provision of "balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions." (ibid.)

Consulting/Involving: from the same source, Consulting is considered to be "obtaining public feedback on analyses, alternatives and/or decisions" (ibid.), while Involving is "to work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered." LINKS partners have the opportunity to both consult and involve the Community throughout the duration of the project and different tools are available to allow them to achieve both.

Empowering: "To place final decision making in the hands of the public" (ibid.). While LINKS partners will retain decision making power, the inclusion of external participants, including citizen stakeholders will give a degree of empowerment to the stakeholders. This is important, not just to ensure that the bottom up approach of project is respected, but to improve the impact of LINKS solutions and research outputs.

In Table 3, each of the core stakeholders in the Community and the expected interaction with each level of participation will be set out. Tools to achieve these levels of engagement are defined, and some Key Performance Indicators will be defined, so that in the second iteration of this Strategy (to be delivered in M21), LINKS can assess whether the levels of engagement with the Community will be sufficient to achieve the objectives.

In Table 4 the roadmap for stakeholder engagement is outlined, with a focus on actions, milestones and tools.

All partners are expected to contribute to the development of the Community through use of tools outlined below in table 3 and 4. These are further elaborated in Section 5 and D9.1 Section 6 (LINKS Dissemination, Exploitation and Communication Strategy). It is expected that efforts to build the Community via communications tools will be complementary to the Dissemination and Communications activities detailed in D9.1.

While many efforts, such as production of newsletters and website updates, will be managed centrally under WP9, individual partners can help achieve cascading impacts via secondary dissemination through their networks and promotion of the LINKS Community through channels independent of the LINKS project, such as social media, partner websites, participation in conferences and workshops etc. The table below also identifies the targets that the engagement with the Community is intended to achieve, and measurements to validate if these goals have been achieved[12]. These activities will be monitored as part of WP9 and a summary of activities will be included in the second iteration of this Strategy.

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[12] The measures in Table 3 have been calculated by dividing the overall target numbers by the number of categories. It is understood that this is not an accurate representation of the likely composition of the Community, nor the desired composition. These targets will be updated in D8.2, as the target numbers for each stakeholder group will vary depending on their relevance as decided by the WP leaders in the Matrices, as well as through the two Community member reviews mentioned in Section 2.1. Both quantitative and qualitative indicators will be used to assess the targets to achieve. In other words, the number of the stakeholders as well as their relevance will be taken into account. Target numbers have not been provided for industry and policy/decision makers as their exact contributions and input is still to be defined.

Table 3 Objectives and Tools for Achieving Stakeholder Engagement

	Informing	Consulting	Empowering
	Practitioners		
	Practitioners should be kept aware of the status and outcomes of LINKS research so that they can incorporate into their daily practice. This will allow for better feedback at the next level of engagement.	Practitioners should be engaged via Workshops to receive their feedback related to LINKS activities and outputs.	Give practitioners a role in decision-making during the research process to develop credibility and promote inclusion in the Community as they will be utilising the LINKS outputs.
Tools to achieve	Network Participation, CMINE, Community Updates, LCC.	LCW, Online Workshops. LCC.	LCW and participation in LINKS Community, LCC, LINKS Framework.
Targets to achieve	Ensure that sufficient practitioners are part of the Community to provide a significant audience for LINKS outputs	Methods, Tools and Guidelines of LINKS Framework evaluated, and feedback provided.	Validation of the LINKS Framework through professionals and experts.

	Informing	Consulting	Empowering
How to Measure	50 total stakeholders in the Community by M18[13]	20 Workshops held	Feedback has been received from 70% of workshop participants; Positive feedback regarding external implementation of LINKS Framework received.
Industry			
	Communicate LINKS research findings and impacts to industrial stakeholders	Involve in Community to understand practices in the provision of relevant goods and services, and how LINKS research will impact and be impacted by this.	Gain approval of industrial stakeholders through engagement to increase validity and uptake of LINKS outputs.
Tools to achieve	Partner contacts, existing networks, conferences, standard D&C activities.	Engagement in LCW and LCC.	Final conference, demonstrations, LCC.

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[13] All figures are indicative of the total number of expected participants. They will be adjusted to reflect the prioritisation of stakeholders according to the WP leaders responses to the Matrices.

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	Informing	Consulting	Empowering
Target to achieve	A range of Industrial stakeholders are present and engaged in LCC.	Methods, Tools and Guidelines of LINKS Framework evaluated and feedback provided.	LINKS Framework understood and adopted into work practices, if relevant. Opportunities for feedback received.
How to Measure	50 total stakeholders in Community by M18	20 Workshops held	Feedback has been received from 70% of workshop participants.
Policy and Decision Makers			
	Inform of LINKS innovations and the impacts of LINKS outputs and standardisation potential	Identify with public authority's potential policy implications of the LINKS outputs	Work closely with stakeholders to ensure that their engagement is followed and LINKS outputs comply with current legislation and can contribute to standardisation efforts
Tools to achieve	White paper, survey responses	LCW, Meetings, Roundtables	Final conference, demonstrations, LCC.

	Informing	**Consulting**	**Empowering**
Target to achieve	Keep Policy and Decision Makers informed about the LINKS Community, and, more importantly, its impacts.	Legislative and regulatory impacts are considered in the design of the Framework.	LINKS Innovation Management properly accounts for the legislative and regulatory arena in which they will operate. Standardisation opportunities are exploited.
How to Measure	Sufficient output of targeted documents; Participation by stakeholders in Community.	10 stakeholders participation in Workshops and other LINKS events; 20 Workshops held	Feedback has been received from 70% of workshop participants.
Scientific Community			
	The Community must be kept fully informed of research processes and their current status, as far as possible given potential confidentiality clauses, so that the impact of LINKS research can be better analysed by the Community.	They are expected to be participants in several workshops; their particular sector of expertise should be identified early so that they can be approached for the correct Workshops.	Allow opportunity for co-creation and presentation of own research experience, for incorporation in LINKS Framework research process.
Tools to achieve	Research papers, Newsletter, website, Social Media	LCW, Online Workshops, Surveys, Co-creation.	Final conference, demonstrations, LCC.

	Informing	Consulting	Empowering
Targets to achieve	Scientific Community should be kept aware of the status and outcomes of LINKS research so that they can rely on new knowledge developed by the project. This will allow for better feedback at the next level of engagement.	Methods, Tools and Guidelines of LINKS Framework evaluated and feedback provided.	Validation of the LINKS Framework through professionals and experts.
How to Measure	50 total stakeholders in Community by M18	20 Workshops held	Feedback has been received from 70% of workshop participants. Positive feedback regarding external implementation of LINKS Framework received.
Citizens			
	Keep Citizens informed about the LINKS Community, and, more importantly, its impacts and opportunities to contribute.	Ensure that the public concerns and aspirations regarding LINKS are well-received and taken into consideration by the consortium	Give genuine opportunity for feedback and participation in decision making processes

	Informing	Consulting	Empowering
Tools to achieve	Standard communication activities, local network exploitation.	Engagement in LCW and LCC, surveys, participation in case studies.	Newsletters, Proper communications about ethics and guidelines, opportunities for interaction with project decision makers.
Targets to achieve	Common Understanding of Disaster Resilience is Achieved; Improved and ongoing information exchange achieved.	Citizens have the opportunity to share their understanding of SMCS and the impact it may have on them for Disaster Resilience measures.	LINKS Framework successfully designed based upon positive impacts upon citizens.
How to Measure	Sufficient D&C activities as indicated in D9.1 Stakeholder participation in Workshops.	20 Workshops held	Feedback has been received from 70% of workshop participants.

The roadmap below will be used to inform and schedule engagement activities, to ensure that efforts to build the Community are well managed and progress can be achieved. It will also contribute to the sustainability of the Community, which will be looked at further in Section 5.

Table 4 Roadmap of Activities for Community Engagement

Activity	WP	Actions	Timeline	Milestones	Tools
Stakeholder Analysis performed	WP8	EOS will perform an initial (and then ongoing) stakeholder analysis to begin building the Community	M5-42	M6: WP9 surveys analysed, and contact database built M8: Full stakeholder analysis conducted. M42: Stakeholder analysis has been conducted throughout the project to ensure new members of the Community are relevant.	Survey, Partners Knowledge, Stakeholder Analysis Forms
Recommendations Made for Stakeholders Inclusion in Community	WP8	Once analysis is performed, EOS will liaise with WP leaders and LCW organisers to decide relevancy/gain approval for stakeholders and begin approaching for their inclusion	M7-M38	M7: Workshops with LINKS partners held for prioritisation of stakeholder targets M8: Results of stakeholder analysis presented to LINKS partners and approach made to stakeholders for inclusion in Community.	Internal Meetings, Partner Surveys, LCW

Activity	WP	Actions	Timeline	Milestones	Tools
				M12: initial group of stakeholders have been invited to Community.	
Communications with Community members	WP7, 8, 9	Throughout the duration of the project, Community members will be kept updated with relevant project news. We will also look for ways to for members to contribute to this, to begin transition from informing to empowerment	M5-42	M10,16,22: Newsletters sent M18: LCW's held to support development of first version of Framework. M30: Further LCW's held to support second version of Framework. M38: Final round of LCW's held for development of Final Version of Framework.	Newsletters, Meetings, Social Media, Direct Contacts, Website, LCC, Events
Community Activities begin in LCC	WP7	Once LCC is established, LINKS partners will begin to conduct activities and develop functions of LCC.	M10-24	M12: Concept of LCC available. M16: First Demonstrator of LCC. M24: Final Demonstrator of the LCC.	LCC, Mailing Lists, Newsletters, Direct Contacts, Social Media
Engagement through LCW	WP8	Throughout the project, stakeholders will be consulted and empowered through LCW. These will be conducted regularly, on specific topics.	M8-M38	M12:2 Workshops Held M18: 10 Workshops Held M28: 16 Workshops Held	Mailing Lists, LCC, LCW

Activity	WP	Actions	Timeline	Milestones	Tools
				M38: 20 Workshops Held	
Engagement through LINKS Events	WP7,8,9	LINKS will host events (virtual or in person) and the Community will be shared within. Specific events, or sessions, may be organised to involve Community members	M5-M38	M12: 2 Interactive Workshops Held M24: 5 Interactive Workshops Held M42: 10 Interactive Workshops Completed	LCC, Events, Meetings, Interactive Workshops.
Deployment of LINKS Framework	WP5, 6	After Framework is finalised, Community will be key asset in promoting deployment and driving successful implementation/integration	M18-38	M18: First version of Framework is designed. M30: Second version of Framework is designed M38: Final version of Framework is available.	LCW, LCC, LINKS Hub
Establishment of LINKS Hub	WP6,7,8,9	LINKS Hub – which is currently being conceptualised - will be vehicle through which the outputs of LINKS project are shared and assessed: the Community, LCC and Framework will be encapsulated in this Hub, and the success of the steps laid out prior to this will improve the sustainability of the Hub.	M9-M42	M9: LINKS Hub Conceptualised MTBD: LINKS Hub Active	LCW, LCC, Final Conference, Website

3. HOW TO BUILD THE LINKS COMMUNITY

This section will inform partners as to the procedures for building the Community and how their contacts, networks and activities can be used to develop the Community and ensure that the correct stakeholders are informed and motivated to participate in the Community and engage with the LINKS research.

3.1 LINKS Community Database

Annex VI contains two tables that will contain the initial mapping of the LINKS Community. In Annex VI, they are completed with exemplar data, but for the purposes of the project they will be maintained via the SharePoint depository. These tables are the Individual Contact Database and the Entity Contact Database. These contacts will be considered potential members; once they are confirmed as part of the Community, they will be held within Database Management Software Insightly, which is an online tool that will allow for great stratification and management of contacts and organisations, as well as better mapping of relationships between contacts and the project.

These tables collect the necessary contact information for LINKS to perform two operations: a stakeholder analysis (which will be developed in section 3.3) and to suggest their participation in the LINKS Community (dependent on the results of the stakeholder analysis). The database will firstly be completed by transferring the data provided by partners as part of the Dissemination and Communication Stakeholders survey.

The Individual Database contains fields that allow for the stakeholder category, level and relevance to the LINKS project can be easily identified, as well as contact ownership to ensure that Data Protection regulations are followed in cases that Legitimate Interest[14] Is not sufficient. The collection and storage of personal contact information in the database will also comply with relevant data management policies and procedures detailed in the LINKS Data Management Plan.

The Entity Database collects information on groups of stakeholders that may be relevant to the LINKS Community, such as networks, platforms, conference groups or clusters. These are collected separately for two reasons: firstly, their interaction and engagement with the Community and LINKS research will be different to that of individuals, and secondly, they will require a more nuanced and selective approach than individual members of the Community, and therefore collecting them in a separate Database will help facilitate this. Contact ownership is also identified, to ensure that Data Protection regulations are followed in cases that Legitimate Interest Is not sufficient. As with the first database, the collection and storage of personal contact information in the database will also comply with relevant data management policies and procedures detailed in the LINKS Data Management Plan.

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[14] https://ec.europa.eu/info/law/law-topic/data-protection/reform/rules-business-and-organisations/legal-grounds-processing-data/grounds-processing/what-does-grounds-legitimate-interest-mean_en

These databases will initially be populated by EOS, who will use the results provided by partners via the Stakeholder Map in D9.1 to acquire initial targets. They are intended to be organic and will be updated throughout the project by EOS, via suggestions from partners, EOS own stakeholder mapping activities and through efforts to disseminate the LINKS Community such as via the website and social media channels.

3.2 External requests

On the LINKS website, a specific page, with a description of the LINKS Community will be dedicated to it. Presenting the benefits stakeholders could get by joining the Community, the page will give the opportunity to fill in a questionnaire which will be directly sent to EOS.

EOS, being the contact point for external requests, will present the applications to the LINKS Executive Board for screening for suitability for the Community.

Once these databases are established, a stakeholder analysis will be performed by M8 to identify their relevance to the LINKS Community and to better define the messaging that will be used to promote the Community. The next section discusses the analysis and messaging that will be employed to ensure stakeholder participation in the Community.

3.3 Key Stakeholder Analysis

The identification of stakeholders' interests in the LINKS Community will be an important task, as the Community will be expected to play an important role in informing the LINKS research, and will therefore need to have relevant and exploitable knowledge and expertise. Further to this, in order to successfully build the Community, LINKS will need to deliver well-oriented messages to each group of stakeholders, that address their importance to the Community and inform the target of the purpose of the LINKS Community and persuade them that participation in the Community is a beneficial and worthwhile activity. To do this, an understanding of each stakeholder groups' relation to the LINKS project and their interest in the research should be undertaken, and the methodology to do so will be introduced in the following section.

EOS will use the form in Annex VII to analyse the likely motivations for stakeholders to engage in the Community, and subsequently, how the project research meets these motivations, thereby building a convincing case for stakeholders to participate in the Community. These contacts will also be subjected to a deeper analysis by EOS, alongside input from partners regarding their requirements from the Community.

This will be managed through Workshops organised by EOS, by the end of M10, where the expertise that partners require and the topics of interest, as well as the relevance of certain stakeholders will be more fully explored. It is expected that as an output of this analysis, EOS will be able to develop relationships between stakeholders based upon their shared interests, and where they are able to

contribute to the LINKS research. This analysis will be actualised via the Community Center, which will likely be formed in a manner that allows for stratification of Community members based upon shared interests and specialties, and their potential contributions to the LINKS research.

Once the analysis is completed, it will be shared with the Executive Board for screening and approval. EOS will then proceed to build the Community via contacting the relevant stakeholders and inviting them to join the Community. It is expected that these will be done in a select manner, so that a concrete offer of participation can be extended, perhaps via participating in a Workshop or other means of engagement, such as a survey. These contacts will be held via Insightly, for which EOS will manage the database utilising a free account. This will be revisited as part of the construction of the LCC.

The results of the stakeholder analysis, as well as key messages that have been used to communicate with members of the Community and external stakeholders will be provided in the second iteration of this Strategy (to be delivered in M21), after partners have been able to interact with stakeholders to complete the analyses and judge the effectiveness of different approaches.

The matrices introduced in Section 2 will help partners identify the relevance of stakeholders to their research and develop better communications with them. This will ensure that when news and communication efforts are planned and executed using the tools identified in Table 3, they are correctly targeted to the relevant stakeholders so that the audience and subsequent response is well optimised.

4. LINKS COMMUNITY WORKSHOPS

As mentioned previously, this deliverable will set out how the LINKS Community will be engaged to leverage their knowledge and experiences for the benefit and development of the LINKS project research. The LCW are one of the major ways in which the Community is expected to engage with the project partners. It is expected that a series of Workshops will be held, in the same countries as the case studies, with local contacts, to leverage the knowledge of the Community and apply it to the LINKS research. The purpose of this section is not to define the content or exact format of the Workshops - this is the role of the specific partner responsible for each workshop - this section will provide guidance towards the expected structure and operation of the Workshops.

To ensure that the engagement is beneficial for project partners and conducted in the optimal manner for the participants as well, this section will first of all describe the medium through which the Community will be engaged and how these will be conducted; it will consider the timeline for the conducting the LCWs and the topics on which they will be held; finally, the means for receiving input from participants and feedback on the LCW will be laid out.

4.1 What are Workshops and what is their Purpose?

Establishing an effective means for knowledge exchange for the Community is key to the success of the project and ensuring that partners are provided with a valuable resource. It has been decided that the means to do this is through a series of Workshops, to be organised locally by partners on topics relevant to their research. For this to be a success, the definition of a workshop needs to be provided and a series of principles extracted to inform the organisation, so that partners can concentrate on creating the content and research questions.

The main objectives of the LCWs will be to 1) improve information and knowledge exchanges among the stakeholders in local cases, together with relevant stakeholders and experts in the broader LINKS Community 2) collect data and inform the assessments in WP2-4 and development of the LINKS Framework, and 3) to disseminate project developments and results among the case stakeholders.

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Table 5 Examples of Events

Organising Structure	Participant Number	Presentation Style/Interactivity	Length	Number of Topics	Information Flow	Outcome
Conference	Large	Passive/Low	Variable - medium to long	Multiple	From presenter to participants	New Information received for audience
Presentation/Exhibition	Singular	Active/Medium	short	Singular	Between participants and presenter	New Information received for audience
Lecture	Medium	Passive/Low	Medium	Multiple	From presenter to participants	New Information received for audience
Workshop	Small	Active/High	Short	Singular	Between participants and presenter	Discussion of topics and evaluation for organiser
Seminar	Small	Active/High	Short to medium	Singular	From presenter to participants and between participants	Discussion and evaluation of ideas for participants

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The Consortium can look at each of the principles in turn to further understand how a workshop should be organised and then transpose them into a set of recommendations for how LINKS Community Workshops should be organised.

Participant Number:

- Large: Large audiences are considered to be those that are in attendance at a conference, or virtually, that attend an online webinar. This can range from 40 people into the hundreds.
- Medium: Medium sized audiences can be smaller conferences, or larger meetings. A range of 15-40 people would be considered a medium size audience.
- Small: A small audiences would be a workshop, roundtable or meeting. This would suggest as size of between 5-15 people.
- Singular: Singular represent an audience size of almost one to one, with a maximum of five in the audience. For example, in a small meeting or while presenting an exhibition stand during a networking event.

Workshops should take place with a sensible number[15] of participants. This will allow for enough direct contact between the Presenter(s) and the participants, and will allow for effective group work sessions if required. Smaller numbers also allow a larger space for participants to contribute and develop ideas, rather than having to wait their turn to offer a contribution amongst a larger group. This also allows presenters to develop ideas and follow up on suggestions presented by participants in real time, rather than simply noting comments and moving on to the next. Keeping numbers small also allows for a more specialised and experienced participant list, who can be invited based upon their credentials and relevance to the topic.

Presentation Style/Interactivity:

- Active: An active presentation style is one that encourages audience participation through specifically designed sections or opportunities for contribution and engagement
- Passive: A passive presentation style is one that simply delivers information to participants with no explicit opportunities for feedback.
- High: High interactivity refers to the willingness of the group, and presenter, to engage in exchanges. A highly interactive session will feature many exchanges between presenter and audience, that occur organically or otherwise.
- Low: A session with Low Interactivity does not feature many exchanges between presenter and audience.

In a workshop, presenters are given the opportunity to utilise more hands-on and direct approach to communicating information. It is encouraged to use demonstrations, incorporate group work and interact directly with participants at all times, and encourage participants to discuss and offer

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[15] this should have a ratio of a maximum of 10 participants to each organiser present

contributions at all stages. The difference between Presentation Style and Interactivity is that active presentations explicitly design workshops and presentations to encourage contributions and participation by those in attendance, while highly Interactive sessions may occur naturally, without the presenter specifically designing the material to enable this. Therefore, the table details both types of engagement, to show that workshops expect equal and quality contributions from the participants, and that they should be specifically designed to foster this. Important tools to foster this type of interactivity and engagement by participants are case studies and group work.

Length:

- Short: A short session lasts for no more than two hours.
- Medium: A medium session lasts for between 2-4 hours i.e. one morning or afternoon.
- Long: A long session lasts for over 4 hours.

Workshops are expected to take place over one or two days, to allow for multiple topics to be addressed. These can be organised through separate sessions that then address specific topics and thus the time allotted to hold them should reflect this. If a session continues for too long, participant attention and motivation become harder to retain and thus contributions and engagement is weakened. On the other hand, if a session is too short, then it can be difficult to fully explore topics and perform a detailed analysis. Finding the right balance in the length of the session is important, and allows flexibility for the organiser to achieve the final results that are desired. Further to this, workshops can be self-contained, with no follow up or organisers can schedule follow up meetings, perhaps online, to discuss the feedback and its implementation further.

Topic:

- Single: Only one specific area is dealt with.
- Multiple: Several, inter-related areas are addressed.

Workshops can be organised around one specific topic or multiple, related topics. If organising a workshop with multiple topics, these can be addressed in separate sessions, so that participants can perform a full analysis and evaluation of each topic and provide detailed, specific feedback. However, these topics should be related to the same research area within the project. This can allow for a more specialised set of participants and avoids confusion of research topics. Ultimately, this will allow for a greater level of feedback and more granularity for the LINKS research, which should lead to more effective solutions.

Information Flow:

- From Presenter to Participants: the presenter shares information with the participants, who receive it without passing information back in return.

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- From Presenter to Participants and Between Participants: the presenter shares information with participants, who share among information among one another, but no information is returned to the Presenter.
- Between Presenter and Participants: information is shared by the presenter with the participants, who share information among one another as well, before sharing information in return with the presenter.

A key aspect of workshops, and the key to the success of the LINKS workshops, will be the directions in which information is shared, evaluated and incorporated into future actions. In a traditional education setting, the flow of information is one-directional, with information being shared by the presenter and received by the audience. In a workshop scenario, the flow of information is very different. While the initial 'package' of information is shared with participants by the presenter, this information is then deconstructed and discussed among the participants and with the presenter, possibly several times.

The discussions and the thought process are transmitted back to the presenter as well as the conclusions of the evaluation, and can be as important as the final conclusions when providing input into LINKS research. Based upon this process and organising the workshops to facilitate this, information is not just shared *from* the presenter and *received* by the audience as individuals, but is shared *between* the participants, who are all therefore equally aware of the state of the collective and individual analysis, and *between* the participants and the presenter, meaning that the presenter is also receiving new information and inputs, based upon the discussions.

Outcome:

- New Information received for audience: The audience leaves the session with newly acquired information.
- Discussion of topics and evaluation for organiser: The organisers (and presenter) have received feedback on the topics that they have presented to participants.
- Discussion and evaluation of ideas for participants: The participants have received new information and discussed among themselves, developing this information further.

The outcome of the organising medium is the impact that each has upon those participating and facilitating in each session. Conferences, lectures and other sessions with low interactivity and one-way information flows tend to only have a strong impact on the audience. On the other hand, highly interactive sessions with multi-directional information flows can impact both the presenter and the participants. This the outcome expected of the LINKS Community Workshops: that the discussions and conclusions reached are used to develop the project research further.

Based upon the principles above, we can create an 'ideal type' structure for the LINKS Workshops, shown in the table below. Partners can engage with the stakeholders identified above and invite them to attend through a number of different means, such as person to person contacts, mailing

lists, communication through the LINKS Community Center, advertising through LINKS online and offline channels and through communication with the relevant networks through email. Partners should aim to keep a database or log of contacts and invitees for reporting and organisation purposes. These engagement efforts are complementary to the dissemination and communication activities of WP9.

Table 6 Ideal Type Structure of the LINKS Workshops

Organising Structure	Workshop
Participant Number	6-15. Larger groups may be difficult to manage with just one presenter. Alternatively, with more presenters, more participants can be invited. Keeping participants numbers low allows for specialisation.
Presentation Style/Interactivity	Group work/case study discussions. Multiple audience question and feedback opportunities
Length	Maximum two hours.
Number of Topics	One. Possible to discuss multiple topics within the same research area through a series of workshops.
Information Flow	Multi-directional. Organiser shares information with participants, they share information among themselves and with the organiser. Can be structured through group work, or take place organically through audience interaction.
Outcome	Feedback received by Presenter and incorporated into LINKS research. Can be done through recording verbal feedback from participants, or through requesting written feedback. Depending on the identified research goals and targets for the workshop, different forms of feedback may be required or requested. The simplest means could be through asking participants to discuss and record their thoughts and conclusions on worksheets throughout the workshop.

This table shows the key organising principles that should help structure the LINKS Community Workshops. These are advisory, not prescriptive, so it is possible to deviate from these parameters should the specific context of a workshop need to. The next section will focus on helping practitioners implement these principles, by developing a methodology for planning and conducting a community workshop. Of course, if organisers have alternative methods or formats that they wish to plan the workshops around, they can do so as the LCW are not limited to this definition.

4.2 How to Organise LINKS Community Workshops

LINKS Community Workshops will be organised collaboratively between EOS, as leader of the Community, and the local partner who is hosting and conducting the Workshop. EOS will use the Community to find relevant stakeholders to attend the Workshop, who will be invited via email, or if possible, directly in person through local contacts. The relevance will be informed via the stakeholder analysis, the Matrices completed by WP leaders and the discussions that will take place in the WP8 Workshops.

The invitation will clearly explain the purpose of the Workshop and why their particular input is valued, and, if possible, why the Workshop will be beneficial for the Community as well. Where possible, EOS will manage the invitation process, but if there are specific factors that may prevent this, such as the language barrier, the local partner may be asked to invite participants as well.

While the partner responsible for conducting the Workshops will define the content and purpose of the Workshops, EOS will work alongside them to help design and structure the Workshops in a manner that is most effective, based upon the topics of discussion, the feedback that is required and the methods of presentation available, such as demonstrations, videos or case studies. The next section details the steps for planning a website, which will be conducted by the local partner, with the support of EOS.

4.3 How to Plan a LINKS Community Workshop

When creating this process, EOS has drawn from the Design Thinking (Interaction Design, 2020) approach and utilises three of the five steps involved in Design Thinking: Define, Ideate and Prototype. Define refers to understanding and framing the problems that need to be solved through the Workshops; Ideate is the processes through which solutions are suggested for the problems and finally Prototype is the stage in which the ideas and solutions are analysed and tested. Different methods are available for proceeding through each stage, and organisers are encouraged to use any methods they are familiar with and tailor each session to suit the topic at hand.

Step 1

The first task for each organiser is to understand their goal for the workshop: are they aiming to receive feedback on a specific research question? To demonstrate a new technique and receive feedback on its implementation? Once this is understood, it will be easier to design content for the workshop that will allow participants to work towards these goals and provide the input required. Beginning with the end goal in mind will ensure that the Workshops remain focused and relevant for the participants and a valuable tool for the LINKS research.

Step 2

Once the goals are understood, the second task for organisers is to ensure that they can demonstrate their research and providing concise explanations of the concepts, theories and practical application of the discussion topics. Ideally, this will involve some interactivity, either through a quiz, real-life examples or group work to enable a more engaging form of sharing information and help participants thoroughly grasp the concepts, so that they are better able to analyse and provide feedback.

Step 3

The third step is to design an evaluation section that allows participants to comprehensively discuss and evaluate the topics at hand and reach conclusions that can be incorporated into LINKS research. Typically, in a workshop, the evaluation process can be performed in smaller groups, that are set a task to work on or a case study to evaluate. Depending on the topic being evaluated and the output format, this can be assisted through worksheets, visual aids or datasets. Dividing participants into smaller groups will help provoke discussions and allow all participants to contribute. Ideally, one organiser per group will help facilitate discussions, but this may not always be possible.

Step 4

Design an effective feedback mechanism to allow for evaluation and discussion results to be clearly identified and incorporated into LINKS research. An ideal feedback mechanism will allow participants to share not only the conclusions of their discussions, but ideally the content of the discussion and thought processes as well. This can help give further insight into the research evaluation. EOS will work with the Workshop organisers to develop feedback forms that can be adapted to the relevant content of each workshop. A suggested feedback form (that organisers can adapt, is included in Annex V).

This guidance can be used by organisers to complete the following table, which can inform the structure of the workshops (again, only advisory, not mandatory):

Table 7 Information about the Structure of the Workshops

Workshop Title and Prospective Date	
Attendants	Identify the participants and their role or specialty and how they are relevant to the Workshop
Workshops Topic	The Area of Research that the Workshop/Individual session concerns.

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Research Goals	The purpose of the Workshop; what is required from the participants and what problems are going to be tackled. What the organisers are seeking to learn from the Workshop/Sessions.
Part 1: Introduction (15 minutes)	This should introduce the organisers, the topics covered in the Workshop/Session and the structure of the Sessions. Key definitions and research areas should be briefly explained. It is also helpful to explain to the participants their role and the goal for the Workshop.
Part 2: Research Description (repeatable) (30 minutes)	A more in-depth look and explanation/analysis of the problem that the Workshop is assessing. This can be explained in the manner most comfortable for the organiser but would ideally involve interactive elements to enhance the understanding of the participants.
Part 3: Evaluation by Participants (repeatable) (40 minutes)	This section allows the participants to analyse the problems/research that has been introduced previously and offer solutions and feedback within groups. This part should allow the participants time to discuss various solutions and analyse their potential and impact on the problems presented in the Workshop. The organisers should aim to participate in these discussions in order to give context and frame them around the LINKS research areas and the Workshop goal.
Part 4: Feedback (repeatable) (15 minutes)	This section allows participants to briefly summarise the content of their discussion and analysis and describe the solution that they have arrived upon. The organisers should also encourage participants to use provided feedback sheets during part 3 so that written feedback is also available.
Conclusions (10 minutes)	Organisers are able to briefly summarise the discussions that have taken place in the Workshop, the problems introduced and the solutions that were presented.

While every effort will be made to ensure that the LCW take place in person, given the context in which this deliverable is being written, with a global pandemic currently preventing the organisation of any face to face meetings, it would be remiss not to acknowledge and prepare for circumstances in which some, or potentially all, of the LCW cannot be held physically and therefore will require alternative arrangements. This is detailed in Annex II.

4.4 Timeline of LINKS Community Workshops

In order for the LCW to best contribute to LINKS research, it is important that they are held at opportune moments so that the feedback can be incorporated in a timely manner. As this Strategy will be delivered in M4 and updated in M21, the timeline in Annex IV only considers research between those two dates. The timeline is organised by Research Area (Work Package) and indicates if there is overlap that can be exploited between Research Areas. While it is currently empty, as it is too early in the project to accurately identify the dates for the LCW, it will be completed by the organisers once they have a clearer picture of the research timeline. An updated version of the timeline will be produced in the updated Strategy, to be delivered in M21.

To give an indication of how the LCW organisers should approach the timeline, they can consider several factors that will inform the timeline for the Workshops. The purpose of the Workshop is a key factor to consider. Depending on the type of research to be presented and the expected contributions from participants, it may be more beneficial to hold a Workshop earlier or later in the deliverable and research cycle: if participants are expected to contribute to the initial findings or hypotheses, earlier in the cycle would be better; if participants are intended to validate or test research findings, later in the cycle makes more sense.

Dependencies are another factor to consider. If other research outputs from the project are relying on input from a specific Workshop or Work Package, holding a Workshop earlier allows for better planning and understanding for the dependent partners. Clear planning and understanding of the synergies between different workshops and work packages is therefore vital, and the timeline and deliverable matrix will help partners map where collaboration is needed to take place.

Another factor that could affect the timing of the workshops is the format. In person Workshops may take considerable time and resources to organise and therefore may take place later in the project, whereas virtual workshops could be organised in an easier manner, therefore taking place sooner. Nevertheless, factors such as the access to online tools, meeting durations and breaks, and other issues will need to be taken into consideration.

These are some factors to consider when scheduling the Workshops. The most important factor is certainly the outputs and contributions, that are expected from the Workshops. Understanding when and how these are required to inform project research will give the clearest indication of when the Workshops should be organised.

5. SUSTAINABILITY OF THE LINKS COMMUNITY

This Section will begin to identify ways to improve the sustainability of the LINKS Community. As mentioned previously, the ambition of the Community is not simply to be a resource for LINKS partners, but to be a resource for the stakeholders that are members of the Community. For this to be achieved, it will be necessary to plan for the sustainability of the Community once the project has been completed.

At this stage, the main rationale behind the LINKS Framework, as well as the integration in the LCC, are being discussed internally. It can be foreseen that the Framework, the LCC and the LINKS Community will use the same environment, ultimately interacting within the so-called LINKS Hub. Having one space to facilitate both the uptake of the project results and the also the development of the Community as such.

5.1 Why does the LINKS Community need to be Sustainable?

The Community needs to be sustainable so that the ambition of creating a European-level network of expert knowledge to improve European disaster resilience through SMCS remains available for stakeholders to exploit. Ensuring that this knowledge and the resources that LINKS will produce, such as the Framework, remain available for practitioners will be the result of successful stakeholder engagement and the Community demonstrating its value to participants during the project.

Specifically, engaging researchers and practitioners[16] (as well as other stakeholders) early and often will allow for their direct input into the LINKS research, leading to a Framework that is a valid tool for them to adopt into their work and research. By making the Framework a tool that is beneficial to use in European CM, the Community will remain valuable as a resource to support its use. Further to this, as the field of SMCS develops, the LINKS Community will allow for the discussion and adoption of new ideas and practices, thus building European disaster resilience at all levels.

The engagement that is foreseen as part of the Community, and the specific knowledge derived from it, on DRPV, DMP and DCT, which will be held within the Community, can be exploited by the stakeholders once the project has finished to continue improving disaster resilience, stimulating this bottom up approach.

5.2 How will the Community be Sustainable?

Successful stakeholder engagement can result in a number of important benefits such as ensuring the uptake of the LINKS outcomes, but, crucially, successful early engagement will build a

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[16] Initial discussions with WP leaders have indicated that these will be the two core targets for the first stages of research of the project.

committed, well-resourced Community, that will maintain the network and its functions as a place of information exchange and knowledge repository to be exploited, once the project is completed.

Therefore, it is relevant to engage stakeholders now as their involvement and activity in the Community is likely to enhance the sustainability of the LINKS research in the future. If stakeholders can see the benefits of their involvement at an early stage of the project, they will be more likely to continue their activity in the future. The involvement of stakeholders benefits the overall body of knowledge within LINKS as they are bringing crucial expertise. By engaging with LINKS the various stakeholders will be able to exchange knowledge with each other thereby making participation mutually beneficial. The earlier that this takes place, the more time the Community has to develop and demonstrate its value.

5.3 Tools for Developing the Community Sustainability

5.3.1 LINKS Community Center

The LCC is the web-platform for online sharing and integrating lessons learned and ongoing experiences and knowledge within the LINKS Community, as well as with broader EU and international networks. The LCC makes the LINKS research results accessible for the Community or the general public. Especially the LCC is a way to disseminate the LINKS Framework to establish a continuous dialogue and obtain feedback from a broader stakeholder community without on-site presence at the case sites. The development of the LCC is based on the needs of stakeholders, as well as on experiences with former community center developments in other projects (e.g., H2020-eNotice). Its role is more fully explored in the following section.

The LCC will be another important vehicle for engagement with the LINKS Community, both during the project, and, crucially, beyond. The relationships that will be built and maintained throughout the project, as well as the knowledge that is developed, best practices that are identified and innovations that are tested will all be a key part of the purpose of the LCC, facilitating exchanges on these topics and functioning as a repository of knowledge and a reference resource for all stakeholders.

It is currently foreseen that the LCC will exist online and will remain active, in a still to be defined form, once the project has been completed. After providing feedback and validation for the creation of the LINKS Framework, it is expected that the LCC will also transition and provide a forum for discussion on the implementation of the Framework, as well a means of exchanging best practices, experiences and advice regarding the use of SMCS in disaster management. The LCC will therefore be a key tool for ensuring the sustainability of the Community, acting as a knowledge base, advice Center and means for proliferating the use of the LINKS Framework and ensuring that the LINKS Community, and the value stored within, remain available in the future. As previously mentioned,

it is envisioned that the LCC, Framework and the LINKS Community may use the same environment, ultimately interacting within the so-called LINKS Hub.

5.3.2 LINKS Community Workshops and LINKS Advisory Committee

The LCWs are held in each of the selected case countries and are crucial for gathering and communicating information regarding the project's objectives and requirements, and for exchanging best practices among local stakeholders affected by and/or managing disasters. The LCWs will be an essential item for informing the assessments in the knowledge domains and for evaluating the LINKS Framework through the case studies. Furthermore, the LCWs aims to integrate diverse expertise, experiences and knowledge from several parts of Europe and the world through direct engagement with different communities, including LINKS associated partners and experts from broader research and practitioner networks. This will primarily be done through activities which are dedicated to establishing a sustainable network of experts which both guide and inform the LINKS project through the LAC.

The LAC consists of invited advisors from different relevant organizations (representing representatives from almost all stakeholder groups).

5.4 Community Engagement Roadmap

The targeted communications that will be designed based upon the stakeholder analysis will be the basis for the first phase of engagement with Community stakeholders. This phase is intended to build the Community, by motivating stakeholders to join and giving them a good understanding of the purpose of the Community, and how their participation will be beneficial to the project and for their own work, both during the project and beyond.

5.4.1 Launch Phase: Promoting the LINKS Community

Informing:

Phase 1 will be about creating an awareness among the targeted stakeholders.

When: The launch phase began at M5 (October 2020) and will run for 7 months until M12 (May 2020).

Who: During this phase targeted stakeholders will be reached.

What: activities to launch in this phase will be used:

- LINKS Twitter and LinkedIn Account (M3)
- Promotional materials (M12)
- LINKS Website (M3)
- Workshop Plan (M12)

- LINKS Newsletter (at M7 and then every six months)

5.4.2 Implementation Phase: Engagement in LINKS and Validating the LINKS research

Consulting:

The implementation is the core phase of the project. It is the time to receive feedback of the stakeholders.

When: The phase 2 will start at M12 (May 2020) and will run until M37 (June 2023)

Who: all the stakeholders developed in the previous sections, using the system of prioritisation.

What: the main activities in terms of the engagement within this phase will be the organization of several LINK Community Workshops, the creation of LINKS Community Center and Framework and the day to day communication activities regarding the outputs of the project (moderation of the social media channels, feeding of the website, creation of publication).

5.4.3 Sustainable Phase: Evaluating, Sustaining and Deploying the LINKS Framework

Empowering:

This the final phase of the project. When: the final phase will start at M38 (July 2023) and run until M42 (November 2023).

- Who: All the stakeholders described in the previous sections.
- What: the most important activity will be the organisation of the last set of workshops.

Table 5 shows a roadmap of activities for the building and strengthening of the Community. Several of these activities will also directly contribute to the sustainability of the Community once the project has finished, and these will be looked at here for their impact.

M8: Stakeholder Analysis Conducted: the stakeholder analysis will play an important role for the sustainability of the Community, as it will not only ensure that the Community is composed of members who are able to contribute and have the requisite knowledge and expertise, but it will help identify stakeholders that have an interest in ensuring the long-term success of the Community beyond the project. A key factor for the sustainability is the value provided by the Community in terms of knowledge and expertise, and the stakeholder analysis will provide this.

M12: Initial Group of Stakeholders Invited to Community: Building and maintaining the Community from the early stages of the project will support the LINKS research, and allow for greater opportunities for consulting and empowering members. This will promote the sustainability by investing members in the work, leading them to develop a long-term interest in the results, as well as ownership. These factors will keep the Community relevant once the project has finished, therefore meaning that the initial engagement will be positive, with clear goals for the stakeholders. These will be discussed in Workshops organised under WP8.

M24: LCC Online: As a key means of engagement with the Community, building a resource that contains the knowledge and expertise of the members will be a very tangible demonstration of the Community's value. Exploiting this to its full value, with knowledge exchanges, development of best practices and demonstrations of the Framework will give the Community a clear purpose, and the LCC will be an important means of achieving this. While its role beyond the project, and within the Hub, is not yet finalised, the LCC will play a key role in the transition from within project-lifecycle to post-project activities.

M38: Final Version of LINKS Framework is available: a key task for the Community will be input into the development of the Framework, and it is expected that once the final version is available, the ownership that the Community will have over its implementation will provide a focal point for the Community once the project is complete. Members of the Community will be able to share results, best practices and suggest further refinements to the Framework based on new, knowledge, experiences, trends and technologies, ensuring that the Framework remains a valuable tool beyond the lifecycle of the project.

M42: LINKS Final Conference: the LINKS final conference will be an important moment for promoting the project results, and demonstrating the value of the Community to new stakeholders, and ensuring that already participating members are aware of the Community's role in the future. It is expected that the Final Conference will introduce the final structure of the Community beyond the project, to public, beyond the existing Community members and their networks.

M(TBD): LINKS Hub Active: the LINKS Hub is presently being conceptualised to be a space (potentially available online and offline) that will link the Community, LCC and LINKS Framework together, facilitating exchanges and information sharing for the benefit of all. The Hub will keep the Community engaged and provide for an environment for the Framework and Community to exist beyond the project.

5.4.4 Risk Management

It is important to acknowledge potential risks that may occur in relation to the activities set out in this Strategy. Table 9 identifies several potential risks that could adversely impact the first phase of building the Community and holding Workshops, and sets out mitigation measures that can lessen their impact. These will be revisited in D8.2 to analyse their relevance, any news risks that maybe foreseen for the second half of the project and for updated mitigation measures, if required.

Table 8 Risk in Community Activities and Mitigation Measures

Risk in Community Activities for M4-M21	Mitigation Measures

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Insufficient number of contacts in database	Leverage partners for more contacts and expand outreach and research of relevant contacts to sub-national level. Utilise existing networks and databases to signal boost.
Insufficient information available for stakeholder analysis	Conduct further research into activities, leverage partners knowledge to help with analysis via workshops and greater information sharing.
Community is not of sufficient size	Increase promotion activities, refine messaging and leverage greater DEC. Ensure opportunities for Community to contribute are sufficient.
LCW cannot be held physically	Plan for virtual meetings utilised and ensure format of workshop is adapted
Difficulty gathering feedback from LCW's	Revisit feedback questionnaire and hold discussions with partners to understand needs better. Refine approach to feedback.
Low levels of collaboration between Community members	Increase opportunities for collaboration through greater number of events, and use stakeholder analysis to identify synergies between Members.
Not enough LCW are organised	Consider adopting blended events, or highly localised. Arrange discussions with partners to understand difficulties and refine format to allow for easier organisation.
Communication Difficulties with Local Stakeholders due to Language Barrier	Liaise with local partners to translate relevant material in necessary language and work with them to ensure that language issues are resolved.
Targets at risk of not being met.	A threshold approach will be applied to judge whether targets not being met are a cause for concern. If the actual numbers fall below the threshold amount, corrective measures or justifications will be provide in D8.2.

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6. INNOVATION MANAGEMENT

Project innovations will be planned and managed via the Innovation Manager and Project Coordinator. They will assess the original innovation gap of the project research annually, and, through the table below, monitor the progress of expected innovative elements of the project. As part of the Innovation Management, a mapping will be undertaken to provide a picture of the state of the art, so that innovations produced by the project can be more easily exploited. This will be included in the updated version of this Strategy, to be delivered in M21.

Project innovations are expected to fall into three categories, as identified in the DoW: Scientific, Technical Products and Services and Processes, Procedures and Policies.

Scientific Innovations: it is expected that the findings across the case assessments and evaluation of the LINKS Framework will lead to new and innovative scientific contributions from the academic partners in the consortium. These findings could involve new methodological and conceptual approaches for studying the effects of SMCS on disaster resilience, and ground-breaking understandings on the impact of diversity among the knowledge domains.

Technical Products and Services: the focus on DCT and SMCS will produce innovation via the LINKS Framework, in the form of tools and guidelines that will be assessed and through the exchange of knowledge regarding new and evolving SMCS technology products and services.

Processes, Procedures and Policies: the knowledge gained through the various means of stakeholder exchange, such as the LCC and the LCW, will inform the innovation potential of the guidelines in the LINKS Framework. This will help build awareness of DRPV and new DMP processes for interacting with SMCS products. Practitioners will further benefit directly from learning, adopting and progressing tested services and procedures for DMP in light on new DCT developments, and under diverse conditions. Community innovation will further stem from the impact evaluations of past national and EU science-based policies regarding DCT/SMCS in DMP.

Table 9 Innovation Management Table

Innovation Element	Innovation Type (Scientific, TPAS, PPP)	TRL	Time to Exploit	Innovation Details	Dependencies

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7. CONCLUSION

Being the first part of a tryptic of deliverables, D8.1 builds a comprehensive and realistic LINKS Community Strategy, which is of first importance to foster the engagement of key stakeholder groups, maximising the project's impact and ensuring the uptake of its outcomes.

The document provides a detailed explanation of how to engage the different targeted stakeholders as well as the key messages to be delivered to the different stakeholders' groups, messages which will be adaptable throughout the lifetime of the project depending on the status of the project implementation. The organisation of the LCW is also well detailed taking into consideration the complexity of the COVID-19[17] situation as well as the importance of these workshops as part of the Community Strategy. The sustainability of the LINKS Community Strategy being a crucial point for the LINKS project, is also highlighted through a roadmap.

Finally, the Innovation Management approach of the Project will be monitored continuously and presented in the final Strategy in M39.

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[17] At the time of the redaction of this report, the consortium does not have any vision regarding the crisis and the travels/meetings policies which will be applied in the coming months.

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9. ANNEXES

9.1 Annex I: Glossary of Terms

To ensure a common understanding within the LINKS project and beyond, a common glossary is currently being developed and it is available for LINKS partners. Once finalised, it will be shared on the website and will be updated during the entire project life cycle.

The aim of this Annex is to provide an overview of key terms used in the deliverable. It will be included in future LINKS deliverables, when relevant.

Best Practices: This encompasses the preferred actions in a specific type of situation to efficiently and effectively achieve a certain objective. Best Practices may be formalized in internal policy documents such as handbooks and standard operation procedures and could be based on one or several lessons learned approved by decision-makers.

Source: DRIVER+. Link: https://www.driver-project.eu/driver-project/terminology/ [11.08.2020].

Crisis management: Holistic management process that identifies potential impacts that threaten an organization and provides a framework for building resilience, with the capability for an effective response that safeguards the interests of the organization's key interested parties, reputation, brand and value creating activities, as well as effectively restoring operational capabilities.

Source: ISO 22300:2018(en), Security and resilience — Vocabulary as cited in the DRIVER+. Link: https://www.driver-project.eu/driver-project/terminology/ [11.08.2020].

Crowdsourcing: The activity of getting information or help for a project or a task from a large number of people, typically using the internet.

Source: based on the definition provided by the Oxford English Dictionary [11.08.2020].

Disaster: A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources.

Source: International Federation of Red Cross and Red Crescent Societies (IFRC). Link: https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster/. [12.08.2020].

Disaster Community Technology (DCT): Method/instrument for using software and scientific knowledge for interaction with groups of people who have similar interests or who want to achieve something together in a sudden accident or natural catastrophe that causes great damage or loss of life.

Source: Based on definitions found in the online Oxford English Dictionary/Cambridge Dictionary. [11.08.2020].

Disaster Management Cycle: Set of phases related to disasters and their management.

Source: United Nations Office for Disaster Risk Reduction. Online Glossary. Link: https://www.undrr.org/terminology. *[11.08.2020].*

Disaster Management Processes (DMP): A collective term encompassing a systematic series of actions or steps taken to reduce and manage disaster risk. Disaster management processes are often associated directly with the phases of the Disaster Management Cycle. In the context of LINKS, we specifically refer to DMP as the policy frameworks, tools and guidelines developed to govern disasters across all phases of the Disaster Management Cycle.

Source: Based on Figure 2 in Weichselgartner, J. (2001). Disaster Mitigation: The Concept of Vulnerability Revisited. Disaster Prevention and Management, vol. 10, pp. 85-95.

Disaster Risk Management: Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

Source: United Nations Office for Disaster Risk Reduction. Online Glossary. Link: https://www.undrr.org/terminology. *[11.08.2020]*

Disaster Resilience: The capacity of a system to cope, adapt and transform in the face of disasters. See resilience.

Source: Initial definition from LINKS Proposal

Disaster Risk: The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Acceptable risk, or tolerable risk, is therefore an important subterm; the extent to which a disaster risk is deemed acceptable or tolerable depends on existing social, economic, political, cultural, technical and environmental conditions. In engineering terms, acceptable risk is also used to assess and define the structural and non-structural measures that are needed in order to reduce possible harm to people, property, services and systems to a chosen tolerated level, according to codes or "accepted practice" which are based on known probabilities of hazards and other factors.

Residual risk is the disaster risk that remains even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained. The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response and recovery, together with socioeconomic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach.

Source: United Nations Office for Disaster Risk Reduction. Online Glossary. Link: https://www.undrr.org/terminology. *[11.08.2020].*

Disaster Risk Reduction: Disaster risk management is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

Source: United Nations Office for Disaster Risk Reduction. Online Glossary. Link: https://www.undrr.org/terminology. *[11.08.2020]*

Diversity: Diversity is characterised by two aspects. One the one hand diversity in LINKS is understood as an individual aspect, characterized by personal markers, diversity awareness and different cultural belonging. On the other hand, diversity is a range of capabilities, information and data resources, skills and knowledge (scientific and experiential) to which systems can draw upon.

Source: Initial definition from LINKS Proposal

Diversity by Design: The methods and tools needed to endow stakeholders with the capability to reason about the diversity aspects of their actions, and the methods, tools and formalisms to guarantee that diversity is considered in all the phases of the design, implementation and use of the LINKS Framework and LCC.

Source: Initial definition from LINKS Proposal.

LINKS Community: A sustainable stakeholder community consisting of multidisciplinary stakeholders from several countries, professions and schools of thought.

Source: Initial definition from LINKS Proposal

LINKS Community Center (LCC): A flexible and user-friendly web-based platform for online sharing and integrating lessons learned and ongoing experiences and knowledge within the LINKS Community, as well as with broader EU and international networks.

Source: Initial definition from LINKS Proposal

LINKS Community Workshops (LCWs): Events where LINKS Community members will interact with the project in real world settings, and exchange knowledge and ideas.

Source: Initial definition from LINKS Proposal

LINKS Framework: A set of best-practices consisting of methods, tools and guidelines for enhancing the governance of diversity among the understandings and applications of SMCS in disasters for relevant stakeholders.

Methods in LINKS refer to approaches that will enable researchers and practitioners to assess the effects of SMCS for disaster resilience under diverse conditions.

Tools are practical instruments supporting first-responders, public authorities and citizens with the implementation of SMCS in disaster and security contexts.

Guidelines are recommendations for improving national and regional governance strategies on SMCS as well as introductions and explanations of how to apply the methods and tools under diverse conditions.

Source: Initial definition from LINKS Proposal

The LINKS Hub (currently being conceptualised): The LCC, the LINKS Community and the Framework will be encapsulated in the LINKS "Hub". In doing so, both access to project outputs and the assessment of the Framework will be facilitated.

Source: LINKS project.

LINKS Knowledge Bases: The outputs from the assessments of the three knowledge domains.

Source: Initial definition from LINKS Proposal

LINKS Knowledge Domains: The three crucial domains of analysis for studying European disaster resilience and SMCS. These include:

Disaster Risk Perception and Vulnerability (DRPV), for assessing changes in the citizens' perception of disaster risks induced by SMCS, as well as assessing the changes in the vulnerability of practitioners and citizens.

Disaster Management Processes (DMP) for analysis of how SMCS changes the procedures and processes within the crisis and disaster management.

Disaster Community Technologies (DCT), for assessing SMCS related technologies used by practitioners (and citizens) in disasters.

Source: Initial definition from LINKS Proposal

Resilience: The ability of both individuals and systems to recover from disturbance and to develop and adopt alternative strategies in response to changing conditions.

Source: Initial definition from LINKS Proposal

Risk awareness: See Risk Perception

Risk Perception: Risk perception is the way individuals and groups appropriate, subjectivise and perceive risks that might or might not be calculated in an objective manner during risk assessments. The importance of studying risk perception more seriously is obvious: risk perception directly influences people's ability and level of preparedness. Risk perception covers what is also referred to as "risk awareness".

Source: Initial definition from LINKS Proposal

Social Media: Forms of media that allow people to communicate and share information using the internet or mobile phones.

Source: Based on the definition provided by the Cambridge Dictionary. Online. [11.08.2020].

Social media is defined as a group of Internet-based applications that allow the creation and exchange of user generated content.

Source: Initial definition from LINKS Proposal

Stakeholder Engagement: Stakeholder engagement is the practice of interacting with, and influencing project stakeholders to the overall benefit of the project and its advocates…Their requirements, expectations, perceptions, personal agendas and concerns will influence the project, shape what success looks like, and impact the outcomes that can be achieved.

Source: Association of Project Management 2017

Sustainable Advanced Learning: A maintainable and evolving collection of knowledge and best practices produced for and by relevant stakeholders.

Sustainable advanced learning entails a cognitive dimension (the capability to gain in-depth knowledge of crises and crisis response) and a social dimension (the ability to implement that knowledge into new practices). In LINKS, sustainable advanced learning is the precondition for resilience.

Source: Initial definition from LINKS Proposal

9.2 Annex II: Virtual Arrangements for LCW

While all reasonable efforts should be made to hold the LCW physically, it should be acknowledged that the context of a global pandemic could prevent this from happening. Should this be the case, the following guidelines can help facilitate the organisation of virtual workshops and mitigate the difficulties associated with virtual meetings. Partners may also wish to schedule follow up sessions or discussions after the main Workshop, which could perhaps be held online.

1. Organise online meetings via a tool that allows for breakout sessions

Most teleconferencing software now have the ability to separate participants into smaller groups ('breakouts') for discussions and evaluation purposes. Organisers should familiarise themselves with the mechanisms of Microsoft Teams (or other conferencing tool such as GoToMeeting or Zoom) so that they are comfortable managing this during the meeting.

2. Understand the limitations of the format and plan accordingly

Virtual meetings are clearly very different from in-person and the limitations can be quite severe in comparison. Demonstrations, discussions and interaction are not as easy to facilitate and gathering helpful feedback can be more challenging. Anticipating this and preparing accordingly - through the points suggested below - and others, such as adapting the design of the Workshop to depend less on visual demonstrations and holding test workshops to ensure that they run smoothly will help ensure that the LCW's remain a valuable tool for the project.

3. Prepare participants for meetings by sharing materials (and explanation on their use) in advance

Organisers can share materials - diagrams, worksheets, feedback sheets, explanations - with participants in advance, along with an explanation for their use, so that they are able to refer to them during the workshop and can familiarise themselves with the topics beforehand, enabling discussions to proceed to more advanced levels more quickly.

4. Have extra organisers to help facilitate breakout sessions

If possible, having an organiser participate in each breakout room can ensure that discussions proceed well and that groups are kept on track, as they can clarify any misunderstandings and steer discussions towards profitable areas. This will have the added benefit of allowing the organisers to be exposed to the discussions that take place and inform the eventual conclusions, which can also be a valuable resource for project research (this could also be accessed by recording the breakout sessions, but would be more time-consuming to review).

5. Accept that discussions and feedback may not be as comprehensive or incisive and adapt accordingly

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Given the virtual context, discussions become less natural and organic and have to be somewhat manufactured. This may mean that it researchers will need to adapt their expectations for the workshops - rather than being able to fully discuss a process or topic and gather input on its entirety, it might be the case that they will need to compartmentalise the workshops. The one advantage of virtual meetings is that it is easier to plan and hold them, compared to in person meetings. It could therefore be the case that a topic that would be covered in one in-person workshop is covered in multiple, distinct virtual workshops, allowing the organisers to implement feedback from one workshop and adapt the following ones.

9.3 Annex III: Examples of Relevant Stakeholders

Table 10 Examples of Relevant Stakeholders

	Local	Regional	National	European
Practitioners	Service d'Incendie et d'Aide Médicale Urgente Bruxelles Region (Brussels Fire Service)	Red Cross Regional Disaster Response Teams (RDRT)	Netherlands National Crisis Center Belgian Crisis Center (BCE)	European Emergency Number Association (EENA)
Industry	HKV (Netherlands)	XVR Simulation	SAFECLUSTER	European Cyber Security Organisation (ECSO)
Policy/Decision Makers	Hampshire County Council's Emergency Planning Unit (UK)	London Resilience Group	Netherlands Ministry of Internal Affairs	European Commission Directorate Generals (DGs ECHO, HOME, REA)
Scientific Community	Vrije Universiteit Brussel (VUB), Katholieke Universiteit Leuven (KUL), Copenhagen Center for Disaster Research (COPE)[18]	Université Paris I Panthéon Sorbonne	L'Institut national des hautes études de la sécurité et de la justice (INHESJ)	Crisis Management Innovation Network Europe (CMINE) CARISMA, ENCIRCLE, IN-PREP, BE AWARE projects, Radicalisation Awareness Network (RAN)

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[18] These entities could also be included under Regional, National and EU depending on the context.

Civil Society	Action Médias Jeunes asbl	Association européenne des Radios Amateurs au service de la Sécurité Ci vile (ADRASEC)	Fédération Nationale des radioamateurs au service de la sécurité civile (FNRASEC)	Pour la solidarité Association (PLS)

9.4 Annex IV: LINKS Community Workshop Timeline M5-21

Table 11 LINKS Community Workshop Timeline M5-M21

		M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M24	M28
WP2																			
T2.1		2.1																	
T2.2		2.2																	
T2.3								2.3											
T2.4																			2.4
T2.5																			

		M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M24	M28
WP3																			
T3.1		3.1																	
T3.2								3.2											
T3.3																			3.3
T3.4																			
WP4																			
T4.1		4.1																	
T4.2								4.2											

		M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M24	M28
T4.3																			4.3
T4.4																			
WP5																			
T5.1					5.1														
T5.2														5.3					
T5.3																			
T5.4																			
WP6																			

		M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M24	M28
T6.1					6.1									6.2					
T6.2																		6.4	
T6.3																			
T6.4																			

9.5 Annex V: LINKS Community Workshop Feedback Form

This form gives an example of how feedback can be gathered during the Workshop. These questions can be adapted to suit the specific context and content of each workshop and partners are encouraged to provide examples, diagrams and demonstrations where possible. These questions can be eased to stimulate discussion, or participants can be asked to complete the form during the final session of the workshop, or after each discussion or case work session.

LINKS Community Workshop Feedback Form

Before leaving, we would kindly ask you to answer the following questions, to help us improve [INSERT TOPIC OF WORKSHOP]:

1.Which stakeholder group do you belong to (Practitioner, Industry, Researcher, Civilian, Decision Maker)?

2.Was this session relevant to you? Please explain why/why not.

3.Based on your expectations in advance of the session, were the topics and research questions raised easily understandable?

4.Did you understand what we mean by [INSERT RELEVANT CONCEPT/RESEARCH TOPIC]? If some sections required more information, please list them.

5.During this session, were you able to identify challenges related to [INSERT RELEVANT CONCEPT/RESEARCH TOPIC] in your work? Please explain why/why not.

6.Do you think the research produced by LINKS could help you identify and solve such challenges in the future? Please explain why/why not.

7.Would you use the [INSERT RESEARCH OUTPUT] methods before in your own work or research? What has informed this decision?

8.Do you have other comments or suggestions?

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9.6 Annex VI: LINKS Community Contact Database

9.6.1 Individuals

Table 12 Example of LINKS Community Contact Database for Individuals

Contact Name	Email	Organisation (if applicable)	Contact Owner	Relevant Research Area	Contact Level	Stakeholder Type	Communication Language	Location	Contacted By (Internal use)	Included in Community
Name of Contact	Email Address	Name of Organisation	Who suggested this person?	Which WP or Research topic is related to this individual? eg. WP3, 4, 5, DMP for fire related crises	Local, Regional, National, European	Researcher, Practitioner, Citizen, Other	English or French	Where are they based?	Have they been contacted by LINKS? When and by whom?	Have they been added to the Community

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9.6.2 Entities

Table 13 Example of LINKS Community Contact Database for Entities

Name	Type	Relevance (type of stakeholders)	Related LINKS Partners (Contact Ownership)	Relevant Research / Work Area	Level of Entity	Location of Interest
Name of entity	(platform, network, cluster, research group, conference etc.)	Are they predominantly researchers/practitioners, etc.	Which LINKS partners may already be involved or participants in this entity?	Which WP or Research topic is related to this entity? eg. WP3, DMP for fire related crises	Local, Regional, National, European	Are they only relevant to a specific locale

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9.7 Annex VII: LINKS Community Stakeholder Analysis Form

Table 14 LINKS Community Stakeholders Analysis Form

Name of Stakeholder	Name of entity, organisation, or general classification (Regional practitioners)
Type	Practitioners, Industry, Policy and Decision Makers, Scientific Community, Citizens
Level	Local, Regional, National, European
How are they relevant to the Community and LINKS research?	What are their expectations of the project? What are LINKS expectations of them? How much influence will they have over the success of the Community?
What challenges do they currently face that LINKS can mitigate?	What work are they engaged in and what are the current difficulties in that area? Can LINKS solve any of them or at least make them less difficult?
Will the LINKS project impact their work/research in other ways? How?	How else would the successful completion of the project benefit them?
What channels would be most effective for communication?	Do they participate in networks? Are they part of academic discourses? What language should they be communicated to in?