# RiskPACC

## INTEGRATING RISK PERCEPTION AND ACTION TO ENHANCE CIVIL PROTECTION-CITIZEN INTERACTION

**DRAFT TRAINING MATERIAL**

**Deliverable D4.5**

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# ABOUT RISKPACC

Increasingly complex and interconnected risks globally highlight the need to enhance individual and collective disaster resilience. While there are initiatives to encourage citizen participation in creating a resilient society, these are typically fragmented, do not reach the most vulnerable members of the communities, and can result in unclear responsibilities for building disaster resilience.

New technologies can also support preparedness and response to disasters, however, there is limited understanding on how to implement them effectively. Awareness of risks and levels of preparedness across Europe remain low, with gaps between the risk perceptions and actions of citizens and between the risk perceptions of citizens and Civil Protection Authorities (CPAs).
The RiskPACC project seeks to further understand and close this Risk Perception Action Gap (RPAG). Through its dedicated co-creation approach, RiskPACC will facilitate interaction between citizens and CPAs to jointly identify their needs and develop potential procedural and technical solutions to build enhanced disaster resilience. RiskPACC will provide an understanding of disaster resilience from the perspective of citizens and CPAs, identifying resilience building initiatives and good practices led by both citizens (bottom-up) and CPAs (top-down). Based on this understanding, RiskPACC will facilitate collaboration between citizens, CPAs, Civil Society Organisations, researchers and developers through its seven (7) case studies, to jointly design and prototype novel solutions.

The “RiskPack” toolbox/package of solutions will include a framework and methodology to understand and close the RPAG; a repository of international best practice; and tooled solutions based on new forms of digital and community-centred data and associated training guidance. RiskPACC consortium comprised of CPAs, NGOs, associated organisations, researchers and technical experts will facilitate knowledge sharing and peer-learning to close the RPAG and build disaster resilience.

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## *Executive Summary*

Deliverable 4.5. “Draft Training Material” aims to create a simplified training material to guide the user on the Repository and the countermodels of the Framework. The main objective of this document is to devise user-friendly training materials to assist the uptake and sustainability of RiskPACC solutions and approaches. The training material in the current deliverable derives from the ideas and tools developed from the principles and guidelines of the collaborative RiskPACC framework based on its four modules (Understanding, Sharing, Relating, Building).

The current document summarizes the key points that are identified in the repository and the Collaborative Framework, as well as the technical solutions that have been created under the needs of the RiskPACC umbrella. Furthermore, it gives the basic characteristics of training material for risk perception and risk awareness for different target groups (citizens, CPAs, vulnerable groups, etc.).

Training materials created and tested within the project, are inextricably linked with the principles and the audience identified through the exploratory concept of the framework. A list of training videos and factsheets has been developed guiding the user on how to use the Knowledgebase and RiskPACC’s Collaborative Framework. Furthermore they provide training guidelines for the scope and the implementation of the conceptual tools used and developed under within the principles of the four modules of the Framework, such as the participatory mapping, risk communication activity, nudging and co-creation methodology. In addition, a training manual and videos for the usefulness and use of the VGI tools such as OpenStreetMap(OSM) have been created. All the training materials produced will be integrated in the RiskPACC platform.

The training material will be divided in two cycles. The second and final version of this deliverable (D4.6) that is going to be submitted by the end of the project, will include the lessons learned during the testing processes in cities and regions from the Efus network. It will further be enriched and aligned with the needs and development of the other Tasks of the project. Furthermore, one of the main additions that will be included in the second and final version of the deliverable will be a guidebook that is easy-to-read by the general public, which will contain training of all the key points of both Knowledgebase Repository and collaborative Framework, the conceptual tools and every new tool or method will be created and developed in the final stage of the project.

*Glossary and Acronyms*

| Term | Definition/Description |
|---|---|
| **AR** | Augmented Reality |
| **CAFO** | Ceska Asociace Hasicskych Dustojniku Sdruzeni (Czech Association of Fire Officers) |
| **CDC** | Centers for Disease Control and Prevention |
| **CPA** | Civil Protection Authority |
| **CPD** | Comune di Padova |
| **CPR** | Cardiopulmonary Resuscitation |
| **D1.1** | Evaluation and SOTA Summary Report (CPAs) |
| **D1.2** | CPA consultation report and repository of best practices |
| **D3.6** | Report lab phase II |
| **D4.2** | Prototype Knowledgebase Repository |
| **D4.3** | Draft RiskPACC Collaborative Framework |
| **D4.4** | RiskPACC Collaborative Framework |
| **D4.6** | Training material |
| **D5.1** | Completion of crowd-sourcing solution development to the different case study requirements |
| **D5.2** | Completion of sentiment analysis toolbox to measure the RPAG |
| **D5.3** | Completion of adaptation of VGI mapping tool to close the RPAG |
| **D5.4** | Completion of training material |
| **DoA** | Description of the Action |
| **DRM** | Disaster Risk Management |
| **Efus** | The European Forum for Urban Security (Efus) |
| **EPPO** | Earthquake Planning and Protection Organization |
| **FEMA** | Federal Emergency Management Agency |
| **HOTM** | Humanitarian OpenStreetMap Tasking Manager |
| **IBZ** | Service Public Federal Interieur |
| **ISAR** | I.S.A.R. Germany Stiftung gGmbH |
| **MDA** | Magen David Adom in Israel |
| **MoE** | Municipality of Eilat |
| **MRP** | Municipality Rafinas-Pikermiou |
| **RPAG** | Risk Perception Action Gap |
| **OSM** | OpenStreetMap |
| **T4.2** | Repository of good practices – creating the Knowledgebase |
| **T4.3** | RiskPACC Collaborative Framework |
| **T4.4** | Development of training material |
| **T6.2** | Test Planning |
| **TM** | Tasking Manager |
| **VAWG** | violence against women and girls |
| **VGI** | Volunteered geographic information |
| **WP3** | Co-Creation lab & Stakeholder-Integration |
| **WP4** | Framework Development |

| | |
|---|---|
| **WP6** | Impact generation through peer-learning, field testing and knowledge capitalisation |
| **WP8** | Dissemination, Exploitation and Communication |

TABLE 1: GLOSSARY AND ACRONYMS

# 1 INTRODUCTION

## 1.1 Overview

The DoA (Description of the Action) describes this deliverable as the Draft Training Material adapted to the needs that have been identified and developed in T4.2 "Prototype Knowledgebase Repository" and T4.3. "Draft RiskPACC Collaborative Framework". It is the first deliverable of T4.4. "Development of training material". This report is a public document easy to be read by the general public giving the key insights of the training material developed within the RiskPACC project that will be integrated in the platform.

The main objective of this document is to devise user-friendly training materials to assist the uptake and sustainability of RiskPACC solutions and approaches, based on the four modules of the collaborative RiskPACC framework as follows:

- Understanding of the risk and community.
- Sharing of knowledge and risk perceptions between different participant types.
- Relating - building relationships of trust between citizens and civil protection groups.
- Building of techniques and tools for communication.

Activities, conceptual and technical tools that have been developed within the project, are tailored to the needs of the stakeholders and the target audiences that are under the research scope of the project, in order to bridge the Risk Perception Action Gap (RPAG) between citizens and Civil Protection Authorities (CPAs). To ensure that these will be optimally assimilated from the users, they are acompanied by properly configured training material assesing to the engagement of the RiskPACC principles and goals with the public.

The training material in the current deliverable and at this level of maturity, consists of a series of manuals and guidebooks both in video and printed formats, integrated in the RiskPACC platform, for the following:

- Guideline to the main concept of the Knowledgebase Repository of good practices, its methodology and its use.
- Guideline to a simplified perspective of the principles and key points of the Collaborative RiskPACC Framework. It further explains how the technical and non-technical tools have been developed aligned with the modules of the Framework.
- Training guidelines for the scope and implementation of the conceptual tools of participatory mapping, risk communication activity, nudging and co-creation methodology.
- Training in the VGI tools, and the OpenStreetMap (OSM) tool.

The conceptual tools created within RiskPACC, aim to facilitate dialogue, as risk communication has been recognized as the most significant element to achieve a two-

way communication. This communication needs to be tailored to the specific needs of the target group of interest.

The training materials will not be stated as presented in this stage of the deliverable but will be improved and will reach their maturity taking the lessons learned from the testing processes that will take place in T6.2. They will be further enriched and aligned with the needs and development of the other Tasks of the project. A series on new conceptual tools for the next phase will be examined. Furthermore, one of the main additions that will be part of the second and final deliverable, will be a guidebook easy-to-read by the general public, containing training of all the key points of both Knowledgebase Repository and collaborative Framework, the conceptual tools and every new tool or method will be created and developed in the final phase. Summarizing, the final version of the training material will be finalized in the project, taking into acount the following:

- The lessons learned from the testing process in cities of The European Forum for Urban Security (Efus) network that will take place in T6.2.
- The feedback and the finalization of the Collaborative Framework.
- The needs that will come for the optimization of the visualization and technical funtionality of the Repository of good practices within the RiskPACC platform.

## 1.2 Structure of the deliverable

This document includes the following chapters:

Chapter 1: Introduction. This chapter includes the base description and the scope of this deliverable, as well as the upper scope of the T4.4.

Chapter 2: This chapter gives a brief description of the key points and insights of the Knowledgebase Repository (D4.2) and Collaborative Framework (D4.3), that are going to be integrated in the guidebook of the final version of this deliverable. It also presents the main lessons learned of D3.6, that provides fruitful results and feedback over the needs of training material address to different target group.

Chapter 3: It provides the main insights of the characteristics of the different target audiences that define the process of the development of these training materials.

Chapter 4: This chapter provides main methodology of the elements, such as the objectives, that have been taken into account for the development the training material.

Chapter 5: This chapter contains the description analysis of the content and the main scope of the training materials that have been developed within this Task. The produced videos, factsheets and manuals have been integrated into the platform, able to be accessed by users.

Chapter 6: This final main chapter contains the main conclusions of the overall document, as well as some suggestions for further development of the training material.

Chapter 7: References.

Chapter 8: Annexes including the factsheets and manuals of the training materials that will be integrated into the platform.

## 1.3 Relation to other Work Packages

The training material as part of the WP4, is mostly built upon under the fundationof the Knowlegdebase of Repository and the Collaborative Framework. Even if Repository as a report document has been completed, there is still need for the integration of guidance into the system so that users, whether citizens, volunteers, or CPAs, can easily navigate. The draft version of the Collaborative Framework has been recently completed, following the completion of the second and final version timely alligned with the final version of the training material. T4.4 will train users to the key points of the Framework and the conceptual tools that are created or the additional that may be created in the future.

As D4.5 takes feedback from the exercises tested in the co-creation workshops, it is strongly connected with the results conlucted from WP3.

The purpose of the training material is to continue developing and evolving, with the aim of creating a satisfactory guide that can be tested in the testing processes in T6.2, where observer cities will also participate. T6.2. will be implemented within the 3rd awareness workshop of WP8.

The final results of the project and the lessons learned from the trial procedures will lead to the complete development of the training material D4.6., as well as the final version of the Framework D4.4.

# 2 THE PROCESS OF IDENTIFYING KEY POINTS WITHIN THE RISKPACC FOR THE TRAINING DEVELOPMENT

This chapter focuses on the elements and key points that must be taken into account for the creation of the training material that will guide the user into the Repository and the Framework.

As mentioned in D4.3, there is an extensive variety of training materials in the literature. Certainly, especially with climate change and the increasing disasters occuring in the recent years, there is a need for continuous update and dissemination of the training on risk awareness and preparedness to the public, especially in order to achieve a two-way communication between citizens and CPAs. RiskPACC's activities and technologies have been developed under that scope, with the principles having been set up through the development of the collaborative Framework, in order to bridge the Risk Perception Action Gap (RPAG).

In adittion, the co-creation workshops of WP3 have assessed to the identifycation of success indicators rellated to the development of the collaborative Framework, while significant results have been emerged for the requirements of the training material. Each of the workshops highlighted important and interesting topics related to communication, what seems to work and what doesn't, underlined the importance of citizens' local knowledge and personal experiences for identifying and assessing risks in the local area, their risk perception but also their perception about the wider circle of risks found in an interoperability relationship. They also highlighted the importance of risk awareness, what actions one should and should not do, the need of a fully updated training material tailored to different target groups, and in what ways it should be addressed to the public. It appeared that citizens deal with risks more emotionally, while most knowledge about them comes mainly from personal experiences. These emotion-led factors are actually one of the more significant determinants of public perceptions of risk communications.

## 2.1 The key points of the Repository of good practices

The Repository of good practices, developed under the scope of T4.2, is meant to be a collection of tools, both technical and non – technical (such as conceptual), and methods that could be used by CPAs and/ or citizens, that potentially are able to close one or more of the gaps that have been identified within the RiskPACC. The repository provides information about usefulness of these tools and methods, and their field of application.

The creation of the knowledgebase repository has been done with due reference to the Framework Modules to provide coherence across the project. D4.2 elaborates what exactly is meant by a 'good practice' and how the term will be used in the project as a whole. This knowledgebase uses a set of assessment criteria as follows:

| Category of assessment criteria | Sub-category |
|---|---|
| Technical criteria | Accessibility |
| | Usability |
| Socio-Ethical Criteria | Privacy |
| | Non-discrimination |
| Governance criteria | Governance structure – vertical |
| | Governance structure – horizontal |
| | Governance and the governed |
| Communication criteria | Multi-directionality |
| | Efficiency |
| | Uniformity |
| Operational criteria | Community Engagement |
| | Transparency |
| | Applicability |

TABLE 2: RISKPACC REPOSITORY ASSESSMENT CRITERIA

The repository is integrated in digital form in the Hermes tool, with each practice accompanied by a detailed description of the criteria as described above. In particular, the analysis of all practices described in D4.2 has been carried out and uploaded to the RiskPACC platform.

Organising the Repository and creating an assessment methodology based on the four modules of the Framework, the different hazard types or the phase of the disaster risk management cycle, will facilitate users in navigating more easily. Users will then be able to explore evaluation results of different practices, in order to identify a good practice that is most suitable to a specific case. The repository also allows to include "user experience", i.e users can explore as well as add their own experiences with a specific practice.

The Repository of good practices contains the good practices that have been identified within the project, more specifically from D1.2, D2.2 and the technical tools that have been developed within RiskPACC and are described in D5.1, D5.2 and D5.3. It gives additional the space for the CPAs to add new practices, as well as citizens (especially those connected already to the Case Study partners and those connected to the Efus cities in WP6) to propose new possible practices to the organizers of the repository, who will then provide a qualitative assessment for these newly submitted practices and add them.

The structure of the platform itself has not reached its mature development, so improvement procedures would be beneficial to be completed in the future.

## 2.2 The key points of the collaborative Framework

Collaborative Framework started being developed from almost the beginning of the project until reaches its mature today's form. Some of the criteria that the framework should fulfil is to be user friendly and acceptable to end users and not just an abstract model or conceptual framework.

In D4.3, a thorough analysis has been done digging into depth to the main content of the collaborative Framework and its 4 key modules (Understanding, Sharing, Relating and Building). As one of the main goals of the consortium, D4.3 presents a more simplifying language and description of the collaborative Framework, to be of value in a user-friendly form. The following table presents the key elements of the 4 modules, giving the readers and furthermore the interested users, a more simplified approach of the aim and content of each module. The extensive development of these is analyzed in chapter 5 of D4.3, where they are also accompanied by lists of different useful resources.

| | TARGET | SUBCOMPONENTS | KEY ELEMENTS FOR CONSIDERATION |
|---|---|---|---|
| **UNDERSTANDING** | **RISK INFORMATION CONTEXT**<br>Focuses on the hazards in a given location<br><br>The three subcomponents of this domain are:<br>➢ The presence/ absence/ frequency of hazard events<br>➢ The availability of risk reduction policy, legislation and governance structures and processes<br>➢ The environment in which this all takes place | **HAZARD EVENTS**<br>• Experience/ no experience of hazard events affect risk perception (likelihood, susceptibility, willingness to act)<br><br>**POLICY, LEGISLATION & GOVERNANCE**<br>• Providing frameworks of expectations, possibilities and limitations<br><br>**ENVIRONMENT**<br>• The physical/ biological contexts shape limitations; Presence of physical mitigation influences risk attitudes<br>• Presence of physical mitigation influences risk attitudes | • The presence of hazard events is linked with the experience around them and furthermore affects risk perception.<br>• Existing of risk reduction policies, legislation and governance structures and processes can act as the basis for organized action to plan for, mitigate, reduce and respond to risk.<br>• Awareness of the relevant policies, laws and forms of risk management in the location of interest can lead to the improvement of the Understanding of the risk context.<br>• Understand of what actions can the risk and emergency managers take and which are the rights and responsibilities of citizens, can lead to the improvement of the Understanding of the risk context.<br>• Actions taken depens upon the resource availability in the given location and the political will to support professional and community-based activities and duties. Understanding the policy and legislation context will help understanding of why certain actions may or may not be possible.<br>• The locational environment is hugely influential to which hazards occur and can determine some of the outcomes of any hazard event.<br>• Geographic location is a vital factor in understanding how any population anticipates, prepares for, responds to and recovers from hazard events. |

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| | | | • The presence of structural defences can influence people's perception of risk (that a structure can remove a risk e.g. flood structures can eliminate the flood risk of an area). |

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| | **SOCIAL – POLITICAL (PEOPLE) CONTEXT**<br><br>➢ Focuses on the diversity of people at risk in the location and the importance of understanding the opportunities and challenges that such diversity brings | **SOCIAL-DEMOGRAPHICS (SOCIAL GROUPS)**<br>• Gender, age, race/ethnicity, (dis)ability, social class, etc. influence vulnerability and capacity<br><br>**COMMUNITY CHANGE & DISTURBANCE**<br>• In-migration, out-migration, community conflict, economic turbulence, etc. influence vulnerability and willingness to act<br><br>**AVAILABLE RESOURCES**<br>• Levels of human, social, economic, assets influence knowledge, ability, willingness to act | • Gender can be seen as a standalone matter of concern or applied intersectionally alongside other social parameters such as age.<br>• CPAs should consider the role of gender in everything they do.<br>• Children even if they belong to the vulnerable groups, they can play a significant active role in the disaster risk reduction.<br>• Traditional infrastructure and emergency procedures are disegned for people without disabilities, marginalizating people with disabilities and without taking into considaration the percent of the population facing hysical, sensory, cognitive, or mental health issues (World Health Organization, 2011). Disability-inclusive DRR policies, strategies and action plans have to be developed in line with the Sendai Framework.<br>• Risk perception is more related to do with sociopolitical factors and perceived vulnerability than biological factors and the social group identity.<br>• The degree of change of stable populations of locations, the disturbance or stability in a locality can influence levels of community cooperation and conditions under which CPAs for example have to work.<br>• Increasing population growth rates or changes or changes in population structure can exacerbate risk and threat in a multi-hazard environment.<br>• Newly arrived residents and tourists in a location will lack or struggle to benefit from the kinds of social ties and the resources which typically develop over time.<br>• The social characteristics is strongly connected with the reduced access to resources, greater exclusion and increased vulnerability.<br>• The role of access to resources or assets is a critical factor on shaping communities' abilities to plan for and respond to the impacts of hazards and climate change. Access to resources is a key factor in relative levels of vulnerability and the empowerment of marginal groups.<br>• Human and social factors may influence the uptake and use of technologies and social media in hazard and disaster contexts. |

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| SHARING | **RISK PERCEPTIONS AND ACTIONS**<br><br>Three intervening variables may point to only a weak relationship between citizens' risk perception and their actions: experience and motivation, trust and responsibility, and personal ability (including economic and personal conditions). All three variables are suggested to have a direct impact on how citizens perceive risk, who they place their trust in, whose agency is recognised, and how they influence actions. | **CITIZENS' AND CPAS RISK PERCEPTIONS**<br><br>• Is there variability in how citizens characterize the risk (fatalism, blame, agency, etc)?<br>• How do CPAs characterize and measure the risk?<br><br>**CITIZENS' AND CPAS' ACTIONS**<br><br>• Are there organized risk management groups?<br>• What actions have been taken (plans, outreach, etc)? | • Citizens lack of the right information, or the right information in the right form in order for them to act.<br>• Development of a collaborative governance model is needed to achieve a granular level of CPA-Citizen knowledge exchange.<br>• In areas with history or recent occurrence of a hazard event, are often local groups which develop to support citizens and act as a more organized and formalised link to CPAs, who may be unknown to the general citizen. Over time such local groups can attain expert status as they often include interested local professionals.<br>• Volunteer participatory mapping and creation of actions groups for disasters has been highlighted as crusial with identifying key issues facing their community and interface with the various authorities concerned with different hazards. These groups can act as a useful bridge between CPAs and the general citizen with limited knowledge on emergency planning. The common ground of communication between CPAs-citizens is imperative and has been the bases for the design of the RiskPACC Co-creation Labs.<br>• Understanding of how all groups come into collaboration is important to identify any unspoken misunderstandings or latent conflicts<br>• The role of trust is a key variable in positive relationship-building between CPAs and citizens and a signifaicant factor that strongly influences risk perception.<br>• Social capital and availability of networks considers as an important aspect of community resilience.<br>• Reservoirs of social capital can be a significant indicator for successful or non successful vulnerability of a community in disasters. |

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| RELATING | **RISK REDUCTION RELATIONSHIPS** | **CITIZEN-CPA AND CPA-CITIZEN**<br>• How do citizens regard CPAs? How do CPAs regard citizens?<br>• Is there a history of collaboration or conflict?<br>• What is the level of trust?<br><br>**CITIZEN-CITIZEN**<br>• Presence/ absence of social capital<br>• Is there a history of collaboration or conflict?<br>• What is the level of trust?<br><br>**CPA-CPA**<br>• Is there a history of collaboration/ cooperation or conflict/ difference?<br>• What is the level of trust?<br><br>**NON-CITIZENS**<br>• E.g migrants, victims of trafficking, temporary visitors, etc<br>• Are they visible/ hard to reach/ at greater risk?<br>• What is the level of trust? | • Coordination failures, absences of coordination or linking with other service providers such as social services or community development that do happen could provide more evidence about the social context in which the CPAs are operating.<br>• Not permanently present citizens are less likely to receive or understand warnings and the changes of being more vulnerable is more increased due to a mix of social, cultural, and legal factors. This target vulnerable target group be affected by:<br>  ○ limited language proficiency;<br>  ○ limited knowledge of their destination's hazards, laws, institutions and markets;<br>  ○ limited social networks;<br>  ○ a lack of trust in authorities;<br>  ○ restrictions on mobility; and<br>  ○ discrimination, hostility and xenophobia (Guadagno et al 2017: 9). |

| | | | |
|---|---|---|---|
| BUILDING | | **ATTITUDES AND VALUES**<br>• What are citizens' expectations of CPAs?<br>• What are CPAs' expectations of citizens?<br><br>**FORM AND PROCESS**<br>• Technological/ non technological?<br>• Centralised or decentralised?<br>• Interpersonal communication?<br><br>**MEDIUM**<br>• Social Media?<br>• Face To Face?<br>• Provision of Materials?<br>• Provision of appropriate tools<br><br>**RECEPTION & EFFECT**<br>• Have messages been received as intended?<br>• Evaluation of Outcomes?<br>• Are the solutions adequate for CPAs?<br>• Are the tools adequate for Citizens? | • A successful two-way communication includes learning about the perceptions, attitudes, needs and expectations of both CPAs and citizen groups.<br>• Knowing what Citizens expect of CPAs and vice versa provide the starting point in opening up two-way communication and sets the scene for then exploring what works in the form, the medium and the evaluation. |

**TABLE 3: KEY ELEMENTS IN THE RISKPACC COLLABORATIVE FRAMEWORK (D4.3)**

The key elements presented in the above table, are going to be part of the guidebook that will be created in the second period of the current Task and are going to be presented in the testing processes in T6.2.

RiskPACC recogizes the risk communication as one of the most significant elements to establish a bidirectional communication. Direct, clear and consistent communication ensures the right actions of the public, their preparedness and the reduction of their vulnerability. As recognized, the training including activities based of risk communication may improve response to future disaster and built trust within the community.

In order to establish two-way communication between RiskPACC CPAs and their stakeholders, two different activities were designed, aiming to facilitate the dialogue, the Participatory Mapping Activity using a map as a focus, and the Risk Communication Activity, with a focus on exploring meaning and understanding of risk communication. The development of these two activities is based on the elements included in the above table 3. Co-creation labs of phase II gave the floor on addressing and 'testing' the Framework modules. D3.6 and D4.3 give in detail the design and the analysis of the main results of the two activities.

Both exersices, have been integrated to training material of the current deliverable, and their analyses follows in Chapter 5.

## 2.3 Technical solutions

In RiskPACC, in order to bridge the RPAG, a majority of technical tools (Aeolian Augmented Reality (AR) App, Hermes platform, Mapping Damage, Public Sonar, Thermal Comfort Tracker) have been developed that are described thoroughly in Tasks 5.1, 5.2 and 5.3. These technological tools with some key means and approaches of the Framework have been tested and upgraded in the co-creation workshops in WP3.

D5.4 "Completion of training material" provides the overview of the training for these technological solutions. This training material includes a series of transcript videos uploaded both in the RiskPACC platform as well as in the channel of the project in YouTube.

The technical solutions' aims are the following.

- The Aeolian AR tool is an Augmented Reality (AR) mobile application aiming to enhance preparedness and response to natural and human-made hazards.
- Hermes is a web-based risk communication platform able to address the communication challenges faced during emergencies.
- MappingDamage app aims to complement satellite pre-disaster and post-disaster maps, using crowdsourced information. The MappingDamage app takes input from the open mapping volunteer platform OpenStreetMap (OSM).
- PublicSonar is a cloud-based online application, analysing millions of online interactions per day, able to detect incidents early on and maintain situational awareness.
- The Thermal Comfort Tracker Tool, provides valuable insight of citizen perceptions and adaptive behaviour during heatwaves from the surveys.

This table below shows how these technical solutions have been developed under the umbrella of the RiskPACC Framework modules. The current content will be part of the guidebook that will be created for the second phase of the Task:

| | Understanding | Sharing | Relating | Building |
|---|---|---|---|---|
| **Aeolian app** | • Improving citizens' and volunteers' comprehension of risk context through Disaster Trainings, AR campaigns, and access to relevant material.<br>• Stages for a a common risk communication amongs CPAs . | • The chat facilitates a direct communication between CPAs ans citizens/ volunteers. | • The tools has been tailored for specific needs.<br>• Adoption of a common language between CPAs and citizens/volunteers, fostering equality and co-design od shared solutions. | • Workshops and co-design supported a collaborative development of risk communication approaches. |
| **Hermes** | • Faciliate imrpoved communication between citizens, | • Share data about imminent or recent events . | | |

| | | | | |
|---|---|---|---|---|
| | volunteers and CPAs. | | | |
| **Mapping Damage tool** | • Allow pre-disaster monitoring of the state of available resources. | • Allows citizens to be active participants in post-disaster damage mapping. | • Facilitates top-down and bottop – up information flow betwewen CPAs and citizens. | • Facilitates top-down and bottop – up information flow betwewen CPAs and citizens. |
| **comfort tracker tool** | • Allows CPAs to perfom controlled experiments to define citizens perceptions. | • Allows CPAs to perfom controlled experiments to define citizens perceptions. | | |
| **PublicSonar tool** | • Identifinition of hazards early in their occurrence by scanning social media.<br>• Identifinition of resources that people might need. | • Ability of tracking people's socials modia in multiple languages using various keywords.<br>• Knowledge of risk perception through sentiment analysis. | • Ability of indefication questions directed towards CPAs, citizens and non-citizens on social media. | • Ability to inform changes to CPA risk communications by identifying which media to use based on citizens' preferences and by analysing their responses and emotions relating to risk communications via sentiment analysis. |

**TABLE 4: TECHNICAL TOOLS ALIGNMENT WITH THE COLLABORATIVE RISKPACC FRAMEWORK (D3.6)**

These technical tools including their training material, with the Knowledgebase Repository, collaborative framework and training material of the current Task are aimed to be tested in the trial events that will take place in T6.2 where observer cities of the Efus network will elaborate to give feedback about the modules and the tools that have been developed within the project. The feedback that will be gained will help to the improvement and the final integration both of the training material and the framework.

## 2.4 The sample of hazards training

The following table summarizes the hazards related to RiskPACC Framework as well as the suggested material that will be used during the training procedure. The training material is based on several resources collected from international organizations and associations as well as material developed under the frame of research projects.

| Hazards | Material | Organization |
|---|---|---|
| Forest Fires | https://training.forestfireprotection.com/ | Erasmus EU-funded project "Training for self-protection against forest fires in rural areas" |
| Earthquakes | • https://www.usgs.gov/faqs/where-can-i-find-earthquake-educational-materials#faq<br>• https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/earthquake.html | USGS-United States Geological Survey<br>GDPC-Global Disaster Preparedness Centre |

| | | |
|---|---|---|
| CBRNe | https://encircle-cbrn.eu/encircle/ | EU-funded project ENCIRCLE |
| Terrorism | https://www.unodc.org/documents/terrorism/for%20web%20stories/1-WS%20CBRN%206%20modules/CBRN_module_-_E.pdf | United Nations Office on Drugs and Crime |
| Nuclear incidents | https://preparecenter.org/wp-content/uploads/2021/03/Training_material-1.pdf | IAEA- International Atomic Energy Agency |
| Pandemics | https://www.governingpandemics.org/courses | Global Health Centre |

TABLE 5: RESOURCES FOR TRAINING IN HAZARDS

## 2.5 Lesson learned from RiskPACC workshops

The main results from the co-creation workshops are reflected through D3.6 "Report Lab Phase II", where a thorough analysis has been done. Each case study focuses on different target groups as shown in the table below:

| Case Study Partner (s) | Main Target Group(s) |
|---|---|
| CAFO | General citizens |
| CDP | General citizens |
| IBZ | Teachers |
| ISAR | General citizens |
| MDA, MoE | CPA volunteers |
| MRP | Elderly populations and young adults |

TABLE 6: PRIMARY TARGET GROUPS OF EACH CASE STUDY

Workshops of Lab phase II, built upon the co-creation methodology included 2 phases, where both technical and conceptual tools were tested twice. The first phase included the testing of the conceptual tools: Nudging, Participatory Mapping and Risk Communication co-design (Nudging was explored only in the case of ISAR, focused on the pandemic use case). The second phase included the testing and the implementation of the technical tools Aeolian Augmented Reality (AR) App, Hermes platform, Mapping Damage, Public Sonar and Thermal Comfort Tracker.

The aim of the exercises was to facilitate discussion and activities amongst participants that address each of the modules of the RiskPACC framework, and so help closing the risk perception-action gap between CPAs and citizens.

One of the main pillars that was raised, is the need for consistent, honest, and clear communication between CPAs and citizens. The role of communication and the importance of conveying a message in the right way proved to be very important. Clear communication is a cornerstone that must been set up from the early year's risk education of children.

Two – way communication as a major factor and crucial that should be achieved, was highlighted as important by all study cases. In addition, this communication should be completed with multilingual and age-appropriate actionable guidance, on what the public can do to protect themselves, tailored to the needs of each target group.

Discussion within labs, pointed out interesting conclusions and observations about the deficiencies that exist in training materials. It was emphasized that not only is it necessary to have training materials that can guide or educate citizens and CPAs, but to ensure their continuous and uninterrupted education. As concluded from the labs, training material or methods should include some of the characteristics following:

- Oriented and addressed to different target groups, respecting their needs and peculiarities.
- Multilingual and age-appropriate actionable guidance, on what the public can do or should not do.
- Two – way communication must be ensured.
- Not only in digital form, also in form of leaflets with eye-catching imagery and visualizations, including guidelines to citizens and links to additional info.
- Training material with a more comprehensive approach that ensures understanding, rather than just drills and exercises.
- Promotion of the guideline training materials through a big variety of social media to reach to a broader audience. It was emphasized a need to diversify communication methods and consideration of different target groups and potential power failures.
- Nudging is a useful tool for a promotion of a training material, for example it had a great impact on up taking of tracking apps.
- Visual and interactive lesson materials aids to people's memory.
- Teachers should include self -reliance in their curriculum and schools should develop emergency plans.
- Education of pre-emptive risk including informing children about potential risks, practicing drills, and visiting emergency services.
- Early year's risk education with younger adults who received training practicing emergency skills such as CPR (Cardiopulmonary Resuscitation) more frequently than older adults. This has been proven extra valuable.
- CPA exercises run with school groups, school safety weeks, and visits to fire stations has proven very efficient. As mentioned, it was raised the importance of input from CPAs in children's risk education, with communication directly from them.
- Specific language associated with risks should be simplified and gamified solutions were proposed to engage children.
- The training material should be adapted to different age groups, younger children were found to enjoy activities like crosswords, while older grades preferred digital content hosted on computers.
- Gamified approaches, including physical activities, were recommended for class engagement.

As the IBZ use case arise significant key points on the training material for children (age 0-6), a bilateral discussion followed showing off the needs regarding the training material for children. The role of the teacher as the channel of communication and reassurance with the children was also highlighted as important. From the discussions, it came up that even there is a various literature training the children in the disasters, there is still a lack of training material such as:

- Training material for CPAs on how they communicate risk to children. The implementation of the training could take place in schools and CPAs stations.
- Training material for teachers on how they communicate risk to children in school environment: invite CPAs; create a lesson focused on hazards and environment; organise an activity to invite parents; game material - handbook - images - climate change tree for children.
- Training material for teachers or parents on how they communicate risk to children, outside the school boundaries. This will include the involvement of parents in homework activities related to emergency preparedness, helping engage parents in these activities too. As it was referred before, the teachers' role is much more significant to communicate risks to children, so it much be into consideration in larger scale.

Finally, through the scientific expansion of the workshops, important conclusions were drawn regarding the needs of the development of the training material, which will assimilate the 4 modules of the collaborative RiskPACC Framework. These were taken into account for the creation of the current training material, but also will be taken into consideration of the development of following final version D4.6.

# 3 CHARACTERISTICS OF TRAINING MATERIAL FOR RISK PERCEPTION AND RISK AWARENESS FOR DIFFERENT TARGET GROUPS

Different groups understand and perceive risk differently than others. Citizens' actions, respectively, are not always aligned with what CPAs expect from them to do, while even their perception and their actions do not always go hand in hand. Many reasons lie behind this disproportion and misalignment, unclear and blear communication, as well as lack of appropriate and adequate training material and improper guidance from experts.

RiskPACC pays particular attention to the different communities that are located within the cycle of the disaster and shows special care to ensure the smooth, safe and complete communication of all members with each other, CPAs, citizens, volunteers as well as groups with greater vulnerability in disasters such as people with impaired motor function, with reduced or no vision problems, older people, young children, immigrants, homeless people, tourists, etc. Training in risk awareness has to be built under the specific needs of all of these groups, as it has been set by the Sendai Framework, with the ultimate goal of closing the RPAG.

Through the discussions, vulnerable social groups were identified, including people with respiratory diseases, general health problems or mobility issues, disabled people, children, students, elderly, refugees, minority groups, women, single mothers, pregnant, homeless, socially vulnerable citizens. Furthermore, climate justice and the unequal effects on different vulnerable groups were discussed, including also citizen who work outside. In addition, local biodiversity was also identified as vulnerable, which raises the need for more discussion in the future about the impacts and the vulnerability to the ecosystem through the climate change (IPPC, 2022).

Since one of the main problems between these groups in the cycle of perception - action is two-way communication, a first approach is made to identify the particular characteristics that govern these groups so that their training on the risk management cycle, on *what to do* and *no to do*, will take into account the particularities of each group.

Analyzing the social political content of understanding, framework is most focused on older age groups and children or youth and volunteers as well. Regarding gender issues, as described in D4.3. "*for the RiskPACC uses gender as a crosscutting issue and so it can be seen as either a standalone matter of concern/source of evidence, or applied intersectionally alongside other social parameters such as age*".

## 3.1 CPAs

Europe suffers too often from natural disasters. The types of natural disasters depend on the geological profile, geographical location and climate. In the Mediterranean

region, the most common or most likely are earthquakes, forest fires, floods and volcanic events (European Commission, 2002).

For effective management of a natural hazard, it is vital to have access to accurate information. When a disaster occurs, stakeholders must be notified immediately without any delay. In addition, local technical/human resources must be mobilized quickly and efficiently to achieve the lowest possible number of human losses, protect welfare and cultural heritage, and control and evaluate the damages. In cases where the resources and related capacities of the municipalities are insufficient, assistance should reach the highest administrative levels (prefecture, region) immediately. The higher administrative levels (county, region) must have a clear picture of the human/technical resources of individual municipalities to be able to assess and transfer resources from one area to another. Externally qualified supporting human resources, together with voluntary organisations should also be informed as soon as possible to reach the disaster site (Jackson et al., 2004).

Action Memorandums should be drawn up by all agencies involved in natural disaster management, in order to describe who is doing what, why they are doing it, how they are doing it (by what means) and when they are doing it. Therefore, following the Internal Service Organization of each Agency, which varies from Agency to Agency, the appropriate Action Memorandums should be created (N.K.U.A., 2011).

Similarly, each Agency will have to cooperate with other stakeholders (public and private sector) by concluding the so-called memorandums of cooperation. These may include actions offered in situations of preparation or response to risks to the Agency. The aim is to cover possible management gaps in emergency situations. Always bearing in mind that a disaster can affect all structures in an area, cooperation with neighbouring municipalities, material suppliers outside the municipality's area of responsibility, voluntary groups from the wider region or even from all over the country, etc. is encouraged.

The existence of interoperability is an important element of successful disaster management and a further catalyst for strengthening disaster risk management policies.

According to the European Interoperability Framework, it is defined as the ability of a system to system or process to share and use information and/or functions of another system or process. The ability of systems, stakeholders and all structures involved to communicate is essential for effective disaster management in all phases of the management cycle.

Interoperability in terms of emergency/ disaster management is considered and analysed at the following four (4) layers:

1. Institutional Interoperability, which refers to the harmonisation of the legal provisions governing the functioning of the actors involved in the disaster management phases.

2. Organisational Interoperability, which refers to the definition of objectives, the establishment of procedures and the achievement of cooperation between the

competent bodies seeking to exchange information, as required in disaster management.

3. Semantic Interoperability, which refers to ensuring that the exact meaning/meaning of the information exchanged is understood by all parties involved. Semantic interoperability is achieved by defining and adopting common vocabulary and terminology across systems and services.

4. Technical Interoperability, which is defined as the ability to transfer and use information in a homogeneous and efficient manner between IT systems and organisations (European Commission, 2023).

It should be emphasized that interoperability at system level (technical interoperability) cannot be achieved unless previous levels, such as the institutional, process and information/data levels, are first ensured. Another crucial factor towards achieving interoperability in the field of disaster management is the continued strengthening of interoperability through actions within the framework of public policies for disaster risk reduction.

**Interface between CPAs and citizens**

The area of Communication, Information and Education about the risks that threaten a Municipality should be given special attention.

The Pre-Disaster stage consists of developing a strategy, a plan, the so-called communication plan, which includes communication, information and education. This plan should involve the implementation of actions by the individual agencies. This also should include the implementation of this plan by the individual service units of a municipality, according to their respective responsibilities, and many of these should be implemented on an annual basis, so that their effectiveness can be monitored and evaluated (Ministry for Climate Crisis and Civil Protection & Civil Protection Greece, 2016).

The communication between CPAs and citizens could be achieved through:

1. The development of cooperation with local media (through the Municipality's Press Office) through memoranda of understanding and actions.
2. Planning for public communication in cases of organized population removal.
3. Planning for a draft newsletter to record the damage for a first assessment of the situation.
4. Communication management planning in emergency situations (press spokesperson and periodic information release).

The communication axes proposed are as follows:

- Promotion of prevention and preparation actions (flood protection works, information campaigns, etc.), response and recovery actions.
- Encouraging and raising awareness among citizens and local voluntary groups.

- Use of the private sector locally as a platform for communication and action (Ministry for Climate Crisis and Civil Protection & Civil Protection Greece, 2016).

Types of Information - Information - Themes:

- Information on existing risks, protection measures and ways of dealing with them (at individual, family and workplace level).
- Information on operational planning (institutional responsibilities, roles, developments, knowledge exchange, etc.).
- Information on the existing emergency planning of the municipality.

Methods that these communication and training could be achieved:

- Organize information events (workshops, working meetings, etc.).
- Organisation of conferences focusing on specific topics.
- Production of information material, leaflets, web applications, etc.
- Hands-on learning.
- Exercises (on map or in the field).

All these information and training has to be oriented to different target groups:

1. For the officials of the municipality.
2. For the other local stakeholders, regarding the existing operational management.
3. For citizens on risk management issues.
4. For special groups of the population (volunteers, students, teachers, staff of special services involved, disabled people, elderly people, etc.) (Ministry for Climate Crisis and Civil Protection & Civil Protection Greece, 2016).

## 3.2 Volunteers

Volunteers are distinct target groups. We could say that they act as a channel of communication between CPAs and citizens. Volunteering, in other worlds, is a kind of citizens engagement in the cycle of destruction of risks.

In natural disaster management there are three main categories of volunteers:

- Civil Protection Volunteers: The natural person - member of a voluntary civil protection organization, who joins the Civil Protection team and provides, in cooperation with local authorities and other operational services, an unpaid and non-profit service for the benefit of society as a whole.
- Volunteer Firefighter: Are citizens that are willing to offer voluntary (unpaid) work in the field of Firefighting - Rescue exclusively and only through the Fire Service. Volunteering firefighting is an institution which is a significant component in the firefighting strategy followed by many European countries (FIRE PRODUCT SEARCH, n.d.).

- Community volunteers: Citizens who offer their services and assistant with no profit.

The Voluntary Civil Protection Organisations support government agencies in all phases of the disaster cycle, through Operational and Supporting roles. Operational actions relate to the prevention and firefighting actions for the suppression of forest fires, urban firefighting actions, first aid actions and search and rescue actions.

The responsibilities of the Civil Protection Volunteers are according to the training and certifications of each volunteer. The General Secretariat of Civil Protection has an administrative and coordinating role in the training of Civil Protection Volunteers and trains them through the Civil Protection Academy, which may, for educational purposes, establish memoranda of collaboration, programmatic agreements or contracts with competent state or private organizations, national or supranational, or with other specially authorized or recognized organizations and institutions of higher education, in subjects related to the mission of Civil Protection.

The basic training of volunteer firefighter candidates is carried out at the Fire Academy. By decision of the Chief of the Fire Service, the training may also take place at regional level at the premises of the relevant professional fire service or at another suitable place.

Voluntary Organizations and other cooperating organizations and agencies are activated and involved operationally on the initiative of the locally competent Regional Civil Protection Coordinator or the Commander of the Civil Protection Coordinating Organization, in the appropriate operational organization per incident, according to the existing and declared operational capabilities in proportion to the emerging operational needs. Volunteer Fire Services are immediately activated by the Fire Service Operational Coordination Centre.

Community volunteers are consisted mostly of citizens willing to provide community service without profit. Particularly, in the recovery phase of a disaster or even in the response phase groups of voluntary organizations are mobilized providing social assistance to the first responders who operate. Citizens are more likely to engage with a volunteer organization when they are appropriately trained. Volunteer training ensures higher performance and long-term commitment and involvement.

Volunteer interaction with citizens

- Volunteerism as a social phenomenon contributes to the expansion of citizens' participation in public life and involves different social groups in solving social problems.
- Volunteers Organization can use social networks such as YouTube videos, blogs, newsletters, tweets, etc, to spread information about their activities.
- Television and radio can provide citizens with information about volunteer's work.
- Analysis of internal documents and public information resources of Volunteers Organization, content analysis of volunteer centers' public pages on Facebook, Instagram, etc.

- Volunteer's work can be expanded by talking to the people on the street, doing events, making interviews, exhibitions and conference presentation, depending on the target group each time.

## 3.3 Citizens

From the sociology of natural disasters, it comes out that poor populations, women, children, older people and minorities are the most vulnerable[1]. A general rule of the practice followed for risk perception investigation and awareness activities is that such initiatives should have a horizontal character by addressing the entire society. On the other hand, it should be underlined that several target groups have special needs for their awareness and readiness regarding natural disasters. From this point of view a vertical approach may respond to the specific needs of special target groups. In D4.3, there is an extended variety of training sources provided aligned with the Framework modules.

A good example of how a training material or a generally a training method for citizens should like and be include in the RiskPACC, can be found in the activities of the Earthquake Planning and Protection Organization (EPPO) in Greece. This public organization has been producing systematically educational material for risk perception and the awareness of citizens since 1984. The policy of EPPO addresses the public as a horizontal approach of risk perception and awareness of citizens. In this sense, EPPO aims to develop a culture of prevention and readiness among the general population through a variety of activities, such as the production and dissemination of printed and digital educational material including multimedia, guidelines for self-protection of adults and young people, the organization of various educational talks, workshops and seminars, and the broadcasting of informative spots regarding the protection against earthquakes.

Characteristic examples of educational material for the general public are brochures and booklets titled "Get ready for an Earthquake: Guidelines for the general public", "Get ready for an Earthquake: Guidelines for the aftershock period", as well as "Prevention of, and Coping with, the Psycho-Economic Effects of Earthquakes".

The vertical approach of EPPO include the next target groups:

<u>The education community</u>

The training of teachers is one of the first priorities of EPPO. The main objective is that teachers, in turn, can inform their colleagues and their students to take appropriate prevention and preparedness actions for the reduction of seismic risk in the school area. In addition, the students' understanding of the earthquakes and associated phenomena, the acquisition of knowledge about protection measures, as well as the improvement of their skills for dealing with an earthquake emergency in Greece, a country with continuous seismic activity, must start from the first school years and be part of the daily school life.

[1] e.g. https://www.physio-pedia.com/Protecting_the_Vulnerable_in_Disasters_and_Conflicts

In this sense, EPPO has drawn up and regularly updates a “Memorandum of Activities for Seismic Risk Management”. In parallel, EPPO organizes seminars aimed mainly at Principals of school units and teachers designated as responsible for drawing up school emergency plans per regional unit. In this general frame, specific educational activities are developed for teachers, for elementary and secondary school students, as well as for university students.

The public and private domains

The occurrence of a strong earthquake during working hours can cause many problems for the employer, staff and visitors. Antiseismic design in private and public sector workplaces includes a set of actions by the employer and employees aimed at ensuring the protection of everyone's health and safety and reducing the effects in the event of an earthquake. In this regard, EPPO organizes and disseminates awareness material with protection guidelines, seminars, exercises, and educational material in print and digital.

The executives of civil protection services

For the staff of civil protection authorities, the EPPO organizes technical manuals focusing on specific operational issues and creates appropriate educational material.

The disabled people

For this task group, EPPO organizes specific awareness material, such as the booklet “Get ready for an Earthquake: Guidelines for people with mobility impairments”. In parallel, relevant material has been produced for people that support and help disabled people.

The tourism domain

The tourism sector is greatly affected by natural disasters. Greece is one of the most important tourist destinations in the world. Therefore, EPPO implements various seismic risk awareness actions, which are directed to three main targets groups: employers in tourism, workers in tourism and tourists. The relevant material includes publication and dissemination of brochures, booklets, and multimedia materials as well as the organization of awareness seminars.

## 3.4 VULNERABLE GROUPS

Vulnerable groups who are exposed to disasters, natural or human-made, encounter greater dangers and hazards in their life (Seddighi H, et.al, 2021). There is a need for a guidelines plan tailored to the needs of peoples with disabilities. In addition, creation of organisations that conduct critical science and provide health information in order to protect citizens against expensive and dangerous health threats s required. Centers for Disease Control and Prevention (CDC) that states in USA, is a service organization that works 24/7 to protect USA citizens and foreigners from safety and security threats.

Older people are one of the topic groups in the vulnerability list. They not only face mobility problems, but also chronic health conditions. In addition, sometimes they live

on their own, without any family or friends nearby to support and take care of them. Adults may experience challenges that come with advanced age, such as hearing or vision problems or cognitive impairment, which may make it difficult to access, understand, and respond to emergency instructions (Central Hume, n.d.).

It is critical to educate and provide training not only to **people with disabilities** and their caregivers, but also to emergency planners, first responders, and other members of the community who play an important role in making sure that people with disabilities are included in emergency preparedness and response plans. In several states, there are promoted brochures, booklets, guides and other materials and tools that people with disabilities and their caregivers can use to prepare for an emergency. The relevant material includes publication and dissemination of brochures, booklets, and multimedia materials as well as the organization of awareness seminars. For instance, in videos could be used the sign language about the importance of making a home safety plan.

The Ready is a USA public service campaign and along with FEMA (Federal Emergency Management Agency) are designed to educate and empower the American people to prepare for, respond to and mitigate emergencies and disasters of all types. The challenge also applies to the elderly and other special needs populations.

**Special needs populations**

FEMA has recognized that when it comes to disaster preparedness, populations with special needs need to take some additional considerations into account when engaging in planning. For example, they have to know a network of people they could reach out to for assistance when necessary. A list of contacts should be added to the emergency kit (in waterproof packaging). In addition, they could identify in advance accessible means of transportation, inform the support network of the location of emergency supplies in their house, prepare for adapting the use of medical equipment when a power outage occurs, prepare a note outlining the best way to communicate if there is a communication disability and plan ways to evacuate by carrying auxiliary equipment, and have a backup plan in case of loss or damage. Moreover, when creating an emergency kit, apart from the basic supplies, daily needed and usable items should be included (FEMA, 2018).

There is a need for creation disaster training materials specially designed and tailored to the specific needs of for each vulnerable groups of people with disabilities. For example, there should be specially designed training materials in braille for blind or with low vision people.

**Migrants, asylum seekers and refugees**

In addition, as societies around the world becoming increasingly diverse, the inclusion of migrants, asylum seekers and refugees in the emergency planning is crucial. It is very likely for them to issue difficulties on accessing adequate services, resources and opportunities due to reasons such as language barrier, social and geographical

confinement, and the widest mistrust from the members and institutions of the host countries. For these reasons, a disaster risk assessment should take into account the coexistence with those vulnerable groups. The following should be ensured: access to basic services, disaster preparedness, delivery of emergency assistance and recovery support (Guadagno et al., 2017). The following measures should be taken:

- Engagement of migrants in disaster management and civil protection authorities either as employees or as volunteers. This will lead to cancel their reluctance in participating in civil affairs and they will also become more proficient in the spoken language, learn new skills and increase their interactions with locals assisting them to be integrated in the host society.
- Collection of data in order to provide knowledge and proof of the risks that migrants face.
- Involvement of migration management authorities, interpreters, translators, civil society organizations, ethnic media and other non-traditional actors in disaster management and ensure of coordination and cooperation among them.
- Building trust among migrants and disaster management authorities. Host country should proceed to actions that will reduce migrants' mistrust and fear of them.
- Conversion the dominant narratives on migration to discourses that positively acknowledge the added value of migrants to the host nation, as regards economic welfare, cultural and social liveliness, and overall resilience.

**Women in disasters**

As the whole world is increasingly affected by climate-related disasters, disproportionately affect women and girls and there is evidence that violence against women and girls (VAWG) increases during disasters. It is crucial to raise awareness on disaster related VAWG, gender-sensitive disaster risk reduction policies and inclusion of women in disaster management. The root causes of VAWG, such as poverty and economic insecurity, should be tackled in a more gender-sensitive manner. In addition, mechanisms for quick and efficient coordination among disaster management, law enforcement and health authorities need to be well defined in order to prevent VAWG and deal with their health impacts (Thurston et al., 2021).

The main instructions include to stay informed about the different types of emergencies that could occur and their appropriate responses, to make a family emergency plan, to build an emergency supply kit and to get involved in the community by taking action to prepare for emergencies. The relevant material includes publication and dissemination of brochures, booklets, and multimedia materials as well as the organization of awareness seminars. The material is designated for people with disabilities as well as their accompanying people. For the staff of civil protection authorities, the technical manuals focusing on specific operational issues and creates appropriate educational material for people with disabilities. In videos and other multimedia videos will be used the sign language about the importance of making a home safety plan.

## Children

School, through the education and socialization, plays an important role in the development of a child, as well as in learning and vigilance in important issues of his/her life. Furthermore, school is an important catalyst in the development of risk awareness for children.

Since the number of natural and human-induced hazards have been increased in the last two decades, is more than mandatory to ensure that hazard education is sufficiently extensive and up to date to ensure that children are fully aware of the actions to take at all stages of a disaster. The question of whether full and correct communication between CPAs and children is achieved is also important.

As referred in D4.3, an extensive literature on educational materials that communicate the basic principles of actions that children should take in the event of a disaster, exists. Although, it seems, as it also referred and have excluded from the co-creation workshops in D3.6, that even though training material for the different type hazards exists, there is still a lack of educational material that focuses on how the CPAs should communicate and behave to children. The age group of the children must also be taken into account, as children of different ages, with different development, show great differences in the perception of risks and the messages they receive. We could identify 3 main age groups, that have similar characteristics, presented in the following table.

| CHILDREN AGES CHARACTERISTICS | | |
|---|---|---|
| **5-7** | 8-12 | 13-17 |
| • Particularly good at sorting and categorizing.<br>• Difficulty recognising that objects have more than one characteristic such as color, shape, size, material.<br>• Perception of the flow of time and temporal concepts (before-after, today-yesterday-tomorrow), as well as the temporal sequence of events.<br>• Short-term and long-term memory develops to a satisfactory degree<br>• Memorize auditory and visual stimuli, e.g. a series of pictures of familiar objects<br>• Ability to recognize ten colours<br>• Progressively improvement of the focus attention improves<br>• Decrease of the impulsivity and increased mobility of earlier years<br>• Continuous improvement of motor skills and interested in testing their physical strength<br>• By learning how their body works, they gain the confidence and skills needed to enjoy sports activities and participate in individual or team sports. This | • Significant increase in vocabulary: the number of words used expands, as a result of greater social interaction and entry into formal education<br>• Fantasy predominates. In this phase, children are attracted to activities related to imagination (reading imaginary stories, games, drama), but can differentiate them from the real world.<br>• Starting point of the of the development of the logical thinking and the ability to perform basic mathematical operations | • Adolescent deals with changes that occur at the biological, cognitive, emotional and social levels.<br>• Tendency to oppose parents and question them and any "authority", as well as to reject the social situation and living conditions as unfair and unacceptable are characteristic of this age and can be fruitful reflections when they lead to new theoretical life models, in thoughts about social, political and human rights issues<br>• Tendency to independence from family and significant adults<br>• Simultaneous need to feel that he/she belongs to a group of (usually) peers determines to a significant extent his/her behavior and choices. In fact, the teenager risks submissively following a group, adopting its communication code, behaviors and committing to roles suggested by others. This need of the teenager is so intense that even behavior patterns are adopted that are contrary to the value system he had until then. The same adolescents who question |

| | | |
|---|---|---|
| makes their game more cooperative<br>• Interested in singing, dancing, and dramatic play.<br>• Development of fine mobility. With appropriate visual-motor coordination, they can and do copy simple shapes, write their name and use scissors satisfactorily.<br>At this age, pleurization is established (almost **complete).** | | parents may idealize and follow others with whom they have no emotional ties, but who promise them an ultimate meaning in life, inspire strength, and manipulate them.<br>• Adolescents, in the context of cognitive egocentrism, tend to believe that their experiences are unrepeatable, unique.<br>• The feel of loneliness and despair is also observed. This increases the possibility of them to become targets of malicious individuals or criminal groups that aim to manipulate them.<br>• A further increase in vocabulary is observed. Words acquire a fuller and more abstract content and metaphorical concepts and phrases (proverbs) are now understood.<br>• Strong emotionality of speech as well as introverted monologue and dialogue is observed. Language of adolescent culture is used<br>• Often using as a standard for comparison social stereotypes - the ideals of their time.<br>• Increase of cognitive egocentrism.<br>• Use of complex defense mechanisms (asceticism, intellectualism), daydreaming, acquisition of Ego identity |
| (Salkind, 2004; Cole et al, 2005; Skoubourdi & Kalavasis, 2007; Fuson, 2012; De Meester et al, 2020; Truscott et al, 2006; Siegler, 1998; Erickson et al, 2019; Parker & Thomsen, 2019; Fischer et al, 2020) | (Edwards & Mercer, 2013; Mochiu, 2014; Fuson, 2012; Feldman, 2011; Piaget, 2013; Janssen et al, 2021; Von Soest et al, 2020, Winnicott, 2018) | (Casey et al, 2008; Kokkevi at al, 2011; Batzou & Tsourtou, 2014; Salkind, 2004; Galanaki, 2001; McAdams & Cowan, 2020; Von Soest et al., 2020; Lloyd et al, 2013). |

**TABLE 7: KEY CHARACTERISTICS OF THE AGE DEVELOPMENT OF CHILDREN**

It stands to reason that not all children of all ages have the same perception in a disaster. Pay attention to children and right education is one of the primary steps of the disaster preparedness phase, that will following reduce their vulnerability.

It is mandatory to ensure that an awareness program for risk reduction for annual awareness actions addressed to schools and other local institutions is created. According to Emergency Planning Guidance of early childhood education services there are some aspects of planning for both natural and human-made hazards such as fire, power failure, bomb threats, threatening behavior etc.

# 4 TRAINING METHODOLOGY

The training material has been designed with a focus on disaster risk reduction in CPAs, citizens and other individuals (i.e. Students), based on the modules of the collaborative Framework that has been built within RiskPACC, which exceeds education in emergencies. The content of the information and training material developed under the program are on the lines of the internationally agreed approach of the Sendai Framework, towards building resilience.

The module development is based on the Learning System model, wherein the influencing factors targeted at the learner, delivered through education sectors and a formal teaching / learning channel, are drawn from the wider environmental context. This comprehensive multi-stakeholder information and training package includes:

- Glossary book with terms and definitions
- Awareness materials: videos, brochures
- Awareness activities: Workshops, school visits

The key points under of which the training material is developed are the insights resulted from different activities and Tasks of the project, with the most important pillar the knowledgebase Repository and the collaborative Framework. All of the conceptual and technological tools have been designed in order to close the RPAG.

The methodogy of the training material is adapted on the special needs that have came out from the different target groups that are studied and recognised as the most significant in the project, as well as the format that the productive material should have.

## 4.1 Training design

A training material in order to be more attractive and user-friendly, must adopt specific criteria. For this reason, it should assimilate specific characteristics. Color and format of the training material (either video, brochure, leaflet, etc.) play a decisive role in the way the information is assimilated by the target audience. Different audiences give rise to different needs for the format and way of transmitting a material.

### 4.1.1 COLORS

One of most important characteristics of a training material, is the color. Color is so much more than an aesthetic factor. Color is the perception of human's brain to light, and it is crucial for the development of the cognitive function.

For example, graphic designers and branding experts are expertized on the impacts that the colors have on consumer psychology. Furthermore, color plays a significant role in the treatment of autism and dyslexia. Right colors help focusing and decrease anxiety, reduces the eye strain, which guides to improvement of learning process. Researchers also support that colors are beneficial for Alzheimer's, as they improve the memory recall by images more easily.

Color stimulated too many different parts of the brain, that are connected responsible for detecting motion, shapes, edges, and transitions, even in color blind people. It can especially help students interpret and understand charts and graphs, and it aids in retention of material covered in class. Using the right color, and the correct selection and placement can seriously affect feelings, attention, and behavior when learning (Anderson D., n.d.).

Liking chunking, absorbing information through multiple senses is also a productive way to learn. Multimedia courses consisting of images, text, and narration stimulate different areas of the brain, leading to more efficient processing and storing of information. Color and graphics can enhance the presentation of a training material and facilitate information searching, even enhancing decision – making. They can also increase attention, helping absorbing information both to long-term and short-term memory (Chang at al, 2018). Right colors can boost productivity, focus and concentration (Burton C., 2021).

According to the above, it was considered useful and quite important, the recoloring of the main table that includes the key modules of Collaborative Framework. The color palette chosen is based on the basic palette of the RiskPACC 's logo. The colors selected belong to cool colors (such as blue, purple, turquoise) induce relaxion and pleasure, and are considered as restful and quiet (Kumi et al, 2013).

| UNDERSTANDING | SHARING | RELATING | BUILDING |
|---|---|---|---|
| **Risk Information Context**<br>• Hazard Event History & Risk Projections<br>• Locational Risk Policy, Legislation & Governance<br>• Environmental Context | **Risk Perceptions (RP) & Actions(A)**<br>• Citizens' RP<br>• CPA's RP<br>• Citizens' Actions<br>• CPA's Actions | **Risk Reduction Relationships (RRR)**<br>• Citizen<->CPA<br>• Citizen<->Citizen<br>• CPA<->CPA<br>• Non-Citizens | **Risk Communication Approaches**<br>• Attitudes & Values<br>• Form & Process<br>• Medium<br>• Reception & Effect |
| **Social – political (People) Context**<br>• Social-Demographics (social groups)<br>• Community Change & Disturbance<br>• Available Resources | | | |

FIGURE 2: RECOLOURING THE RISKPACC DRAFT COLLABORATIVE FRAMEWORK

Videos and factsheets are addressing the current colour palette, facilitating users to navigate more easily into the modules of the collaborative Framework,

### 4.1.2 OBJECTIVES

One of the important elements of a training material is the defining of the objectives. *What is the main scope and purpose of this training?* Defining the objectives will help the communicator to set up the appropriate training material or method.

A training material for disasters should be developed under some specific objectives:

**1: Understanding Terminology**

- Defining ‘resilience’ and ‘community resilience’.
- Highlighting how these terms are understood by different stakeholders.
- Acknowledging the variations in interpretations by CPAs and local communities.

**2: Community Engagement**

- Current challenges in community engagement.
- The need for a shift from passive to active citizenship.
- Culturally sensitive and appropriate engagement strategies.

**3: Empowering Local Citizens**

- Addressing the ‘responsibilisation’ of local citizens.
- Ensuring the delegation of appropriate resources and abilities to act effectively.

**4: Building Trust Ties**

- Emphasizing the importance of social capital alongside infrastructure resilience.
- Building and consolidating 'trust ties' between CPAs and civil society.

**5: Incorporating Bottom-up Activities**

- Acknowledging the need for citizen-led initiatives.
- Encouraging two-way communication and engagement.

**6: Aligning Risk Perceptions**

- Addressing the disconnect between CPAs and community risk perceptions.
- Strategies to better align and understand these processes.

**7: Risk Communication**

- The need for improved, two-way risk communication.
- Balancing the need for information with preventing unnecessary concern.

**8: Utilizing Local Knowledge**

- Addressing the lack of contextually sensitive data.
- The importance of utilizing tacit local knowledge in disaster preparedness.

**9: Addressing the Digital Divide**

- Ensuring inclusivity in technology-led solutions.
- Strategies to ensure that digital solutions do not exclude vulnerable populations.

**10: Expanding Use of VGI and Digital Technologies**

- Encouraging the broader application of VGI solutions across different stages of disaster management.
- The need for better data sharing and standardization across CPAs.

**11: Active Citizen Participation**

- Encouraging citizens to actively participate in disaster resilience efforts.
- Strategies for moving from passive to active citizenship.

**12: Developing a Future Vision**

- The need for a forward-thinking approach to citizen engagement and community resilience.
- Prioritizing proactive, anticipatory engagement over reactive responses.

**13: Improving Inter-agency Communication**

- The importance of effective communication channels between CPAs and community groups.
- Ethical considerations and inclusivity in digital communication platforms.

**14: Increasing Risk Information Availability**

- The need for more comprehensive risk information for local communities.
- Strategies for effective information dissemination and education.

### *4.1.3 FORMAT*

Training material can be designed in different forms. The form chosen depends as much on who this is addressed to, as on the interaction the trainer seeks, the purpose that he/she wants this material to serve, as well as on the medium through which one distributes it.

In some cases, video can be useful in representing the procedure or interactive facts in order to help in mastery of training and engaging, where learners can see complicated mechanical or gid deeper to the procedures presented. Besides, the modern web-based media by interactive features can be utilised in order to enhance 'active learning' methods with learners.

# 5 TRAINING MATERIAL IN THE CONTEXT OF RISKPACC

In this this chapter, there will be an analysis of the training material that has been developed in the context of the Framework and the Repository, its designed forms and its basic characteristics.

## 5.1 Training material guiding into the Repository

As described above and detailed in D4.2, the repository has been developed and integrated as part of the Hermes platform. It is accompanied within the platform by its own multi-criteria analysis.

In order to highlight the purpose but also the way in which this repository works, an audio-visual video was created which explains step by step how it was built, what it includes and what its main aim. It also gives basic directions about its features and functionalities.

The video contains:

- The scope of the repository
- The content
- The main library categories included
- The conection with the Framework
- The assessment criteria
- The key elements of repository's implementation into the platform
- The target groups that it is adressed

The final form of the repository will be emerged after the observations as they arise from the testing processes of T6.2.

## 5.2 Training material guiding into the key modules of the Collaborative Framework

The collaborative Framework is in a mature but still not completed phase yet. In order to guide a user, either a CPA, citizen or volunteer into the notions and its aims, that are aligned with the 4 modules Understanding, Sharing, Relating and Building, a transcript video has been created. This video is not still in its final form, since it still needs finalizing the input of the Framework that will follow in the last year of the project. The video will be upload in the platform, in order to be part of the training material tested in trial of T6.2, giving insights of the meaning and the scope of the Framework to the observer cities.

It is foreseen for the final version of the Task, a guidebook including all the element keys of the collaborative Framework, including all the training of the conceptual tools that have been created to address Framework's modules.

## 5.3 Training to the VGI tools

Volunteered geographic information (VGI) is the harnessing tool to collect, analyze, and share geographic information that was provided by individuals. As referred in D5.3, VGI is defined as "the harnessing of tools to create, assemble, and disseminate geographic data provided voluntarily by individuals" (Goodchild, 2007).

VGI tools consist of a wide variety of activities, based on the georeferencing images and spatial data, engaging volunteers in scientific research. The VGI can be very variable in capturing community risk perception and enhancing disaster resilience.

**Training to the OSM tool**

OpenStreetMap (OSM) is an online volunteered community created map that consists of a huge variety of data, such as road, rail stations, buildings, places of interest. It is editable, non-commercial and open to public. Its open nature also allows local contributors to add detail based on their knowledge of the territory while enabling rapid response large-scale mapping by drawing on its global pool of millions of contributors.

Under the umbrella of RiskPACC, in order to engage participants with the basic tools and abilities of OSM, training material has been created including the basic features and operation of the OSM. This training material consists of 2 different forms:

- 1 pdf handbook with all the specific guidelines of the project.
- 1 transcript video

The structure of this material, consists of the follow topics:

1. Introduction
    - What is OpenStreetMap (OSM) and Humanitarian OpenStreetMap Tasking Manager (HOTM)
    - Purpose of the manual
    - Requirements needed
2. Register process
3. The practice walkthrough
    - Navigation
    - Creation and mapping of points, polygons (areas- buildings) and lines and how can someone add additional information and tags
    - Saving process
4. Mapping on the Tasking Manager (TM)
    - Register process
    - Map of the project of your preference
5. Provide more resources and links for tutorials

## 5.4 Training to the conceptual solutions

Three conceptual tools were designed to be tested to the workshops of Lab Phase II: Nudging, Participatory Mapping and Risk Communication co-design. These tools were

created to be used by the use case leaders to incur the two rounds of workshops, addressing the four modules of the framework in order to close the RPAG.

The main scope of these activities was to facilitate discussion amongst participants that address each of the modules of the RiskPACC framework, helping bridge the risk perception action-gap (RPAG) between citizens and CPAs.

### 5.4.1 PARTICIPATORY MAPPING ACTIVITIES

The first activity to be tested in the first round of the co-creation workshops Lab Phase II was the participatory mapping exercise. Participatory mapping is mostly referred to the representations and visualization of spatial information that have been produced with the application of 'participatory' processes and with the direct involvement of community groups or individuals (Burnett et al., 2023). It is fundamentally established upon the ideas of dialogue and participation, while producing physical maps, or digital geospatial datasets generated by citizens, researchers, public authorities, and other interested parties through a process of participatory co-production.

Aim of the participatory mapping exercise that was created under the scope of Framework, was to address the Understanding, Sharing and Relating modules of the RiskPACC framework, through facilitated discussions and activities amongst CPAs and citizens, not the mapping of risks and hazards. Since the primary objective of the activity is concerned with dialogue, under the scope of the project is recalled as 'Participatory Mapping Lite', in order to distinguish it from volunteer mapping application OpenStreetMap (OSM).

A guideline document was prepared consisting of all the appropriate information for the facilitators in order to organize and implement the participatory mapping exercise. This document includes:

- General **questions the facilitator can ask** the workshop groups.
- **Suggested activities** that the group participants will be doing
- **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

The training material consists of:

1. Scope of the activity
2. Content
3. The link to the Framework modules
4. General guidelines that will be fruitful to the implementation of the exercise.
5. The design of the groups
6. The roles within the groups and its roles. More specifically, a participatory mapping exercise consists of a facilitator, an observer notetaker and a reporter of each group
7. The materials needed
8. Guideline questions the facilitator can ask the workshop groups, including their activities. These questions – activities are grouped in 6 sessions (welcome, understanding, sharing, relating, building and closure). For every session and

for every round of questions, you should have managed the time needed for the smooth flow of the exercise.

It first divides people into groups, then brings them together, and leaves room for both individual and collective points of view in open discussions. The training describes step by step the activities followed in each part.

Welcome session

In the welcome the scope is to give some room to the participants for introducing themselves and getting know to each other. You should always have in mind to share the values of the meeting based on democratic and equality principles. Women and minority groups may need more encouragement to speak.

You have then to share a big print-out size map of the area of interested, big enough so that the participants can work around the print-out the whole time of the activity.

Understanding questions

The questions of the first round are about to understand the risk from each other's perceptive (CPAs, citizens, volunteers) and possibly identify any RPAG.

Sharing

The aim of these questions is sharing knowledge, perspective and priorities that lead to relationship building. Actions taken or what actions do the participants expect from the others to do is the main focus.

Relating

Relating tries to explore the social capital in citizen's communities and in CPAs' professional networks and the trust issues that each of the participants faces.

Building

This session requires mixing new groups and extracting significant conclusions about how to engage with different parts of the local population to ensure knowledge of risks is shared.

Closure

Finally, the aim is to close with any potential queries that participants may have.

The training material, considering the particularities and the needs of the users that may use this training, a video was created using speaker providing step by step the guidelines for the implementation of a participatory mapping exercise and also a pdf document for those who prefer a printable document. More detailed, the participatory mapping exercise consists of the following parts:

- A factsheet included all the guidelines for the facilitators in order to implement a participatory mapping exercise (ANNEX 2).
- A short transcript video with all the information that a user needs to guide on the main principles and goals of a participatory mapping exercise.

- A long video with audio with the corresponding guidelines in order to support the target groups that need an audio training material.

Both videos will be uploaded in the platform.

From the results analyzed in D3.6, it comes out that a participatory mapping exercise of this formula, concludes different results, highlights the differences between the different target groups and societies.

### 5.4.2 TRAINING MATERIAL TO ENHANCE RISK COMMUNICATION

The risk communication exercise consists of 2 different forms, one adressed to a generic public (CPAs and citizens), and the other tailored to the volunteers. In order to be able to support both exercises with the required structure, two different training materials were created which are presented in the following subsections.

#### *5.4.2.1 Risk communication exercise*

The aim of the risk communication exercise is:

- To address a need by CPAs to communicate to citizens and/or volunteers a particular risk that they have identified.
- To open up a structured space for dialogue and sharing of risk perceptions between CPAs and citizens/volunteers on the meanings and measurements of this particular risk.
- To identify the best forms of risk communication to help citizens and/or volunteers to take informed and appropriate risk reduction actions.
- To meet the needs of co-design and build relationships of trust through working together on a defined activity.

A guideline document was prepared consisting of all the appropriate information for the facilitators in order to organize and implement the participatory mapping exercise. This document includes:

- General **questions the facilitator can ask** the workshop groups.
- **Suggested activities** that the group participants will be doing
- **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

The exercise suggests some simple communications of risk that could be fruitful for the facilitator to use, but someone can always adjust in his/her needs and under the scope of his/her use case. The guidelines are served not as strict instructions.

The training material consists of:

1. Scope of the activity
2. What the exercise involves
3. Content
4. The link to the Framework modules

5. General guidelines that will be fruitful to the implementation of the exercise.
6. The design of the groups
7. The roles within the groups and its roles. More specifically, a participatory mapping exercise consists of a facilitator, an observer notetaker and a reporter of each group
8. The materials needed
9. Guideline questions the facilitator can ask the workshop groups, including their activities. These questions – activities are grouped in 6 sessions (welcome, understanding, sharing, relating, building and closure). For every session and for every round of questions, you should have managed the time needed for the smooth flow of the exercise. The risk communication exercise focuses more on understanding, sharing and building.

It first divides people into groups, then brings them together, and leaves room for both individual and collective points of view in open discussions. The training describes step by step the activities followed in each part.

Welcome session

In the welcome the scope is to give some room to the participants for introducing themselves and getting know to each other. You should always have in mind to share the values of the meeting based on democratic and equality principles. Women and minority groups may need more encouragement to speak.

Then, set your communication and start setting question exploring it.

Understanding questions

The questions of the first round are about to understand the risk from each other's perceptive (CPAs, citizens, volunteers).

Sharing

Aim here is that each group should understand and share with each other the risk from each other's perspective and possibly identify Risk perception action gaps and acknowledge that the same communication can be interpreted in different ways. They also discuss amongst themselves what they know about the diversity in their locality.

Building

This session gives the opportunity of designing an alternative communication of risk.

Closure

Finally, the aim is to close with any potential queries that participants may have.

The example communication that is provided as an example has the upper goal of presenting the different ways one communication is interpreted by different people, and oftentimes misinterpreted completely. Therefore, considering also the results from D3.6, this format of the exercise provided fruitful grounds for discussion of the given questions, and the sharing of varied risk perceptions and interpretations, in addition to the second part, gives the participants the ability to create and suggest their own.

The training material, considering the particularities and the needs of the users that may use this training, a video was created using speaker providing step by step the guidelines for the implementation of risk communication exercise and also a pdf document for those who prefer a printable document. More detailed, the risk communication exercise consists of the following parts:

- A factsheet included all the guidelines for the facilitators in order to implement a risk communication exercise (ANNEX C).
- A short transcript video with all the information that a user needs to guide on the main principles and goals of a risk communication exercise.
- A long video with audio with the corresponding guidelines in order to support the target groups that need an audio training material.

Both videos will be uploaded in the platform.

#### *5.4.2.2 Risk communication exercise tailored for volunteers*

The training material for the implementation of a risk communication exercise tailored for volunteers even it is based in the same principles as the risk communication exercise.

The aim of the risk communication exercise is:

- To create a safe space for understanding and exchanging ideas on why sometimes we don't perform risk-reducing actions even though we recognize there is a risk
- To engage in open, two-way communication, which is a core objective of the RiskPACC project (Although the activity contains some questions with simple rating scales attached).
- The focus of the activity should be on understanding the contexts for why people do or do not act and not to focus on exposing shortcomings.

A guideline document was prepared consisting of all the appropriate information for the facilitators in order to organize and implement the participatory mapping exercise. This document includes:

- General **questions the facilitator can ask** the workshop groups.
- **Suggested activities** that the group participants will be doing.
- **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

The key difference that distinguishes this tailored form of exercise with a risk communication exercise is the anonymity issue. It is very vital for participants to feel comfortable when they share something, not be judged if they have not done something that might have been expected of them.

The training provides a different format of interaction with the participants. The answers are suggested to be answer either through Mentimeter[2], or via anonymous answers on small pieces of papers.

The exercise is divided to the following sections:

Welcome session
In the welcome session, directions are given regarding the purpose of the exercises, and facilitator presents the ways they will proceed with exercise.

Understanding - sharing questions
In each stage a set of numbering questions is being set to the participants, and then follows an open discussion, where the facilitator shares the results giving space for a constructive dialogue.

Sharing
This final section aims to facilitate a discussion about the impact of risk communications on action, why gaps between risk perception and action might occur, and what are perceived as the main barriers to preparedness. This can also be a good opportunity for volunteers to reflect on their own personal gap between risk perceptions and preparedness actions, and why they might have such a gap.

Closure
Finally, the aim is to close with any potential queries that participants may have.

As described in D3.6, this exercise was tested in the use case of the Eilat Case Study which provided a useful platform for non-judgmentally exploring why volunteers, who were trained on the actions that should take in case of an emergency (earthquake), did not act the same in case of their personal lives. Although there was limited time to take this activity further, it demonstrated the value of open, equal, two-way communication for discovering where vulnerabilities and opportunities lie.

More detailed, the risk communication exercise tailored for volunteers consists of the following parts:

- A factsheet included all the guidelines for the facilitators in order to implement a risk communication exercise for volunteers (ANNEX D).
- A long video with audio with the corresponding guidelines in order to support the target groups that need an audio training material.

### 5.4.3 NUDGING

The concept of nudging was developed by Thaler & Sunstein (2008) and centres on the idea that the organisation of one's environment (what they call 'choice architecture') can affect the likelihood of an individual choosing one option over another. Key to the theory is that, despite the influence of the environment on likelihood of choice, the number of possible choices the individual has and the economic

[2] https://www.mentimeter.com/

incentives for each choice remain the same; a framework known as 'libertarian paternalism'. Nudging is a social-psychological/behavioural tool for governments and businesses to influence citizen economic, healthcare and other decisions (Thaler and Sunstein, 2008).

Case study partner ISAR was interested in exploring the role of nudging in the choices people make around pandemic-related contact tracking apps and vaccination. For this purpose, a storyboard user story in a form of video was created, using a spoke-characters.The storyboard will be uploaded also in the YouTube channel in the RiskPACC account.

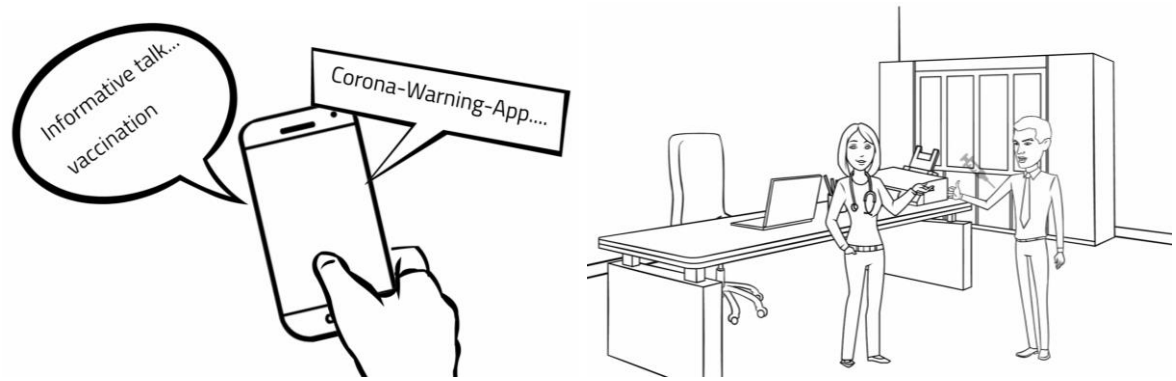


FIGURE 1: THE RISKPACC

The training material for nudging is conluded from one transcipted video.

## 5.5 Co-creation methodology

Co-creation Workshops have been created under the main scope of RiskPACC to improve communication between CPAs ands citizens, as an aditional communication channel to the citizens.

The steps for preparation include:

- Definition of scope and objectives.
- Setting a date and time.
- Recruiting participants and sending out the invites.
- Splitting up the roles and tasks between the organisers and the moderators

A significant co-creation aspect includes the collaboration of workshop facilitators, researchers, technology providers and representatives from local organisations for the scope kai topic of the co-creation workshop. More analytically, the co-creation's approach structure includes the following:

- For the **Introduction** phase, the topics and key/research questions are developed in closer collaboration with the task leaders to focus more on disaster risk. Before the workshops, the Task Leaders identified the need for

closer alignment with the research interests of the RPAG. As a result, the workshop agenda needed to include a specific focus on some aspects of the RiskPACC framework.

- In the **Conceptualisation** phase the workshop facilitators are to pick and conceptualise one of the co-creation methodologies, such as storyboard user stories or participatory mapping, etc. From the group discussions, the final design of the workshop will be resulted.
- The **Collaboration** phase is oriented to the final design the of the workshop as resulted from the group discussions. When including technological solutions, the co-creation design can also called co-design, co-development or participative technology development
- The final phase of the workshop is the **Continuation** phase, where contact information is collected to enable follow-up communication. Participants may receive a certificate of attendance for the workshop, and afterwards the workshop will be evaluated

The workshop process is a process model for the design artifact in the context of research for socio-technical information systems. The co-creation workshop process initialised is understood as a design artifact because co-creation in urban environments or communities is collective designing and developing of urban solutions.

The training material for the RiskPACC's Co-Creation Approach is produces in a video and in a brochure format (ANNEX 5) uploaded in the RiskPACC platform. Futhermore guidelines for the training methodology will be included in the designed guidebook that will follow in the final version of the deliverable.

# 6 CONCLUSION

The training material was created with a view of serving the principles and directions as they were formulated through the four modules of the Collaborative Framework (Understanding, Sharing, Relating, Building). This training is a simplified insight of the key elements that build the fundations of the Knowlegdebase of Repository and the Collaborative Framework.

RiskPACC recogizes risk communication as one of the most significant elements to establish a bidirectional communication. Direct, clear and consistent communication ensures the right actions of the public, their preparedness and the reduction of their vulnerability. It is deduce that training, including activities based on risk communication may improve response to future disaster and build trust within the community. Participatory mapping, risk communication activities and nudging are the main conceptual tools that have been created under the umbrella of the Framework aiming to facilitate the dialogue, as well as the co-creation methodology approach. Co-creation labs resulted in fruitful conclusions about the testing of these tools, guiding to their further development. Training material for these conseptual tools is created to faciliate end users navigate and absorb the information provided more easily.

Even if there is an extensive variety of training materials in the literature, still significant deficiencies are observed. Certainly, especially with climate change and the increasing disasters occuring in the recent years, there is a need for continuous update and dissemination of training on risk awareness and preparedness of the public, especially in order to achieve two-way communication between citizens and CPAs. Labs activities provided significant results on this. They highlighted the importance of multilingual and age-appropriate actionable guidance tailored to the needs of the different target groups (citizens, older people, children, people with motivation disabilities, etc), more comprehensive approach, early year's risk education with younger adults, etc,

The purpose of the training material is to continue developing and evolving, with the aim of creating an enriched guide that can be tested in the testing processes in T6.2, where observer cities will also participate. T6.2 will be implemented within the 3rd awareness workshop of WP8.

The final results of the project and the lessons learned from the trial procedures will lead to the complete development of the training material D4.6, as well as the final version of the Framework D4.4.

**Next steps**

The training material is still on going, and it will further be enriched and aligned with the needs and development of the other Tasks of the project. Furthermore, one of the main additions that will follow in the second and final deliverable will be a guidebook easy-to-read by the general public, containing training of all the key points of both

Knowledgebase Repository and collaborative Framework, the conceptual tools and every new tool or method will be created and developed in the final phase of the project.

The final version of the training material will be finalized, taking into acount the following:

- The lessons learned from the testing process in cities of The European Forum for Urban Security (Efus) network that will take place in T6.2.
- The feedback and the finalization of the Collaborative Framework.
- The needs that will derive from for the optimization of the visualization and technical funtionality of the Repository of good practices within the RiskPACC platform.

It would also be beneficial for the project to include an assessment process for the good practices in the future, that will facilitate the users, either CPAs, volunteers, or citizens and will be integrated in the RiskPACC platform. In addition, the training material that will be developed in the next period will adopt the needs for training that have merged from the co-creation labs and are highlighted in chapter 2.5.

Furthermore, a guidebook that will include all the key points and elements of the Repository and Collaborative Framework as well as all the conceptual tools and activities that have been created to bridge the Risk Perception Action Gap (RPAG) between citizens and CPAs, will be developed.

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# 8 ANNEXES

| Annex No. | Description | No. of pages | Source |
|---|---|---|---|
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| 2 | Training material for the participatory mapping exercise | 20 | UCL, KEMEA |
| 3 | Training material for the risk communication exercise | 21 | UCL, KEMEA |
| 4 | Training material for the risk communication exercise tailored for volunteers | 13 | UCL, KEMEA |
| 5 | Training to co-creation methodology | 4 | USTUTT |

TABLE 8: TABLE OF ANNEXES

## 8.1 ANNEX 1 – Training material of OSM

WARWICK
INSTITUTE FOR GLOBAL SUSTAINABLE DEVELOPMENT

HOT Humanitarian OpenStreetMap Team

# Mapping on the Humanitarian OpenStreetMap Tasking Manager

Institute for Global Sustainable Development

University of Warwick

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# Introduction (please read carefully)

## *What is OpenStreetMap and the Humanitarian OpenStreetMap Tasking Manager?*

OpenStreetMap (OSM) is an online tool for creating and sharing maps. As "the Wikipedia of Maps" anyone can edit OSM – it can be understood as Google Maps which is open, editable, non-commercial, freely downloadable and is "owned" by the contributors and users. Because it is owned by the global community of an ever-growing number of contributors (there were 6 million contributors globally in February 2020), it is in many cases more detailed than commercial maps, especially in areas which are of limited commercial interest. Its open nature also allows local contributors to add detail based on *their* knowledge of the territory while enabling rapid response large-scale mapping by drawing on its global pool of millions of contributors.

The HumanitarianOpenStreetMap Tasking Manager is the online platform created by the Humanitarian OpenStreetMap Team (HOT) for coordinating mapping in response to humanitarian and development needs. The purpose of the tool is to divide a mapping project into smaller tasks that can be completed rapidly with many people working on the same overall area. It shows which areas need to be mapped and which areas need the mapping validated.

This approach allows the distribution of tasks to many individual mappers in the context of emergency or other humanitarian mapping scenario. It also allows monitoring of the overall project progress and helps improve the consistency of the mapping.

## *Purpose of this manual*

The purpose of this training manual is to guide you through the signing-up process of OpenStreetMap and the Humanitarian OpenStreetMap Tasking Manager. Although it can be used as a standalone document, it is intended as manual to accompany a guided mapping training session (in-person or virtual).

*Requirements*

- ✓ **Skills:** Basic computer skills are necessary, such as using the mouse and signing up for an email account online; however, this should not prevent anyone from participating. People who do not possess these skills will be provided with adequate assistance by more experienced users that will enable them to contribute during the mapping marathon ("mapathon").
- ✓ **Technical requirements:** a computer; a mouse (if available); stable internet connection with enough bandwidth for displaying imagery.
- ✓ **Time:** About 10 minutes for signing up.

3

# 1 Create an OpenStreetMap Account

The first step to start mapping on OpenStreetMap is to create an OpenStreetMap (OSM) account. Please go to the following link (or copy paste it into your browser): ***https://www.openstreetmap.org/user/new***. Click *"sign up"* in the top right corner of the page (Figure 1).

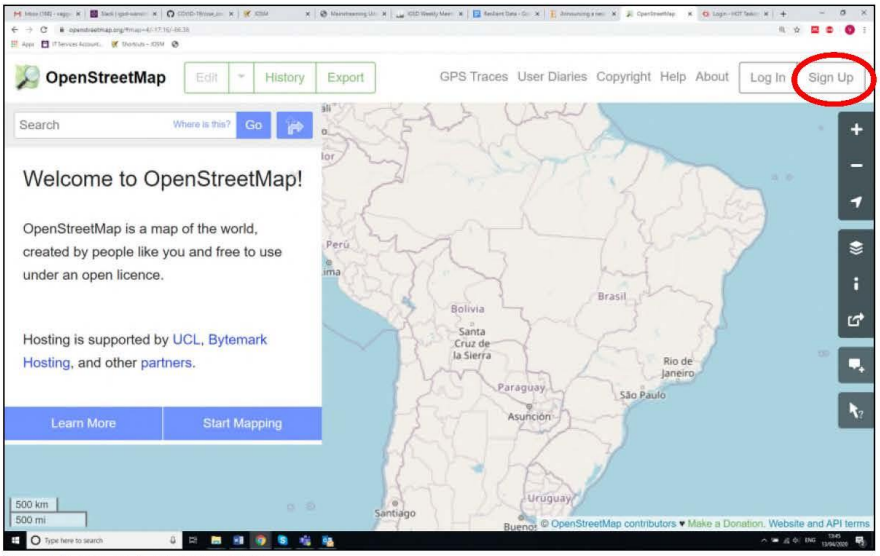


*Figure 1: Sign up to OpenStreetMap.*

There are five fields on this page that you need to fill in to register an account with OSM (Figure 2). To complete the fields follow the next steps:

- ✓ Enter your email address in the first two fields.
- ✓ In the third field, enter the username that you would like to have. This could be anything distinctive to you but be aware that in some cases the username you choose might be already taken by another user and you would need to choose another one.
- ✓ Enter a new password in the fourth and fifth fields. It does not need to be the same as the password for your email.
- ✓ Make a note of your OSM username and password. You will need it to log in later on.
- ✓ After you have completed all the fields, click *"Sign Up"* at the bottom of the page.

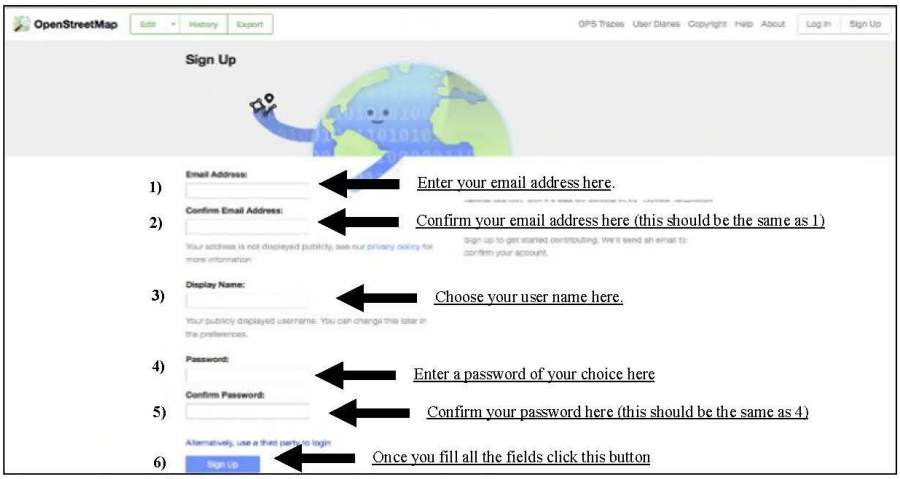


*Figure 2: Insert your details to create an account in OpenStreetMap*

After you click the *"Sign Up" button,* you will be asked to agree to the Contributor Terms and OSM Terms of Use. Please click on the three tick-boxes as indicated below and click "continue" to proceed (Figure 3).

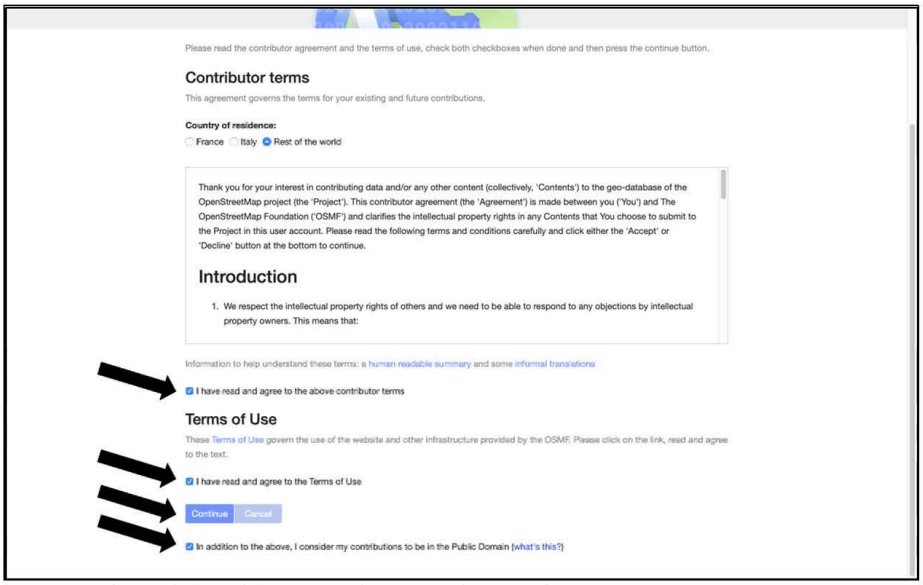


*Figure 3: Confirming the Contributor Terms and agreeing to the Terms of Use*

Now you need to confirm your account. **This is a very important step.** To do that follow the next steps:

- ✓ Open a separate window or tab in your internet browser, and navigate to your email. If everything was successful with your registration, you should see an email from OSM in your inbox.
- ✓ Open the email. It should look like Figure 4.
- ✓ Click on the link that is identified in Figure 4.
- ✓ If everything went well, you should have an OSM account.

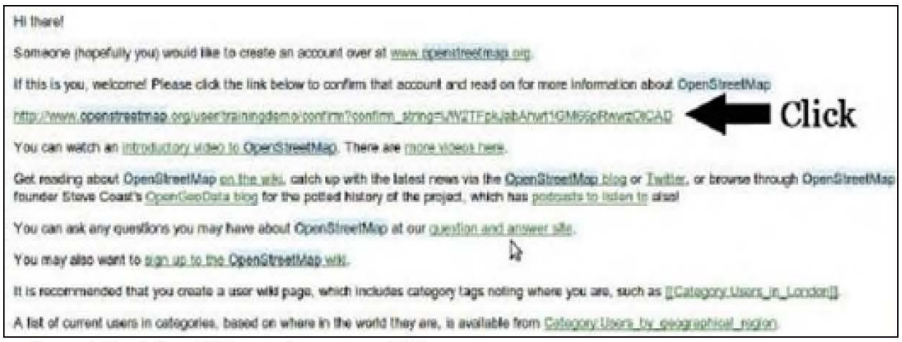


*Figure 4: Email from OSM to conifrm your new OSM account*

- ✓ A new tab or window will open and you will be asked to read OSM community concepts (such as community openness). Click on "Start to Map".
  On the OpenStreetMap home page, click *"log in"* in the top right corner. Enter your OSM username and password and click 'Login'.

- ✓ You should now be logged in and you should see your username in the upper right corner of the page (Figure 5).

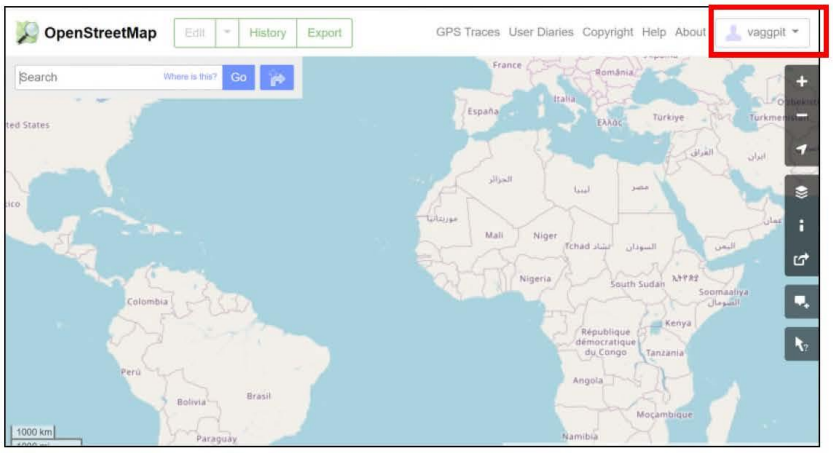


*Figure 5: Your username in OSM*

## 2 The practice walkthrough

Once logged in, click on *"Edit"*, then on the help icon at the bottom of the menu on the right (see Figure 6). If the *"Edit"* button is not clickable, zoom into the map until it becomes clickable.

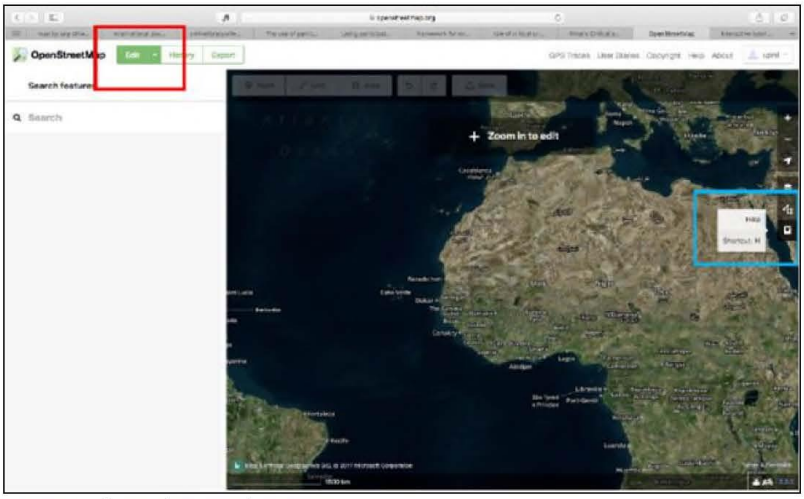


*Figure 6: Choose edit to start the mapping*

On the expanded help menu select the *"Start the Walkthrough"* button (see Figure 7). This will result in the browser window to switch to the walkthrough training mode with sample imagery (Figure 7).

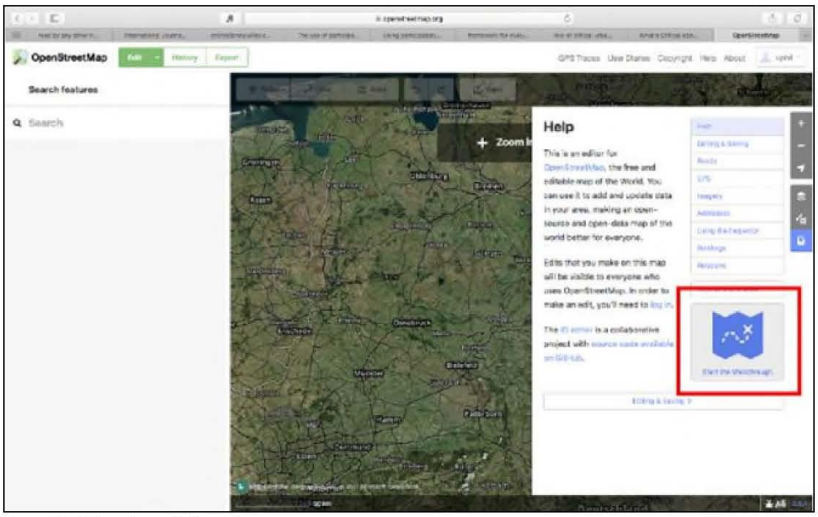


*Figure 7: Select the walkthrough*

Follow the instructions, by first reading the text and clicking the mouse as requested by the dialogue box, to test the mouse is working (Figure 8).

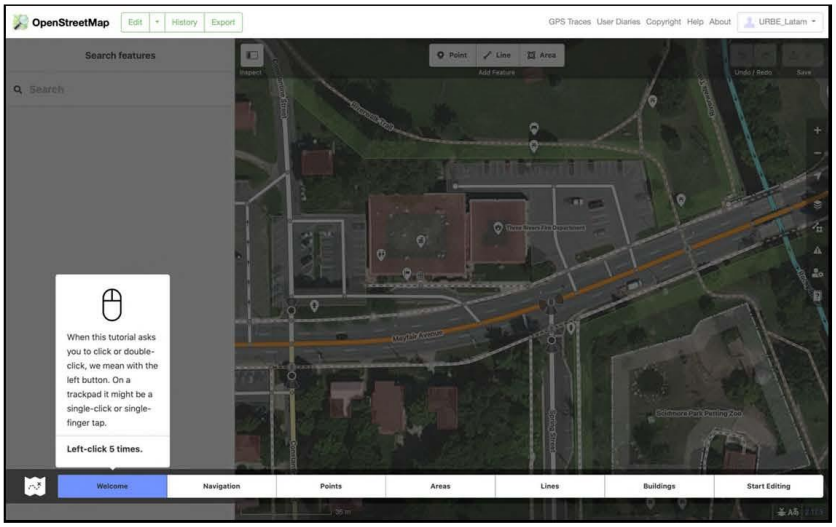


*Figure 8: Testing the mouse*

8

The rest of this tutorial follows the interactive walk through that should now be on the screen. It will focus mainly on the sections as described on the screen: navigation, points, areas, lines, buildings, and start editing. The tutorial menu is highlighted in Figure 9.

If at any point during the walkthrough you make a mistake or are stuck, you can go back to the beginning of the respective section by simply clicking on the section in the tutorial menu.

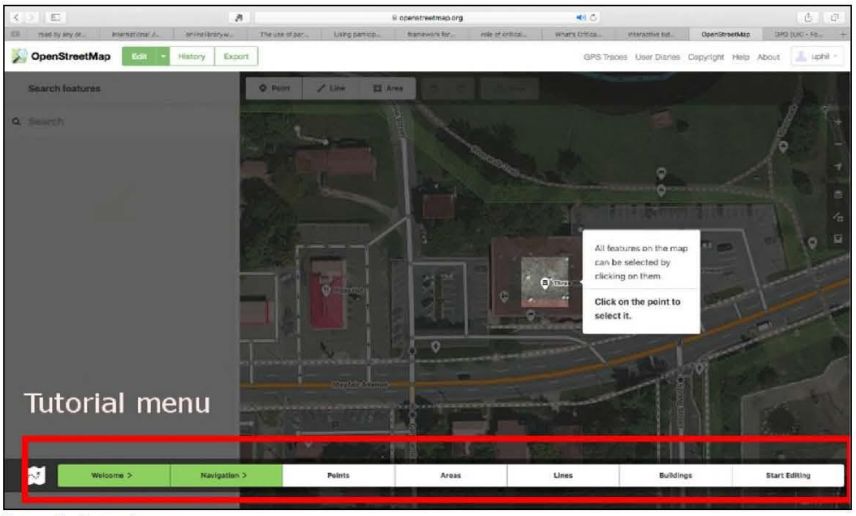


*Figure 9: Tutorial menu*

## 2.1 Navigation

The first step of the tutorial is the 'navigation' part. Click on the *"Navigation"* tab of the tutorial (Figure 9) and follow the next steps:

- Dragging the map: drag the map by holding down the left mouse button and moving the mouse the left. You can also use the arrows on the keyboard to move the map; just make sure the *"Num Lock"* button in your computer (if there is one) is off.
- Zooming: Zoom in or out by scrolling with the mouse wheel or pressing +/- keys in your keyboard, or clicking on the +/- buttons on the top right of the screen.
- Inspecting different features: read the displayed text and click on the button to go to the next when done. Click on the point as indicated by the tutorial. This opens up the features editor on the left panel of the map. The features editor contains the geographic information about the individual feature that is active. Once finished, you can close the features editor by clicking the *"x"* on the top right corner (Figure 9).

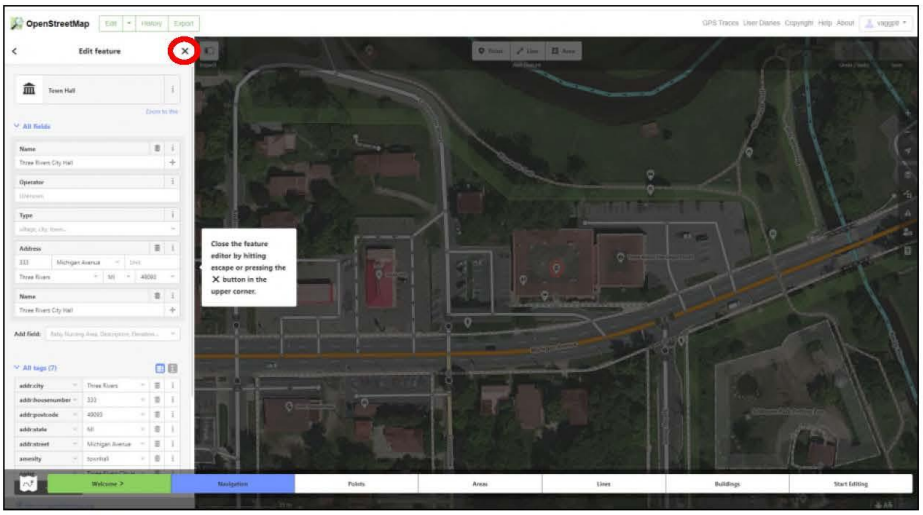


*Figure 10: Exit features and select points*

## 2.2 Points

Once you finish the navigation section click the *"Points"* tab of the tutorial panel at the bottom and Select the **"Point"** button on the top left corner of the map, as indicated in the tutorial. (Figure 11).

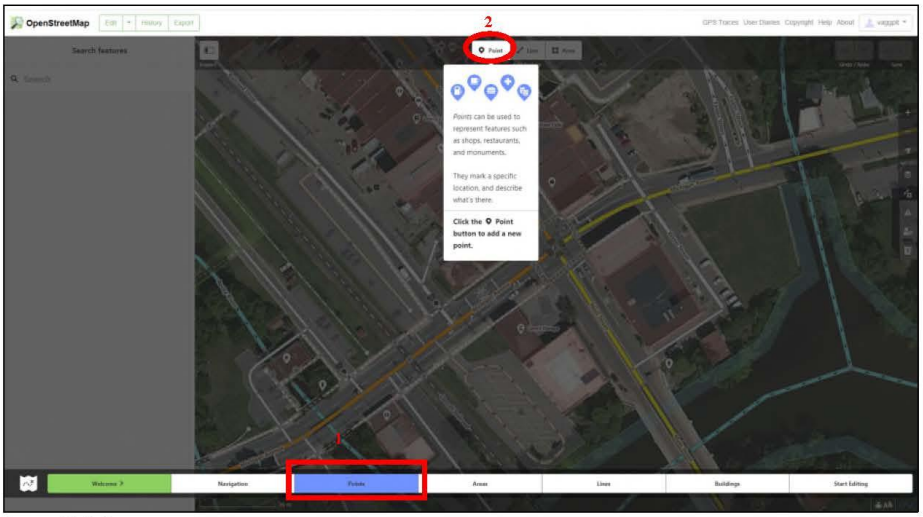


*Figure 11: Select point*

To complete the exercise, follow the next steps:

- ✓ To add a point position the mouse cursor at the feature on the map where the point should go. Left click to drop the point onto the feature (Figure 12).

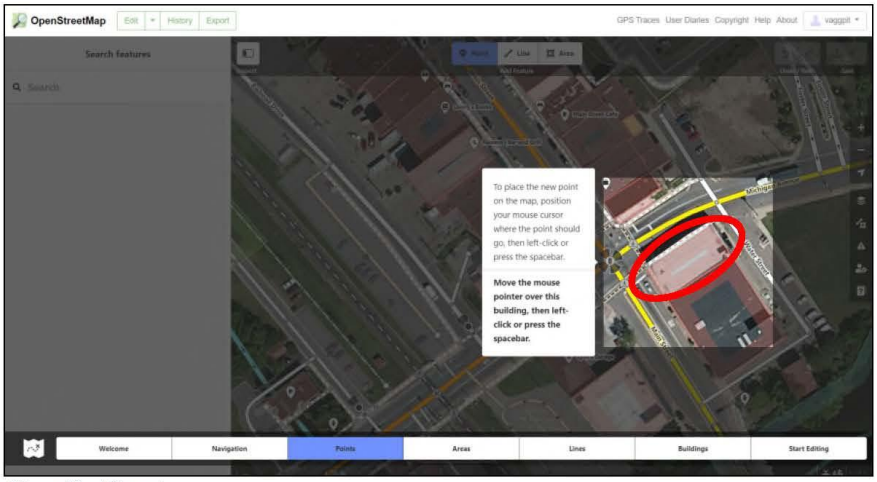


*Figure 12: Add a point*

- ✓ After dropping the point pin onto the feature, the feature (the rectangular building in this case), needs to be tagged. This is done by typing a keyword into the search field (Figure 13).

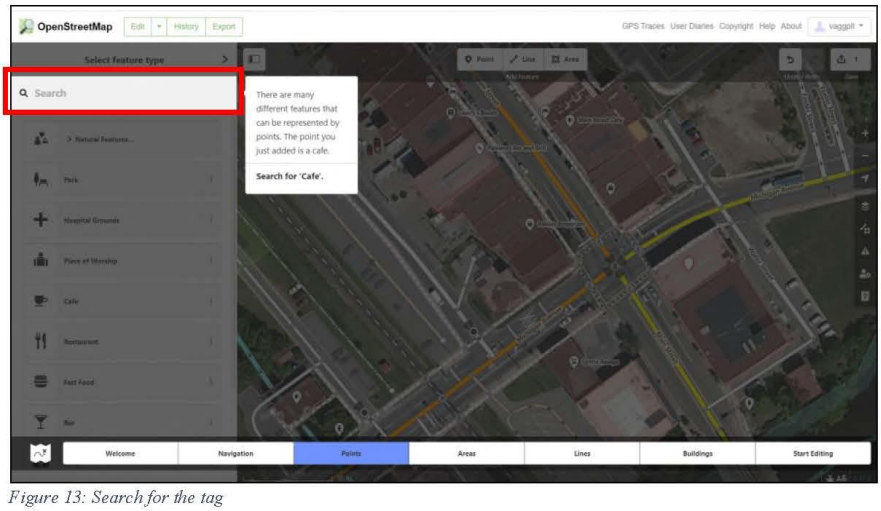


*Figure 13: Search for the tag*

- ✓ Once you have selected the most suitable tag for the feature (cafe in this case) you can add more details in the fields on the left (if you know them). When you finish click on the ✓ button to confirm the tag (Figure 14).

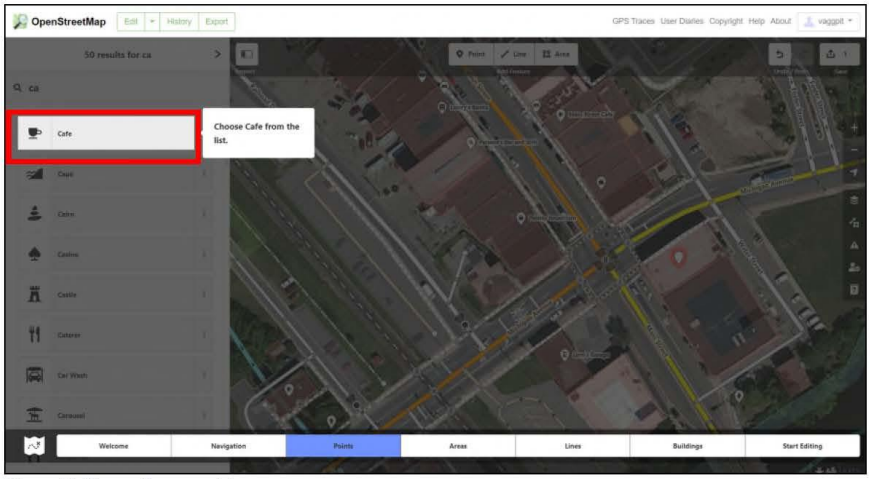


*Figure 14:Choose the correct tag*

- ✓ If you find a feature on the map of which you are sure that its details need to be changed, click on it. You will then be able to amend the details in the form on the right side. When you finish click on the button to ✓ finalise the tagging (Figure 15).

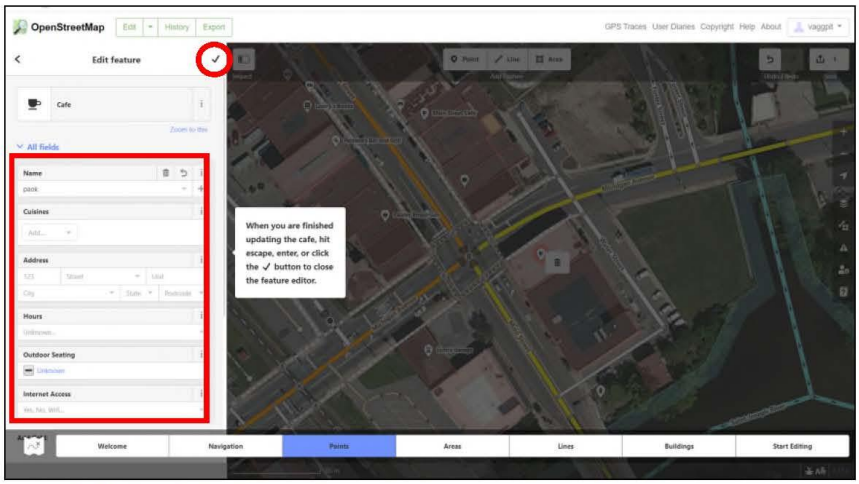


*Figure 15: Add/change details in your point*

- ✓ To delete a point right click on it, then click the *"Delete"* button on your keyboard (only if you are absolutely sure) or right click on the point and choose the 'bin'(Figure 16).

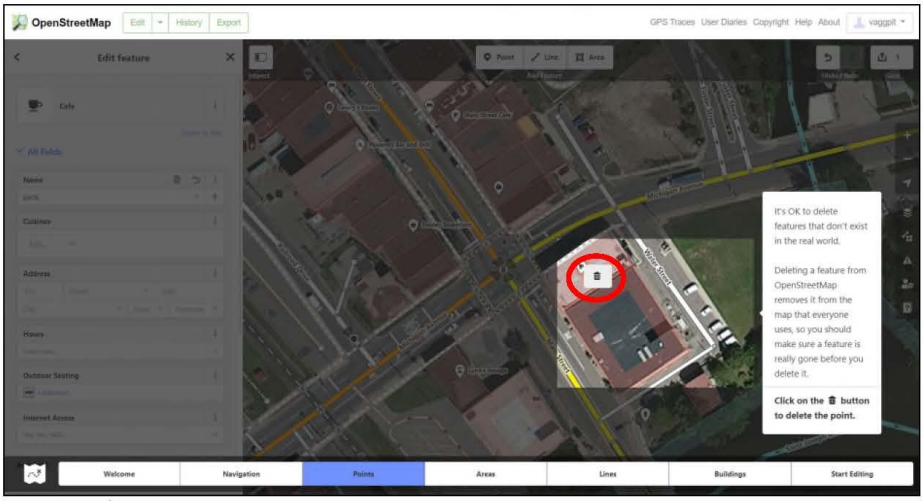


*Figure 16: Deleting a point*

Please note that the "point function" demonstrated in this section should only be used for features that you are mapping and of which you know their use. In this training exercise, the example is a cafe, but it could also be another point of interest, such as a community centre, a church, a football pitch or a health centre.

## 2.3 Areas

The next part of the walkthrough is focused on mapping 'areas' on the map. An area in OpenStreetMap may refer to any type of land-cover shown as a circle, rectangle or any other polygon, including buildings, lakes, sport facilities parks etc. To add an area *"Area"* button in the tutorial menu (Figure 17).

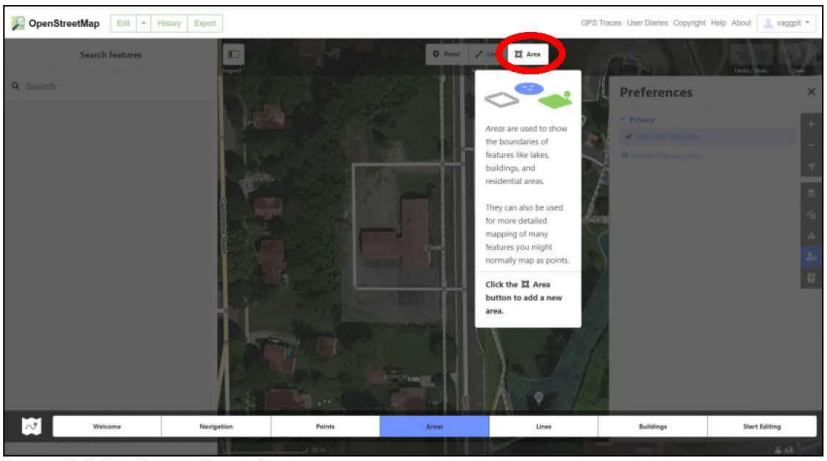


*Figure 17: Select the area feature for mapping*

Then you will be asked you to add a playground to the map. To draw the polygon click once at the corner where you want to start tracing and continue tracing the outline of the feature by clicking every time you want to mark a corner. Double-click once you arrived at the last corner to stop tracing. Now the feature will need to be tagged with a geographic description. The procedure is similar to the one followed for tagging a point and described above. In short, type in a keyword in the search field on the left and clicking on the tag that best describes the feature as shown in Figure 18 (in this case playground).

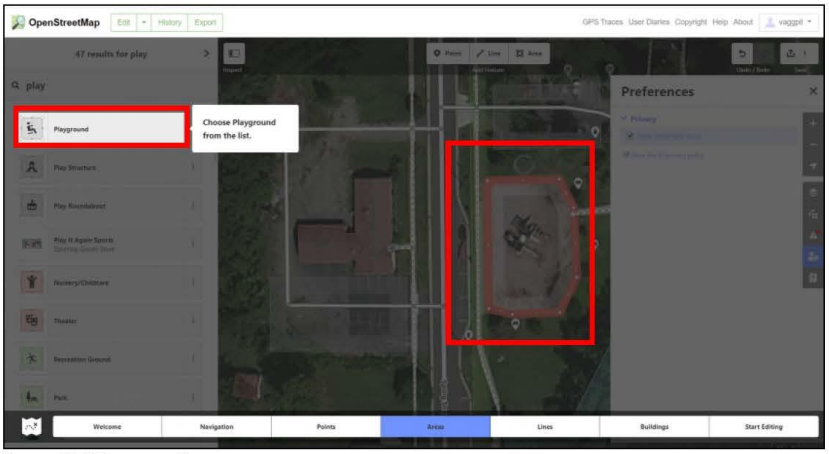


*Figure 18: Mapping and tagging an area*

## 2.4 Lines

Another element to map in OpenStreetMap is the 'line'. Lines are mostly used to map roads, rivers, railways or similar linear features. To add a line, click on the *"add line"* button in the tutorial menu (Figure 19).

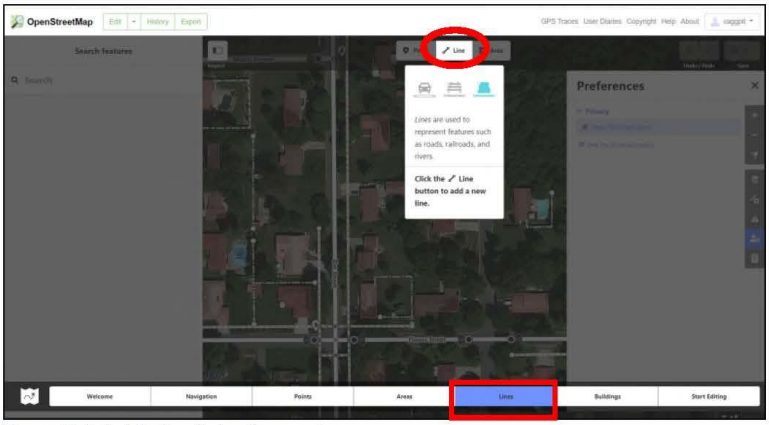


*Figure 19: Select the line feature for mapping*

The walkthrough tutorial will then ask you to add a road. After clicking the *"add line"* button click at the beginning of the section of the road you want to add. Trace along the middle of the feature (the road in this case) and click at every turn. Please note that is essential to click at every intersection between two or more roads to mark the junction. Double-click once you have reached the end of the road you want to map (Figure 20).

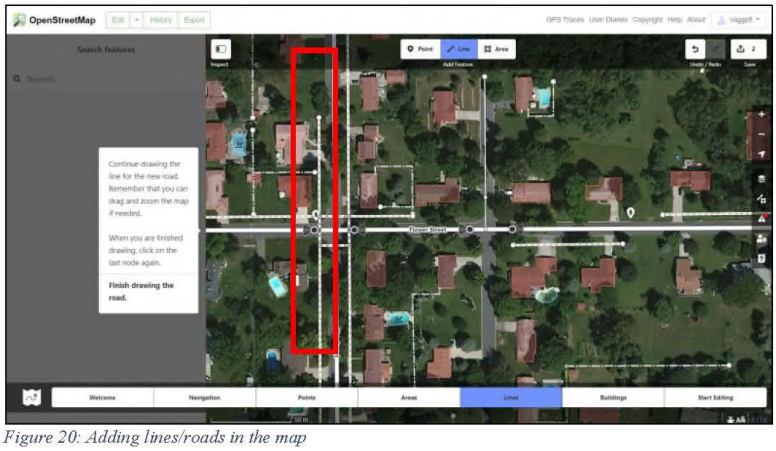


*Figure 20: Adding lines/roads in the map*

To tag the road, identify the road feature in the tagging field on the left (Figure 21). In this exercise you will be asked to use the tag 'Minor roads'.

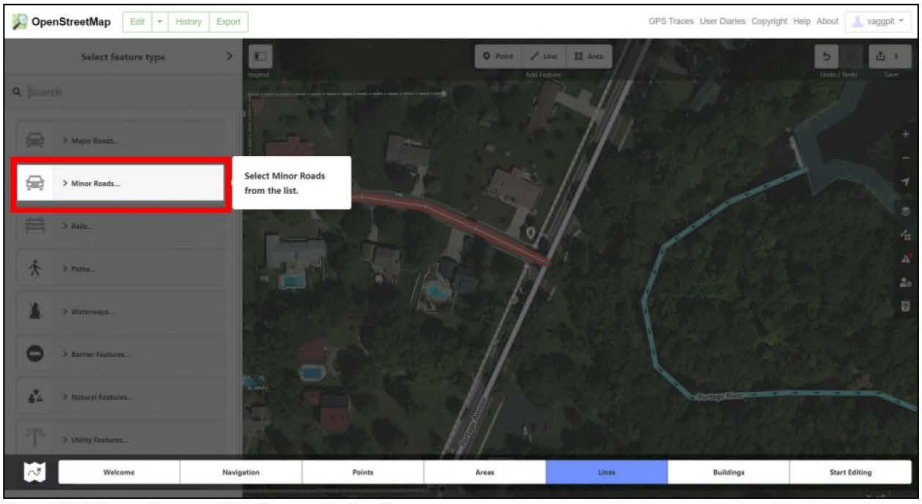


*Figure 21: Choose the correct tag for your line/road*

If you are unsure what type of road it is, click on the "I" button at the right of each type, which will provide you with more information. If you are still unsure, tag the road as "unclassified". If you know the name and other details of the road, this can now be filled in the form in the feature editor on the left. The best way to map roads is by starting with the major roads and to work your way down to minor roads. It is important not to have any roads that are unconnected to the rest of the road network, so please sure that the roads you map are placed within the wider network. Starting with the major roads first will help you do so. Figure 22 below shows some of the options you have for tagging a road (make sure that you choose 'Residential road' for the exercise).

Note for mapping dense urban contexts: in areas where buildings are close to each other or overlapping it may be difficult to identify pathways. In these cases, it is best to focus on mapping buildings, and to only map roads if you have local knowledge and are sure that there is a pathway that may be "hidden" between buildings. The roads and pathways can be added at a later stage with field-mapping.

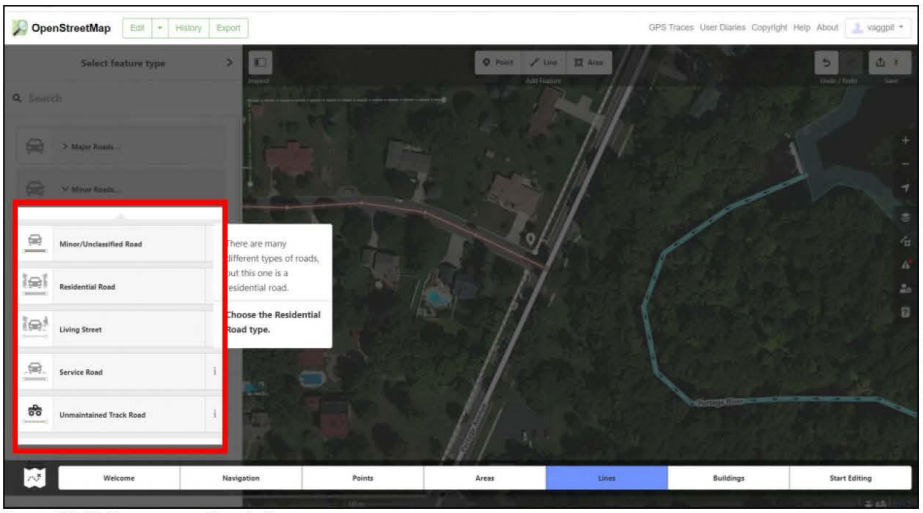


*Figure 22: Different types of available tags*

## 2.5 Buildings

The final step to complete this walkthrough is mapping buildings. Buildings are a specific type of 'areas' so in order to map one select the "Buildings" tutorial from the menu (see figure 5.7) and then select "Area" as indicated in Figure 23.

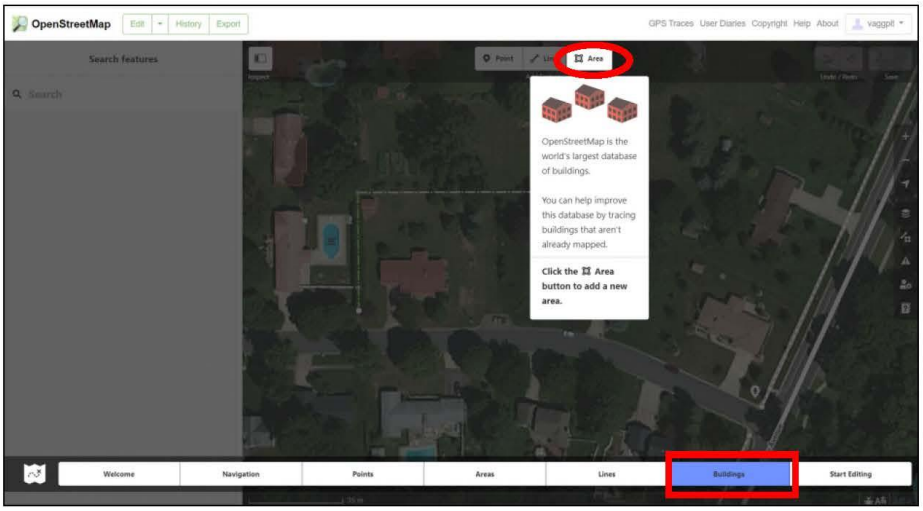


*Figure 23: Select 'area' to start mapping your building*

Then click once at the corner where you want to start tracing and continue tracing the outline of a building by clicking every time you want to mark a corner. Double-click once you reached

the last corner to stop tracing. To tag the building, choose the *"building features"* option in the feature editor on the left (Figure 24).

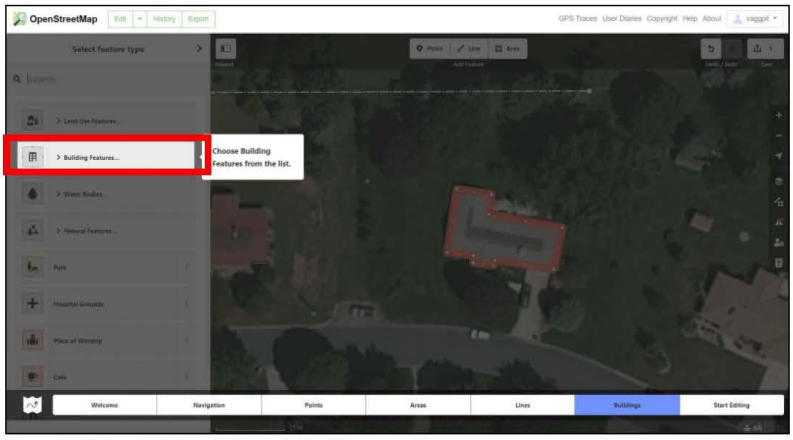


*Figure 24: Choose 'building features' to find the correct tag*

In general, it is best to tag unknown buildings as *"Building"* as it may be difficult to tell from the satellite imagery whether the building is a house or a commercial building. In this example however, it clearly is a house so select *"house"* from the dropdown menu (Figure 25).

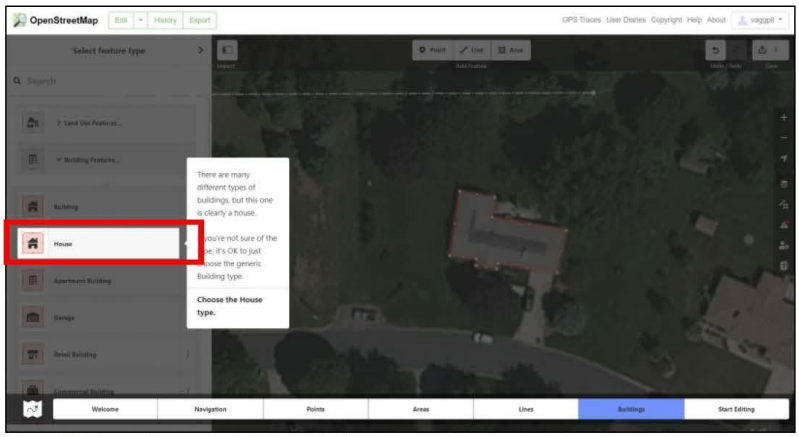


*Figure 25:Choose the correct tag for your building*

You can then add more details in the feature editor. To square the corners of the building, right click on the building and select the *"square"* symbol or press the 'Q' button on your keyboard. This is important, especially if the maps are to be printed out. The same sequence applies for

round buildings. To round your building, right click on the building to select it and then choose *'circularize'* or click the 'O' button on your keyboard (Figure 26).

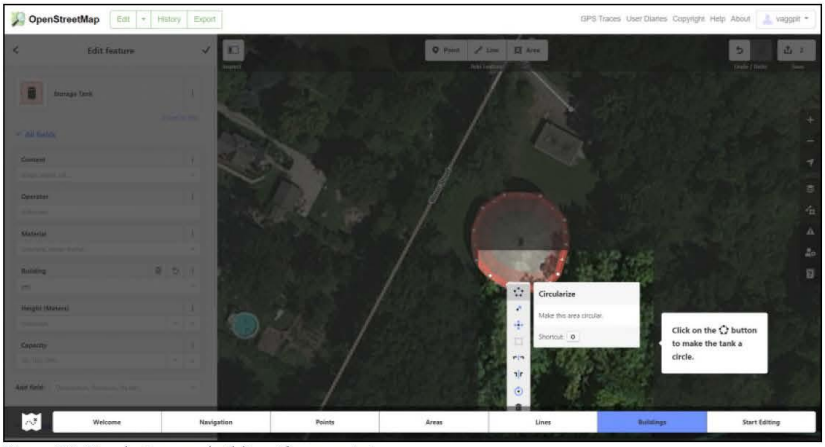


*Figure 26:Circularise your building, if appropriate*

## 2.6 Saving your work to OpenStreetMap database

For the walkthrough, it is makes sense to disable the save button so that the edits done during the training will not be saved (i.e. uploaded to the online database). When (and if) you want to save your edits, click the "Save" button. The panel on the left will show the upload panel (see figure 27).

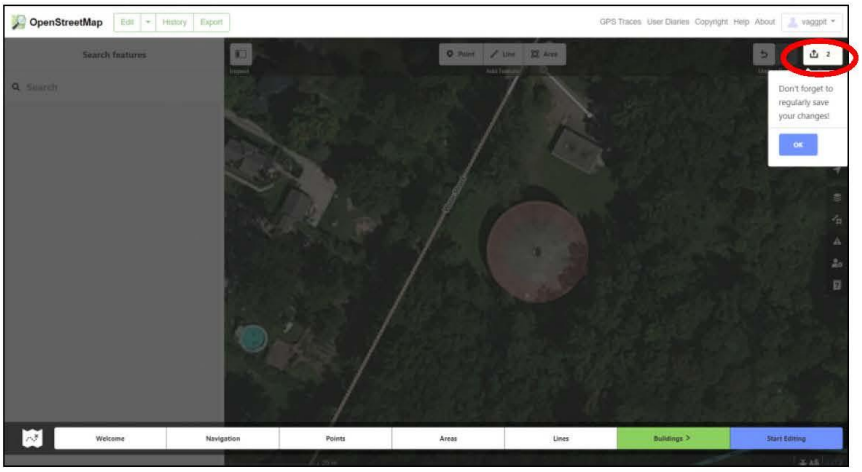


*Figure 27: Save and upload your changes*

In general, it is advisable to save whenever the box next to the saving button is at nine or higher, in case there are issues with the internet connection. Enter a comment in the "Changeset Comment" box about your edits (for example, with a hashtag referring to your institution/organisation and "added buildings"), tick the box with the text *"I would like someone to review my edits"* and click *"Upload"*.

**Key learning points:**

The main elements used for mapping:

- Areas, which includes buildings; remember to "square" or "circle" them.
- Lines, such as roads and linear water bodies;
- Points, such as drinking water outlets, trees, sports pitches, children's play areas, etc.

The feature menu on the left to assign a description of the feature you have just mapped:

- For buildings, if you don't have information about their character: tag as "building". Only assign a specific use (such as "house") if you are absolutely sure.
- For roads, if you don't have any specific information about their character, tag as "unclassified".
- Only map footpaths if you can see them from the imagery or if you have local knowledge.

Remember to regularly save your edits while mapping.

**Congratulations, you now are ready for mapping on OpenStreetMap!**

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# 3 Mapping on the Tasking Manager (TM)

## 3.1 Log in, account information and email address confirmation

Please go to: https://tasks.hotosm.org/. Click on log in (Figure 28).

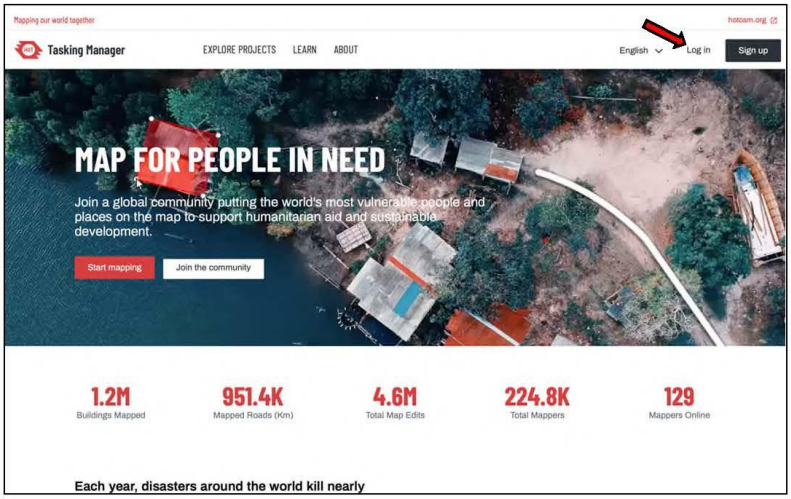


*Figure 28: HOT Tasking Manager Landing Page*

You will be redirected to OSM. Type in the OSM account credentials you created before (see figure 8).

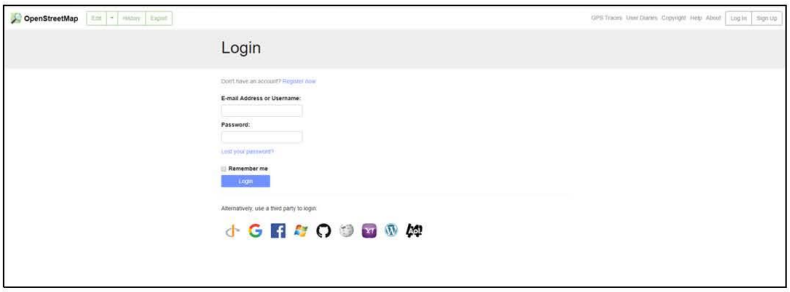


*Figure 29: typing in the OSM credentials for logging into the TM*

You will then be asked to allow the Tasking Manager (TM) access to your OSM account. Please click on "Grant Access" (Figure 30).

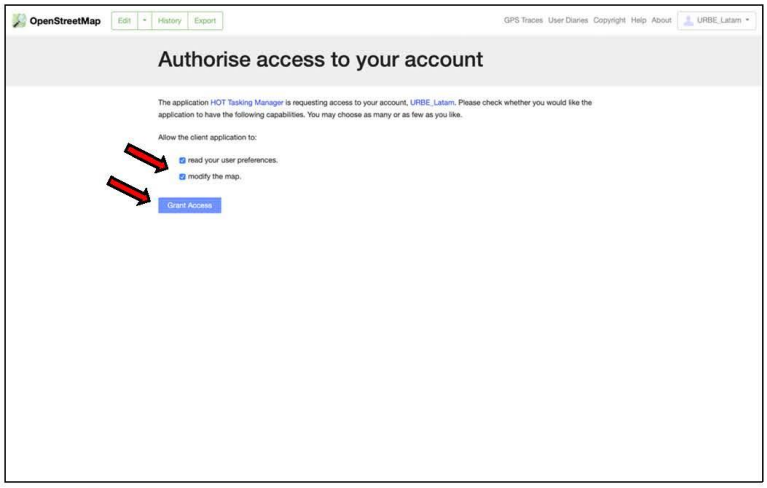


*Figure 30: Authorising the TM to access your OSM account*

Once you granted access you will be referred back to the TM, to fill in your account information there. You will be asked for your personal information, including your email address, and causes that are of interest to you (Figure 31). This page also allows you to set your language if it is not already displaying in the correct language. When you are finished, click "save" below the personal information box.

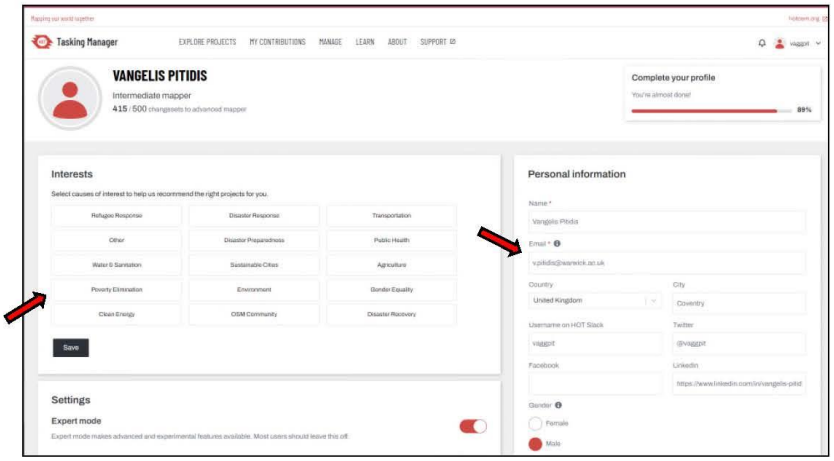


*Figure 31: Adding account information*

Please now open another tab and check your mailbox, where you will find an email confirming your address (Figure 31). Click on the link as indicated below, and switch back to the TM tab.

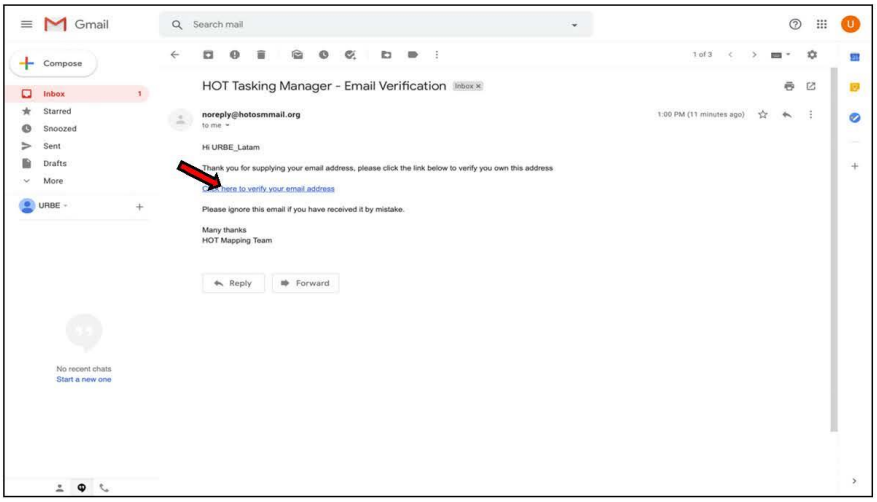


*Figure 32: Confirming your email for the TM*

## 3.2 Choose your project

Once you are back on the TM tab, click "Explore Projects" (Figure 33).

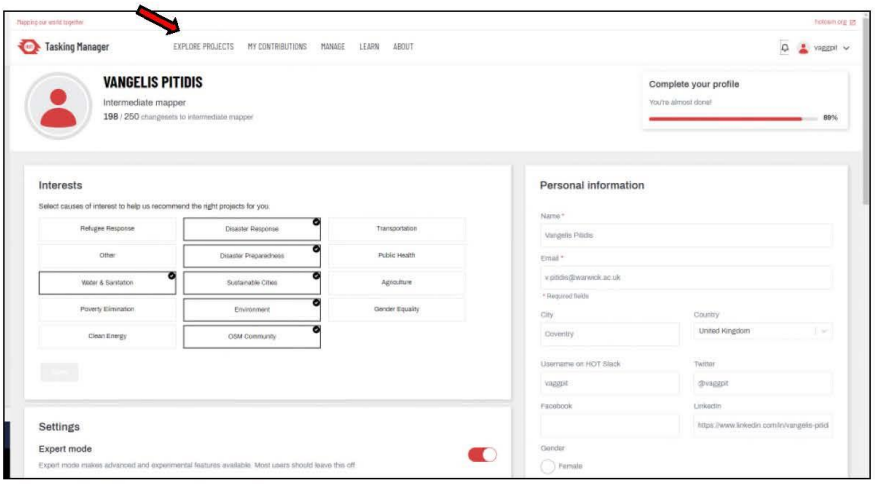


*Figure 33: Clicking on Explore Projects*

In the following page you can see all the current mapping projects on the TM. Click into the 'Search Projects' field (Figure 34).

Here you can explore different projects sorted by urgency for data provision, level of mappers required and other. For the purpose of this exercise please type '3967' and you will be directed to the chosen project for mapping, in San Juan de Pasto, Colombia (Figure 35).

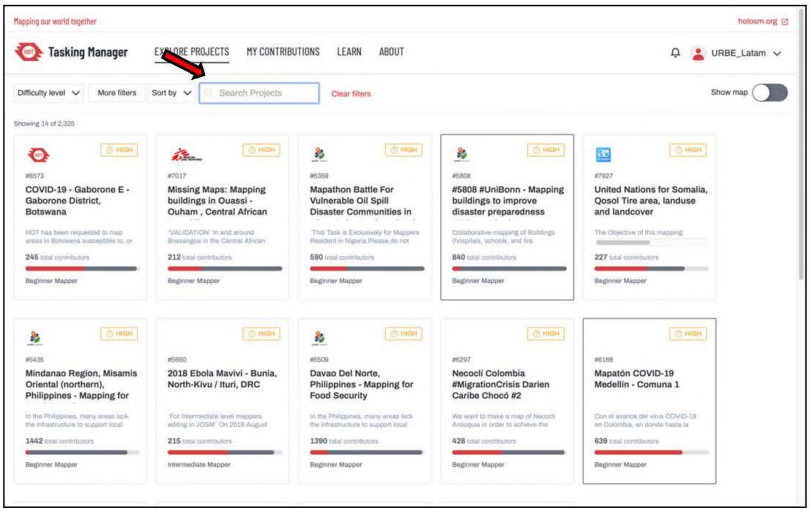


*Figure 34: Clicking on "Search Projects"*

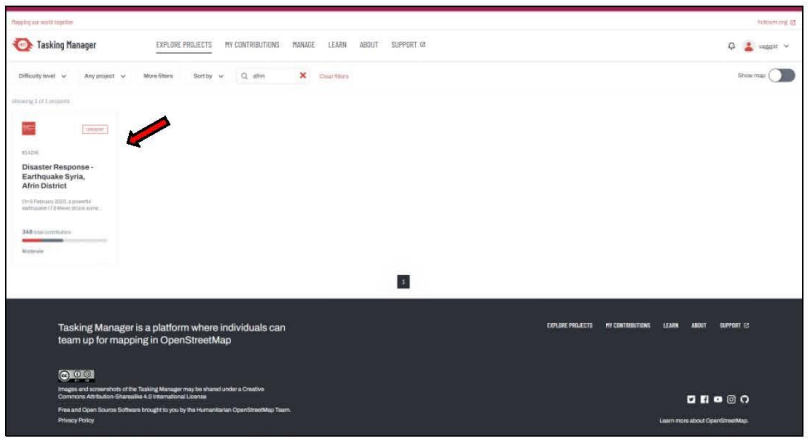


*Figure 35: Finding your project with the project number*

Once you clicked on the project you will arrive at the project landing page (Figure 36). Click 'Zoom to Tasks' (as shown in figure 36) and you will be directed to a zoomed screen of the project. Please read the project background description, then click on "Contribute" at the bottom right side of your screen and the next screen will emerge (Figure 37).

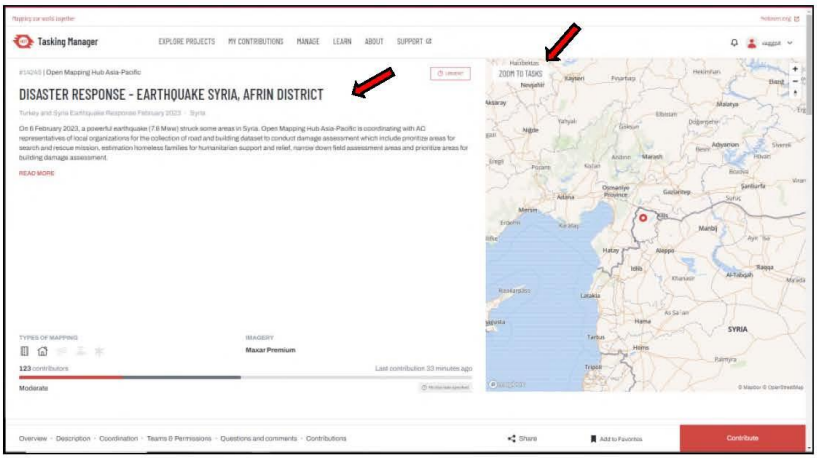


*Figure 36: The project landing page*

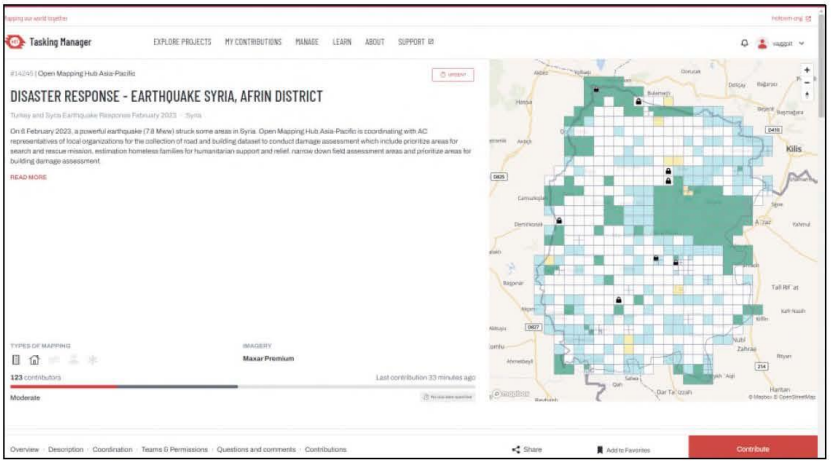


*Figure 37: the detailed project page with the legend for the mapping status of the task squares*

This part (see Figure 37) of the project page provides the instructions for mapping, including the imagery to use, and the objects to be mapped. Please spend some time reading the instructions, as different projects require different things to be mapped. **For the purpose of this exercise, we will focus on mapping ONLY buildings and roads, so please do not map roads, or any other features!**

On the right side, you will see the area that is to be mapped, divided into tasks (squares). The legend describes the meaning of the colour of each square. These are the following:

- White tasks squares colour are 'available for mapping'. These are tasks which have not been mapped as part of the mapping project.

- Turquoise means that square is ready for validation. This is the next stage of mapping where an experienced mapper assesses the technical (not geographical-contextual) validity of the task that has been mapped.
- Yellow means someone has started to map but it still requires further mapping before the task is ready for validation.
- Green tasks are mapped and validated by a more experienced mapper;
- Grey tasks mean that the task is unavailable, for example if someone tried to map that task but found that the imagery was not good enough for mapping (for example if there is cloud cover in that specific task).
- Red tasks: priority areas for mapping (not the case for this project as the entire area of the neighbourhood is of equal urgency).
- A task with a lock means someone else is currently working on that task.

To select a task you have two options. The first one is to click on a specific task that is either white or yellow. This is a good option if you are familiar with that particular area of the entire area that is to be mapped, or, of course if you have a preference for this particular task for any other reason. In this case, click on the square you want to map if it is white or yellow, and then on the red button on the bottom right corner "Map selected task".

The second and recommended option is random selection. To do that, just click on "Map a Task" (the red button on the bottom right corner; no need to select a task square within the map on the right). Moreover, before starting the mapping process, please make sure that your mapping editor is changed to 'iD Editor', as designated in Figure 38 below.

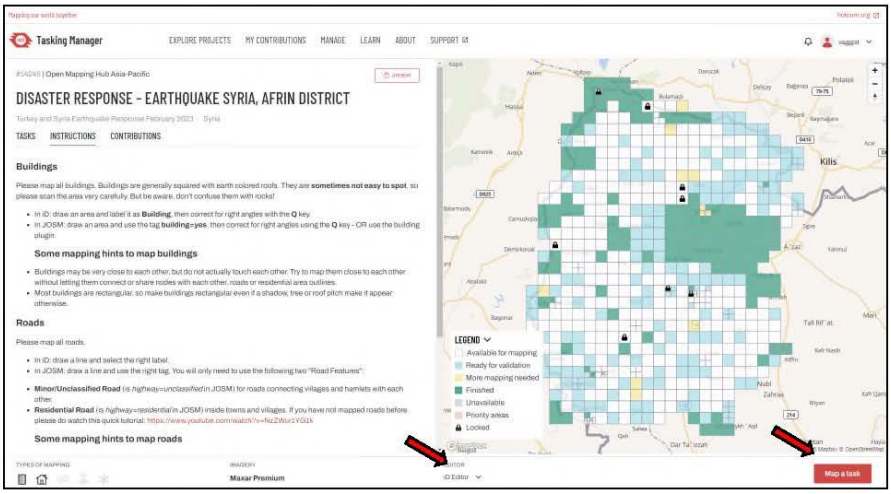


*Figure 38: Starting to map*

## 3.3 Mapping


*Figure 39: the pink task square*

Now the editor for mapping the task square will open (please see Figure 39). The pink/purple square on top of the imagery delineates the task you have selected. For mapping, please stay within this square.

Now is the time to use your new cartography skills you acquired earlier! If a feature (building or road) is not entirely in your square but stretches outside your purple square, feel free to map it. Remember to tag the buildings you map (building, house etc.) and also add any other information about them you might know (not personal information about specific people or groups of people though!), for example the number of floors of a building or the name of a restaurant. Once you finish mapping a building press the 'Q' button in your keyboard to square it or right click on it and the choose 'square'. Remember to upload your changes! Once you map about 10 features (you will see the number on the top right corner of the image) click 'Save' to upload the changes to OpenStreetMap, followed by the blue "upload button on the right panel. (see Figure 40 below). This is very important.

For this project there is no need to click on the tick-box for someone to review your changes, as this will be done in any case.

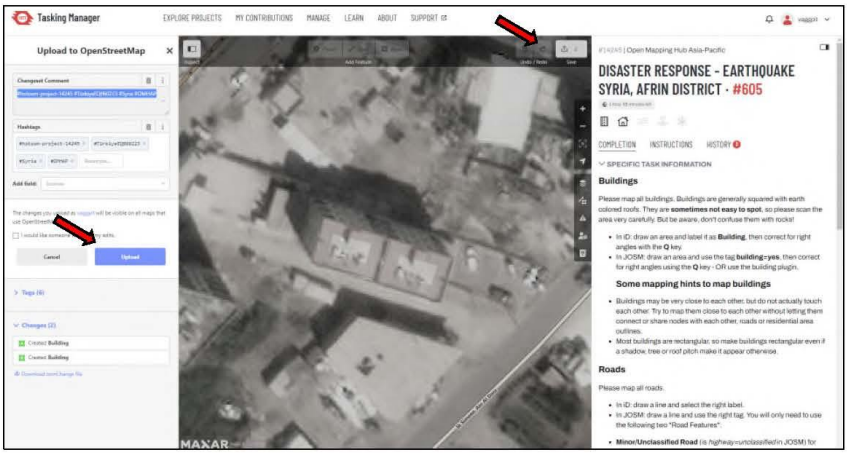


*Figure 40: Saving your work*

If you feel you made a mistake you can always delete that feature by clicking on it and then right-clicking, and selecting the bin symbol. If you lose connection you can always come back to the TM. Although unsaved changes will be lost (which is why it is important to save regularly) you can always select a new task to continue mapping. It might be different to the one you were mapping on, but this is fine – what matters is that the neighbourhood is becoming visible, which happens as long as we map any area that is available for mapping (white or yellow).

If you find the imagery is bad, click on "the imagery is bad" in response to the question "Is this task completely mapped?" on the panel to the right. The preferred imagery selected for this particular mapping task is 'Bing and it is relatively clear, thus this should not be the case. If for these projects you find a black space instead of imagery, please try first reloading the page. If that has not improved the imagery, slightly zoom out and back in. If the imagery is still black, please click on "select another task", and you will be redirected to the previous page to select a new task. If the new task is still black, please leave a comment in the comments box. The project manager will look at this and trouble-shoot.

## 3.4 Finishing with mapping in a task

You can stop mapping the task at any time. To do so, please click on one of the options in reply to the question on the panel to the right ("Is this task completely mapped?").

a. If there are still features to be mapped (especially buildings), click on "No". This means that the task you have just been mapping will be available for another mapper to continue. It will helpful for other mappers if you leave a comment at the comment section regarding the changes you have made (for example, "added buidlings") or any problems you had with mapping (for example, if there are many previously mapped features which need to be changed to match the imager used in this project (this could be the case if someone has mapped the area previously on OSM with a imagery from a different date). Then click on "Submit Task" on the top right in the middle panel.
b. If you believe that the Task square is completely mapped, click on "Yes" in response to the question on the panel to the right ("Is this task completely mapped?"). Then click on "Submit Task" on the top right in the middle panel.
c. If for some reason you would like to map a different task, please follow the same sequence as a. or b. (depending how if the task is completely mapped or not), and then click on "Select another task".

We hope you enjoy mapping and continue with this new activity. There is a global community around OpenStreetMap and humanitarian and development mapping, and we hope you will join us.

# 4 More resources

- For more information on OSM as well as technical questions (for example which tags to use), please also have a look at the OSM Wiki: https://wiki.openstreetmap.org/wiki/Main_Page
- You can also find extremely helpful Tutorial videos on how to map in HOT OSM platform here: https://www.youtube.com/watch?v=Phwrgb16oEM&list=PLb9506_-6FMHZ3nwn9heri3xjQKrSq1hN
- There are several mapping projects that you can explore, some of which are often urgent. Remember, if you have time, there is always something to map!

It's always nicer to map in a crowd, so you mightbe interested in the following:

- Geochicas, a group of women who do mapping in OpenStreetMap and work to close the gender gap in the OpenStreetMap community.Geochicas have members in many continents: https://wiki.openstreetmap.org/wiki/GeoChicas

- Missing Maps: a humanitarian project that preemptively maps parts of the world that are vulnerable to natural disasters, conflicts, and disease epidemics: https://www.missingmaps.org
- YouthMappers, an international consortium of university-level student mapping clubs, with local chapers in universities of various countries: https://www.youthmappers.org

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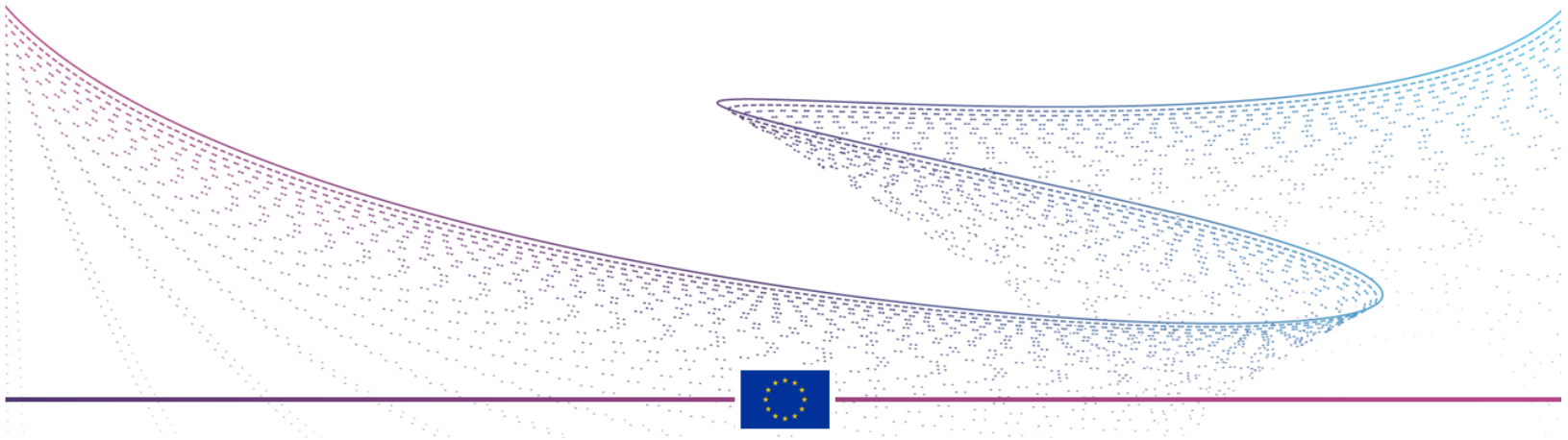
## 8.2 ANNEX 2 - Training for the participatory mapping exercise

# TRAINING FOR THE IMPLEMENTATION OF A PARTICIPATORY MAPPING EXERCISE LITE



**RiskPACC**
Integrating Risk Perception and Action to enhance Civil Protection-Citizen interaction

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101021271*

# CONTENT

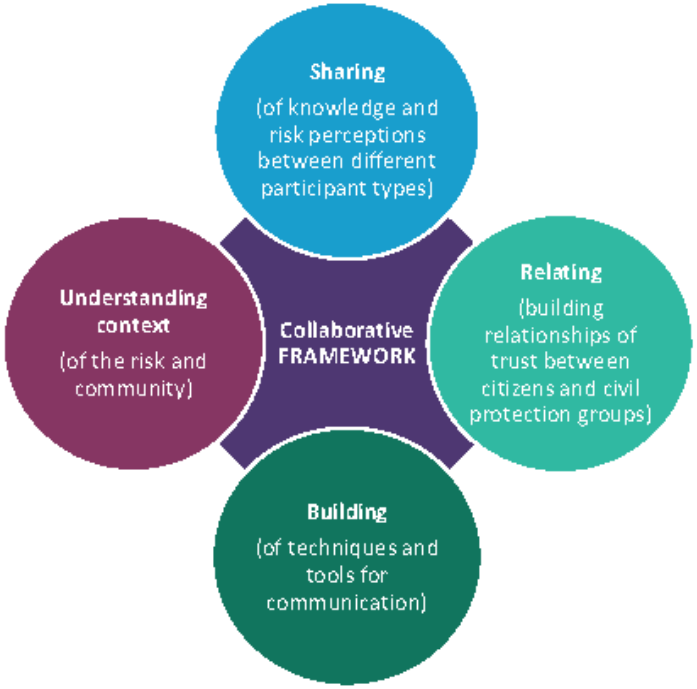
This document provides a table of prompts and activities to guide the process of the participatory mapping exercise that will be conducted in your workshop.
This is designed to be a useful tool to aid in your workshop, but you should feel free to adapt it to your needs.
It is a guideline to help us meet our objectives and not a formal set of instructions.

This document identifies:

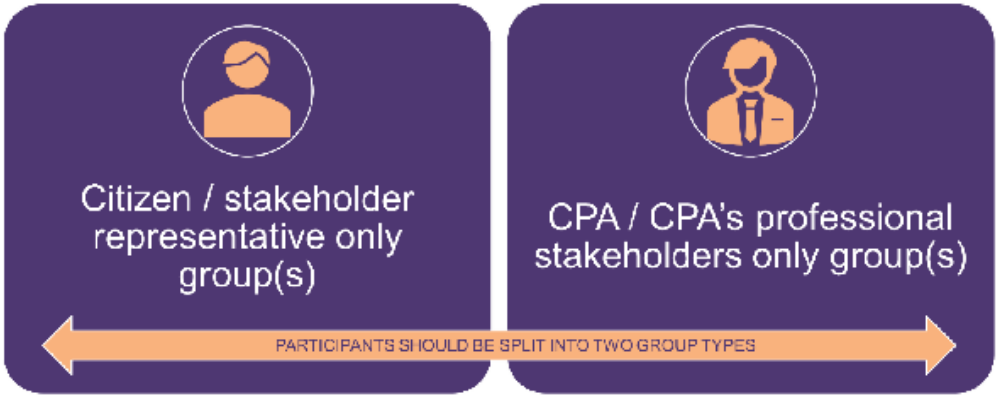
1. **General questions the facilitator can ask** the workshop groups.
2. **Suggested activities** that the participants in each group will be doing.
3. **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

# AIM

- The aim of the exercise is to facilitate discussion and activities amongst participants that address each of the modules of the riskpacc framework, and so help you to close the risk perception-action gap between yourselves and your citizens



# DESIGN THE GROUPS




- If you find you have an imbalance in the number of participants of different types, you may wish to have more than one of each group type (for example if you have many more CPAs than citizens, you could consider having several CPA-only groups, and just one citizen-only group).
- Participants from the original separate group types should be combined into mixed groups that contain both citizens and CPAs

# ROLES

Numbers of participants will vary and so it may be necessary to combine some roles but, ideally, each group should have the following roles assigned

## Facilitator

- The facilitator role should probably be the Case Study partner lead or similar. Using the table of prompts as a guide (see end of this document), the facilitator will be asking the questions and then when the groups are doing their work, they can walk around observing, listening and taking notes to provide some overall reflections for later analysis.

## Observer / Notetaker

- The Observer Notetaker using the table of prompts as a guide should take notes on the specific discussions that happen within their group, and along with the facilitator should help lead the discussion on each table.

❖ If a host member is not available to take notes, then each group should nominate a participant group member to do this

## Reporter

- In addition to the Facilitator and Observer Notetaker, each group should nominate a Reporter.
- The Reporter is a participant who will report back on their group's work and discussions. One group can have more than one reporters.

# FACILITATOR DUTIES

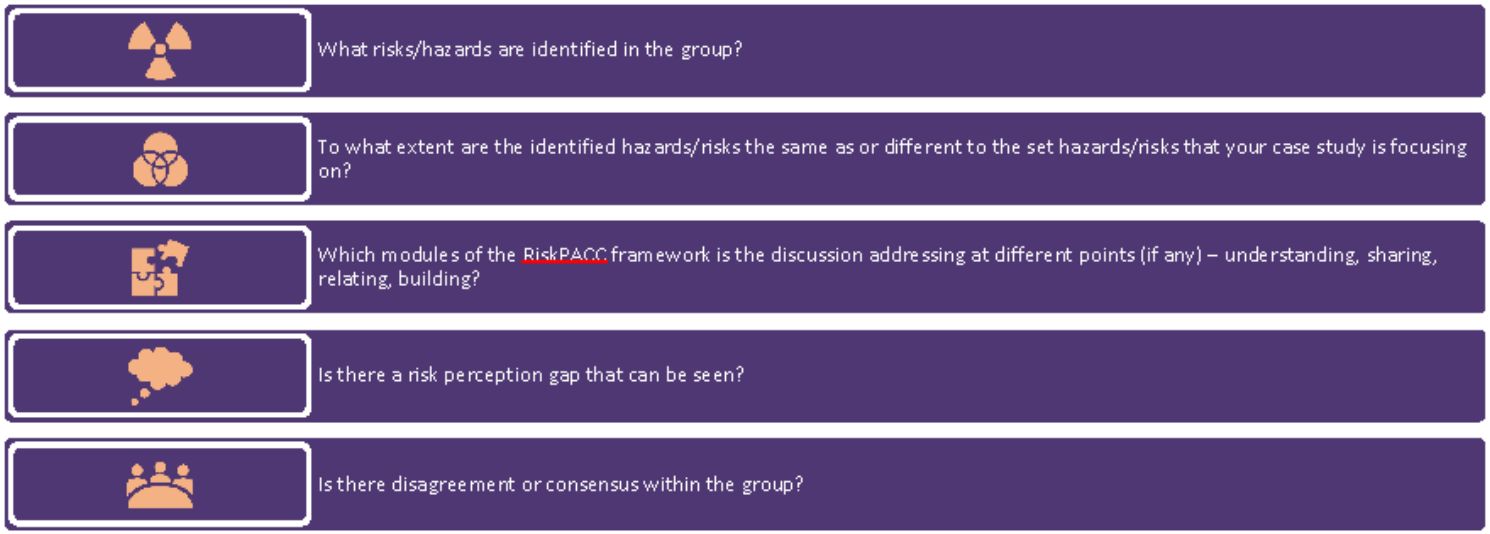
How the workshop is working

How well the discussion is going

Are there any differences or conflicts within and between the groups

Are some participants talking too much or too little (e.g. it is common in mixed gender groups for women to speak less than men; facilitators should try to think of ways to even out the discussion if this is happening)

# OBSERVER / NOTETAKER QUESTIONS



# DESIGN

**Design general questions** to support your case study and your project, and activities according your needs.

Share a **notetaker** on each table.

Each table should have a microphone to enable audio recording of the discussions to provide a transcript for later translation. Conference microphones are best.

Keep in mind to set up mixed groups for the implementation of the workshop.

During the workshop, the groups will have discussions separately, and then come together for whole-group discussions. The table of prompts below indicates when participants should work in their groups and when they will participate in discussions as a whole group.

Provide a short questionnaire for participants to complete before the workshop (at home) and again during the workshop after the task has been completed, that will measure things like risk perceptions and trust, so to evaluate any changes in this numerically.


MATERIALS
An A0/A1 size print out of the target map area (essential that each group has its own copy)
Sticky notes
Pens/markers
Flip chart
Paper
A microphone for audio recording

WELCOME

## Facilitator Question Prompts

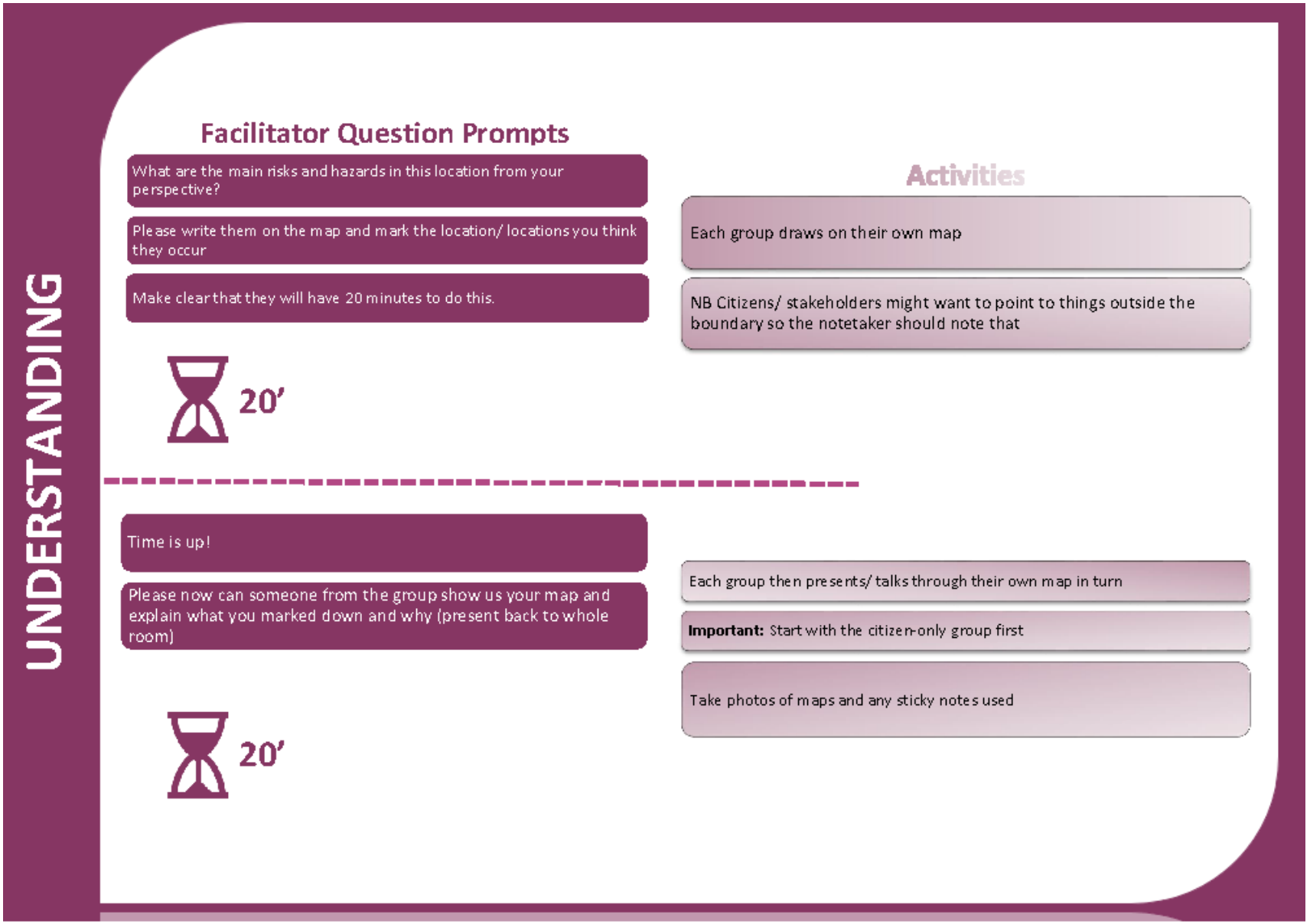
- Welcome everybody to the Co-Creation Lab
- Present the scope of the meeting
- Tour the table (name, organisation or particular interest group you are representing)
- Suggest for everyone to express his opinion. Everybody here has a voice and it is of equal importance. Everyone is an expert in his/her own way
- Ask the participants for initial questions that they have

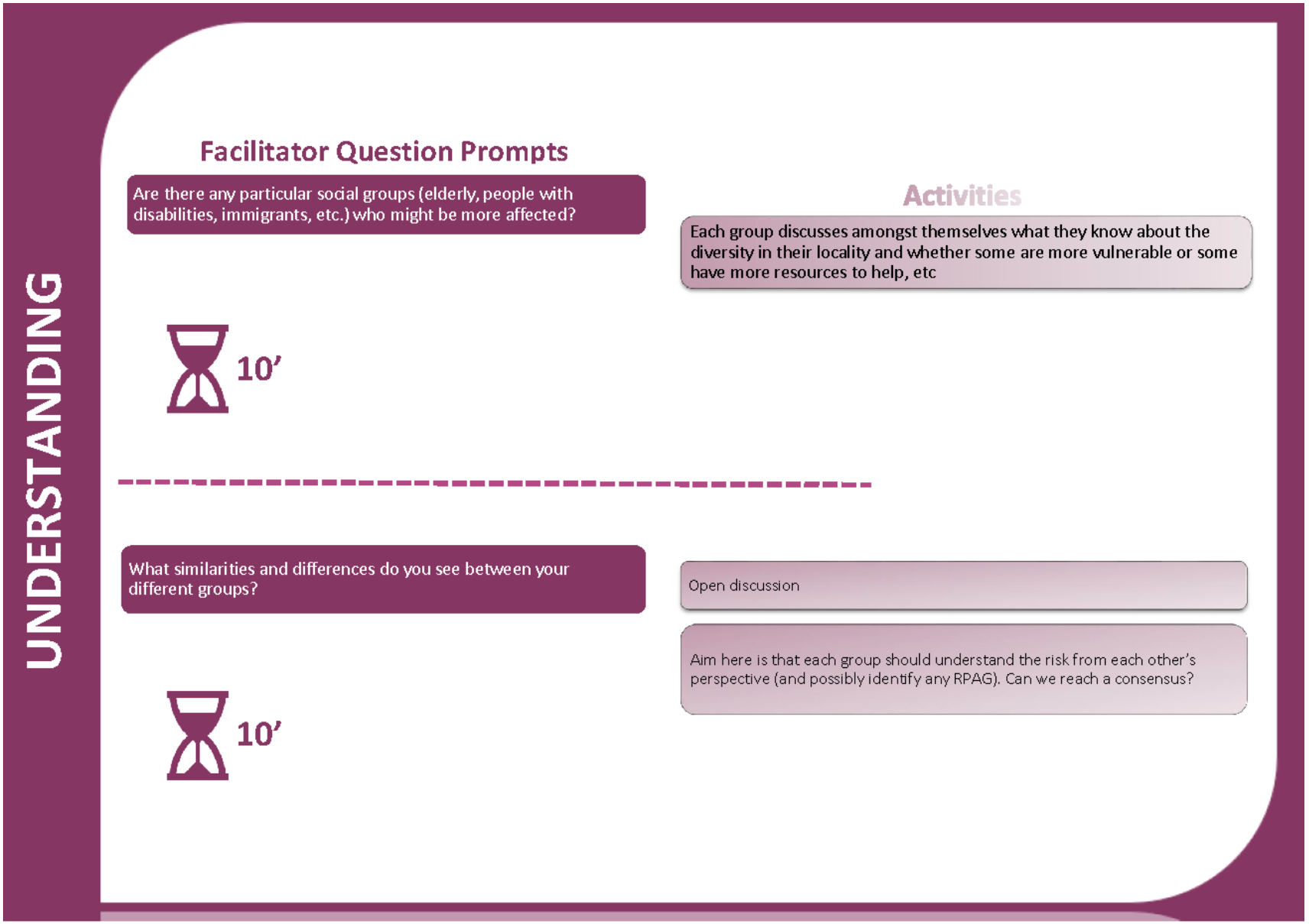
20'

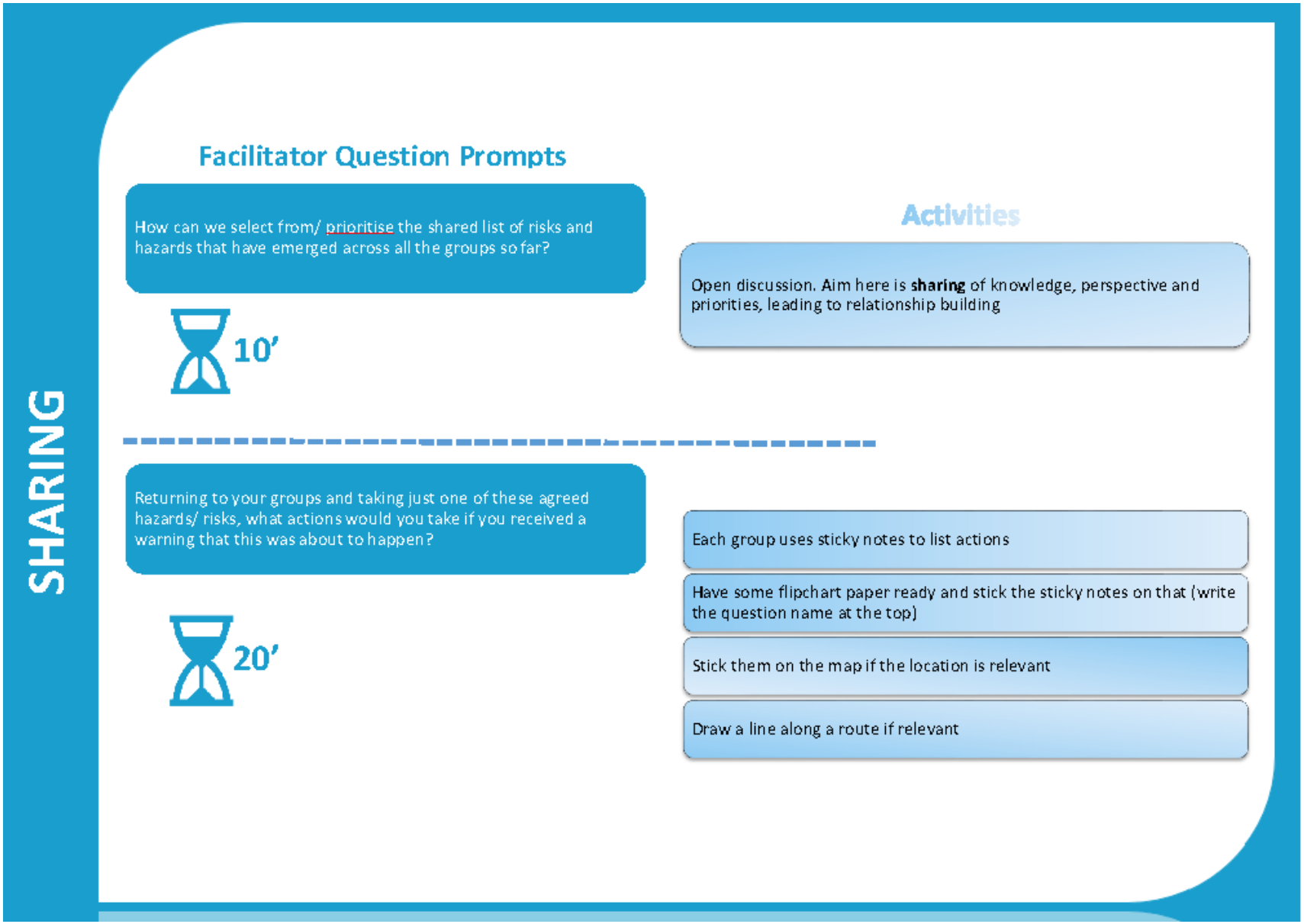
## Activities

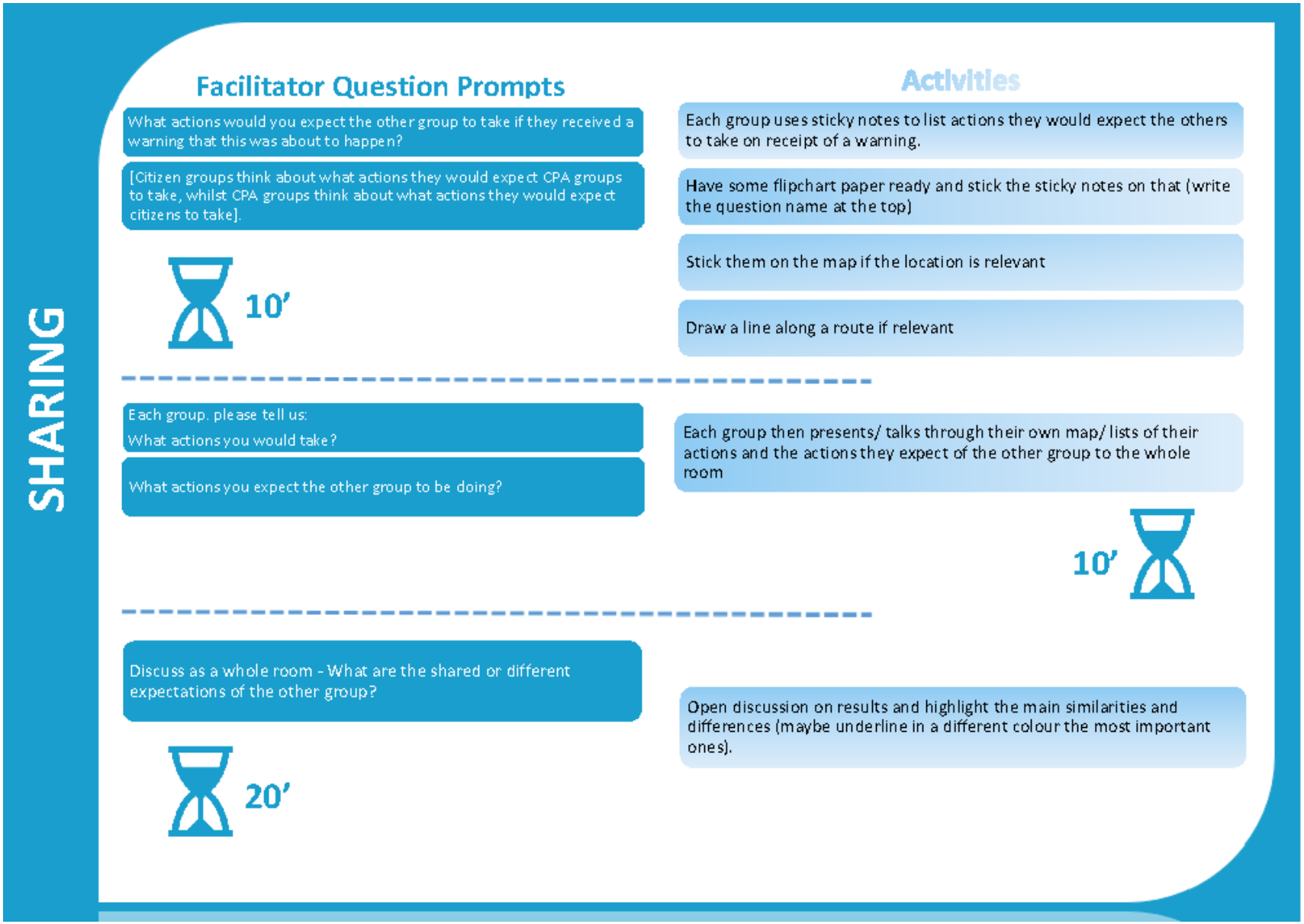
- Meet and greet – view and sign GDPR statement and consent form
- Brief introduction describing the scope of the meeting
- Who is in the room? Self introductions
- Share the values of the meeting based on democratic and equality principles. Women and minority groups may need more encouragement to speak
- Go over the programme for the sessions (show on a slide or provide a handout)
- Deal with any initial queries


WELCOME
Facilitator Question Prompts
Explain how the teams are formed and that one representative of each group will be responsible to communicate the findings of the questions and the exercises.
Explain the map that is given to them and the scope of the task exploring the risks in that area
10'
Activities
Split into mixed groups or already have their names on the table in the places you want them
Encourage them to volunteer or choose a reporter
Place agreed location map on table (A0/A1 size so everyone can gather around and write on it. Provide enough marker pens for everybody)


UNDERSTANDING
Facilitator Question Prompts
What are the main risks and hazards in this location from your perspective?
Please write them on the map and mark the location/ locations you think they occur
Make clear that they will have 20 minutes to do this.
20'
Activities
Each group draws on their own map
NB Citizens/ stakeholders might want to point to things outside the boundary so the notetaker should note that
Time is up!
Please now can someone from the group show us your map and explain what you marked down and why (present back to whole room)
20'
Each group then presents/ talks through their own map in turn
Important: Start with the citizen-only group first
Take photos of maps and any sticky notes used


UNDERSTANDING
Facilitator Question Prompts
Are there any particular social groups (elderly, people with disabilities, immigrants, etc.) who might be more affected?
Activities
Each group discusses amongst themselves what they know about the diversity in their locality and whether some are more vulnerable or some have more resources to help, etc
10'
What similarities and differences do you see between your different groups?
Open discussion
Aim here is that each group should understand the risk from each other's perspective (and possibly identify any RPAG). Can we reach a consensus?
10'


SHARING
Facilitator Question Prompts
How can we select from/ prioritise the shared list of risks and hazards that have emerged across all the groups so far?
10'
Activities
Open discussion. Aim here is sharing of knowledge, perspective and priorities, leading to relationship building
Returning to your groups and taking just one of these agreed hazards/ risks, what actions would you take if you received a warning that this was about to happen?
20'
Each group uses sticky notes to list actions
Have some flipchart paper ready and stick the sticky notes on that (write the question name at the top)
Stick them on the map if the location is relevant
Draw a line along a route if relevant


SHARING
Facilitator Question Prompts
Activities
What actions would you expect the other group to take if they received a warning that this was about to happen?
[Citizen groups think about what actions they would expect CPA groups to take, whilst CPA groups think about what actions they would expect citizens to take].
10'
Each group uses sticky notes to list actions they would expect the others to take on receipt of a warning.
Have some flipchart paper ready and stick the sticky notes on that (write the question name at the top)
Stick them on the map if the location is relevant
Draw a line along a route if relevant
Each group. please tell us:
What actions you would take?
What actions you expect the other group to be doing?
Each group then presents/ talks through their own map/ lists of their actions and the actions they expect of the other group to the whole room
10'
Discuss as a whole room - What are the shared or different expectations of the other group?
Open discussion on results and highlight the main similarities and differences (maybe underline in a different colour the most important ones).
20'

RELATING

## Facilitator Question Prompts

Who do you know that you could call on for help in this event?

For citizens ask about: friends, neighbours, family, others.

For CPAs ask about those in your professional networks)

10'

## Activities

Exploring social capital in citizens' communities and in CPA's professional networks.

This helps us understand e.g. the context for people being able to take actions

Who do you have the most trust in?

Exploring trust - underline or mask in different colour who this is

5'

RELATING

## Facilitator Question Prompts

After hearing all the discussions so far, do you want to change anything on your map and list?

5'

## Activities

Each group works separately for 5 minutes to agree any changes.

---

Each group please report back to the whole room and then let's open it up to a discussion

Each group shares their decisions and reasoning .

Open discussion

10'

BUILDING

## Facilitator Question Prompts

New groups that mix citizens and CPAs will now be formed and given a new blank map to work with.

What would a shared map and list of actions look like (i.e. inputs from both citizens and CPAs in collaboration)?

Think about the different social groups in the locality.


### Activities

We mix up the groups to produce these.

We should consider not just the hazards and risks but how different groups might be more or less affected, and how to engage with different parts of the local population to ensure knowledge of risks is shared

Share the results with the whole room and discuss

Each group please share your ideas and then let's discuss

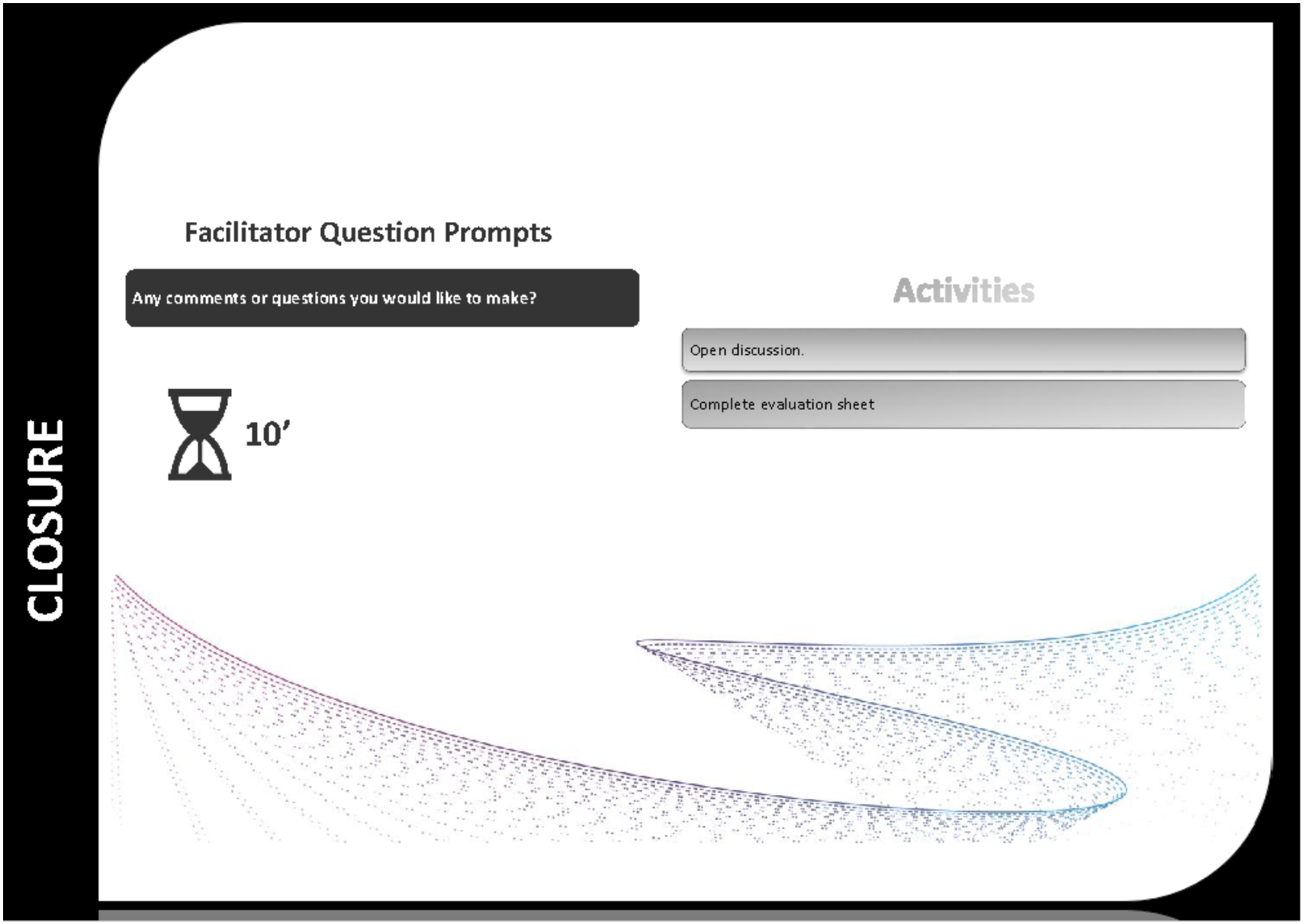
BUILDING

## Facilitator Question Prompts

- What should we do now with what we have learned?
- Would it be useful to keep talking and sharing on a regular basis?
- Would you be prepared to come back for some other activities to help reduce risk and share good practice actions?


## Activities

- Open discussion to explore the desire for ongoing collaboration
- Explore options for doing this through CPA-Citizen Risk Management Groups
- Through sharing via the RiskPACC online platform
- Explore interest in coming back for Round 2 of the Co-Creation Labs

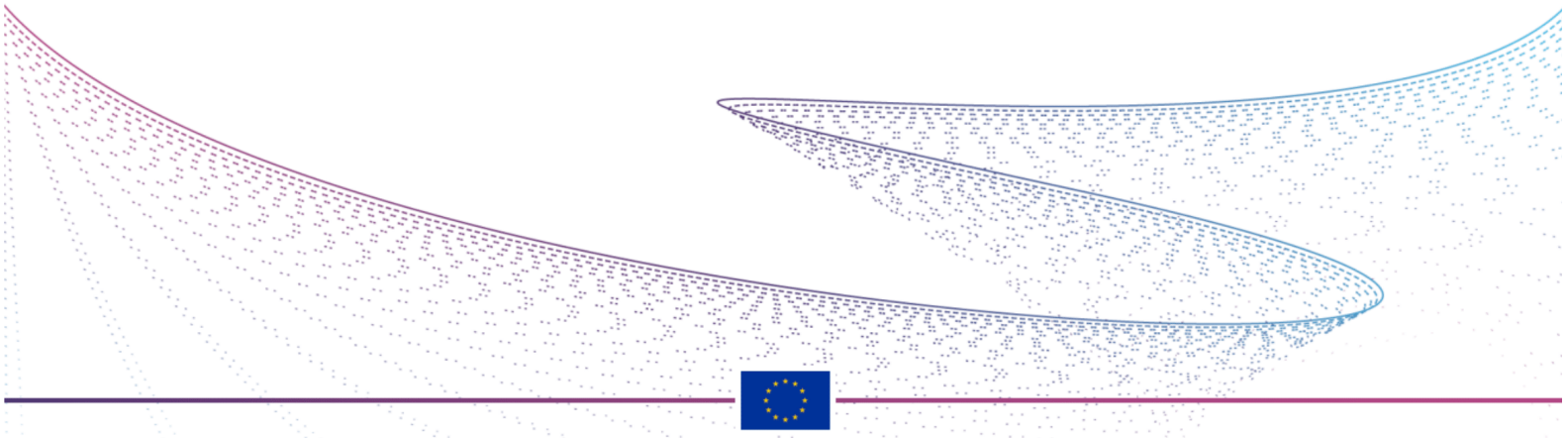

CLOSURE
Facilitator Question Prompts
Any comments or questions you would like to make?
10'
Activities
Open discussion.
Complete evaluation sheet

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101021271*

## 8.3 ANNEX 3 - Training for the risk communication exercise

RiskPACC

# TRAINING FOR THE IMPLEMENTATION OF A RISK COMMUNICATION EXERCISE



# CONTENT

This document contains a table of prompts and activities to guide a risk communication exercise to be conducted during your workshop. The document is designed to be a helpful aid, but you are free to modify it to suit your needs. For example, the document suggests some simple communications of risk to use as the basis for the exercise, but you can use your own if you prefer. Remember – these are just guidelines to assist in meeting our objectives, and not strict instructions.

This document identifies:

1. **General questions the facilitator can ask** the workshop groups.
2. **Suggested activities** that the participants in each group will be doing.
3. **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

# AIM

- The aim of the exercise is to facilitate discussion and activities amongst participants that address each of the modules of the riskpacc framework, and so help you to close the risk perception-action gap between yourselves and your citizens

# WHAT A RISK COMMUNICATION EXERSICE INVOLVES

- Participants will work in small groups to discuss their understanding and opinions of a typical form of risk communication.
- e.g. Location X has a 1 in 100 year flood risk;
  the chance of an earthquake within the next 50 years is X%).

- **They will also suggest ways to improve the communication.**

# SCOPE

- To address a need by CPAs to communicate to citizens and/or volunteers a particular risk that they have identified.
- To open up a structured space for dialogue and sharing of risk perceptions between CPAs and citizens/volunteers on the meanings and measurements of this particular risk.
- To identify the best forms of risk communication to help citizens and/or volunteers to take informed and appropriate risk reduction actions.
- To meet the needs of co-design and build relationships of trust through working together on a defined activity.

# OBSERVER / NOTETAKER QUESTIONS

What are the group's impressions of the communication?

Which modules of the RiskPACC framework is the discussion addressing at different points (if any) – understanding, sharing, relating, building?

Is there a risk perception gap that can be seen?

Is there disagreement or consensus within the group?

# DESIGN

**Design general questions** to support your case study and your project, and activities according your needs.

Share a **notetaker** on each table.

Each table should have a microphone to enable audio recording of the discussions to provide a transcript for later translation. Conference microphones are best.

Keep in mind to set up mixed groups for the implementation of the workshop.

During the workshop, the groups will have discussions separately, and then come together for whole-group discussions. The table of prompts below indicates when participants should work in their groups and when they will participate in discussions as a whole group.

Provide a short questionnaire for participants to complete before the workshop (at home) and again during the workshop after the task has been completed, that will measure things like risk perceptions and trust, so to evaluate any changes in this numerically.

# MATERIALS

- Pens/markers
- Flip chart
- Paper
- A microphone for audio recording

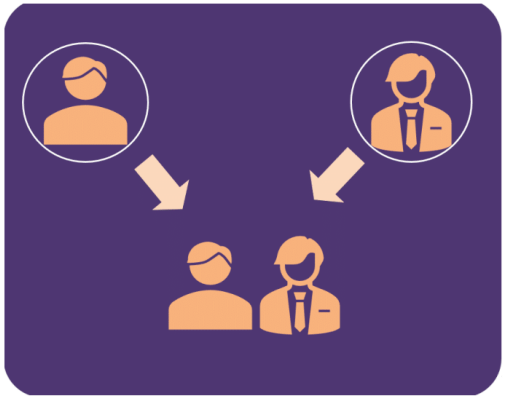
# CREATION OF GROUPS

- CPAs
- Volunteers
- Citizens
- Citizens representatives

**PARTICIPANTS SHOULD BE SPLIT INTO SMALL GROUPS THAT CONTAIN A MIX OF DIFFERENT TYPES OF PARTICIPANTS**

# CREATION OF GROUPS

During the workshop, the groups will have discussions separately, and then come together for whole-group discussions. The table of prompts indicates when participants should work in their groups and when they will participate in discussions as a whole group.



# ROLES WITHIN GROUPS

Numbers of participants will vary and so it may be necessary to combine some roles but, ideally, each group should have the following roles assigned.

## Facilitator

- The facilitator role should probably be the Case Study partner lead or similar. Using the table of prompts as a guide (see end of this document), the facilitator will be asking the questions and then when the groups are doing their work, they can walk around observing, listening and taking notes to provide some overall reflections for later analysis.

## Observer / Notetaker

- The Observer Notetaker using the table of prompts as a guide should take notes on the specific discussions that happen within their group, and along with the facilitator should help lead the discussion on each table.

❖If a host member is not available to take notes, then each group should nominate a participant group member to do this

## Reporter

- In addition to the Facilitator and Observer Notetaker, each group should nominate a Reporter.
- The Reporter is a participant who will report back on their group's work and discussions. One group can have more than one reporters.

WELCOME

## Facilitator Question Prompts

- Welcome everybody to the Co-Creation Lab
- Present the scope of the meeting
- Tour the table (name, organisation or particular interest group you are representing)
- Suggest for everyone to express his opinion. Everybody here has a voice and it is of equal importance. Everyone is an expert in his/her own way
- Ask the participants for initial questions that they have

20'

## Activities

- Meet and greet – view and sign GDPR statement and consent form
- Brief introduction describing the scope of the meeting
- Who is in the room? Self introductions
- Share the values of the meeting based on democratic and equality principles. Women and minority groups may need more encouragement to speak
- Go over the programme for the sessions (show on a slide or provide a handout)
- Deal with any initial queries

WELCOME

## Facilitator Question Prompts

Explain how the teams are formed and that one representative of each group will be responsible to communicate the findings of the questions and the exercises.

Set your communication. This is an example of a communication of risk about [flooding] and then we will explore what we all think of this communication.

e.g. "**Your location as a 1 in 100 year [flood/earthquake/ wildfire etc] risk"**

## Activities

Split into mixed groups or already have their names on the table in the places you want them.

Encourage them to volunteer or choose a reporter.

Write on flipcahrt or use projector to show the first risk communication example:

**"[ Your location] has a 1 n 100 year [flood/earthquake/wildfire etc] risk."**

so that everyone can see and discuss the questions that follow.

You could also provide a printout of the communication to each group member

10'

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UNDERSTANDING

## Facilitator Question Prompts

**What was your first impression of this communication?**

Here participants might comment on different things. If they are struggling to answer, you could ask them more specifically:

**How they initially understand the communication (confusing/makes sense, not detailed enough/too detailed).**

**How the numbers shown make them feel on first impression (worried, relieved, uncertain?)**

-20'

-20'

Based on this communication

**How worried do you feel about the risk of a serious [flood] in your area?**

**On a scale of 1-100, how risky does the chance of a [flood] in your area feel to you?**

**How often do you think a serious [flood] might occur in your area?**

**If a serious [flood] had occurred in your area last week, how likely do you think another serious [flood] would be to occur next week?** ***[Probe: Do you think it would be more likely, less likely, the same likelihood?]***

**How trustworthy do you think the information being communicated is?**

UNDERSTANDING

## Facilitator Question Prompts

- Would you find this communication useful to know about your area? [Probe – why/why not]
- Is there any other information you would like to see in this communication that is not included at the moment?
- Would you take any action(s) in response to this communication? [If yes, what action(s)? If no, why not?]
- What other suggestions do you have for how the communication could be improved?
- Please take notes on your answers to these questions, and the discussions you have, ready to present back.

## Activities

- Each group discusses the questions posed by the facilitator.
- This is an opportunity for people to begin to get to know each other and share their ideas.
- Here they can talk through what the communication means to them.
- Here they can talk through what the communication means to them.

-20'

SHARING

## Facilitator Question Prompts

Time is up!

**Please now can someone from each group talk us through your impressions of the communication, the answers to the different questions, and detail on the discussion you had?** (Present back to whole room)

**What similarities and differences do you see between your different groups in terms of your answers to the above questions?**

20'

## Activities

Each group then presents/ talks through their discussion in turn .

Open discussion. Aim here is that each group should **understand** and **share** with each other the risk from each other's perspective (and possibly identify RPAGs) and acknowledge that the same communication can be interpreted in different ways.

---

Returning to your groups...

**Can you discuss the diversity you know of in your locality (e.g. elderly populations, migrant populations, people with disabilities etc)? Are there particular social groups who might find this communication of [flood] risk more or less useful? Why?**

**Considering these different diverse groups, do you think they would/could take any actions in response to the communication?** [If yes – what actions? If no – why not?]

10'

Each group discusses amongst themselves what they know about the diversity in their locality and whether some people might find the communication more or less useful.

Make clear that they will have 10 minutes to do this.

BUILDING

## Facilitator Question Prompts

Designing an alternative communication of [flood] risk.

Here we would like to explain the technical meaning of this risk communication and why it is sometimes misunderstood.

**A 1 in 100-year flood is a flood that is so severe that it only has a 1% (or 1 in 100) chance of occurring in a given year.**

**This communication is sometimes misunderstood – many people believe that if they experience a 1 in 100-year flood in the current year then a similar sized event will not occur for another 99 years, which is incorrect.**

**In fact, the chance of such a serious flood each year is the same – 1% - regardless of whether a 1 in 100-year flood has recently occurred or not.**


## Activities

First explain to participants what a risk of a 1 in 100-year flood means, and why it is sometimes misunderstood.

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101021271*

BUILDING

## Facilitator Question Prompts

The Group task is to jointly design a communication of flood risk.

Your task is to imagine you live in an area where the risk of a damaging flood is 1% each year, and to design a communication of this risk to be provided to the people in your local area. Please use the pens and paper provided to draw out your ideas.

Try to make your communication as easy to understand and useful for the audience as possible. Think about what they might want to know about the risk, and how best to communicate this information.

To help you, you might want to consider the following in completing this task:

-30'

-30'

**How you communicate the numbers representing the risk (what format will they be in? Can you provide any context to help the audience better understand the numbers?).**

**Whether you would use any visuals to help communicate that information.**

**If there is any other information you could add to help in the understanding of the risk numbers.**

**If there is any information you could provide that would help the audience know what to do in response to the risk information communication.**

**How the audience, including those from the diverse groups you identified might interpret the communication, and if and how they might act in response to it.**

BUILDING

## Facilitator Question Prompts

Once you have designed your communication, please also think about:

What medium you would use to communicate via (e.g. website, radio broadcast, TV, magazine, app)

What are the pros and cons of these different media for the different and diverse audiences who might be receiving your communication?

## Activities

This is an opportunity for participants to reflect on what has been discussed so far and collaborate together to integrate this information into their improved risk communication.

Remember to take a photograph of the final communication designs, but also of any iterations and note the groups made during the process

Make clear that they will have 30 minutes to do this

-30'

BUILDING

## Facilitator Question Prompts

Time is up!

**Please can someone from each group now talk us through the communication you designed?**

**Please talk about why you designed it the way you did, and comment on the discussions and considerations that helped you as a group make those decisions?**

(Present back to whole room)

**Please also comment on the media you think you would communicate via and why**

15’

## Activities

Each group then presents/ talks through their communication design in turn.

Open discussion about the different communication designs, their pros and cons, their similarities and differences

CLOSURE

## Facilitator Question Prompts

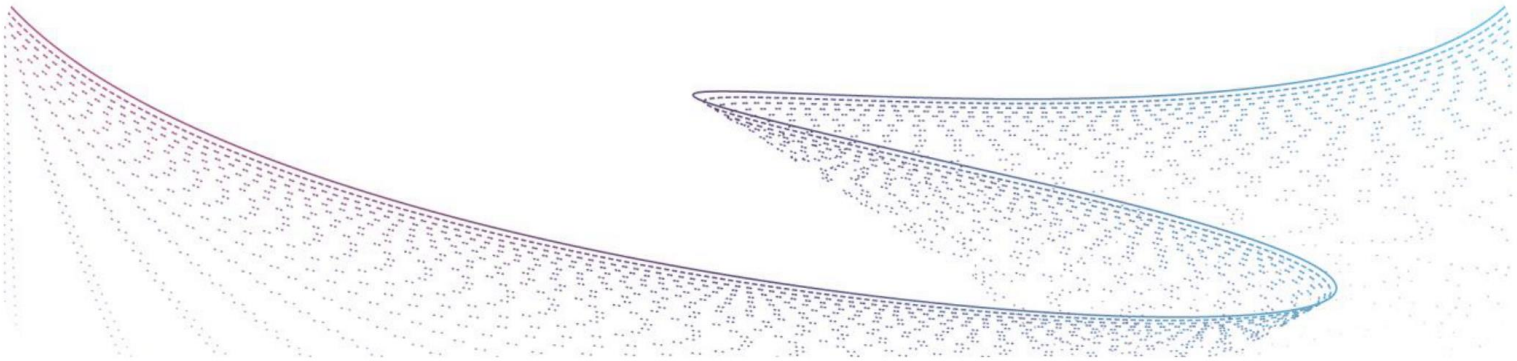
Any comments or questions you would like to make?

10’

### Activities

Open discussion.

Complete evaluation sheet



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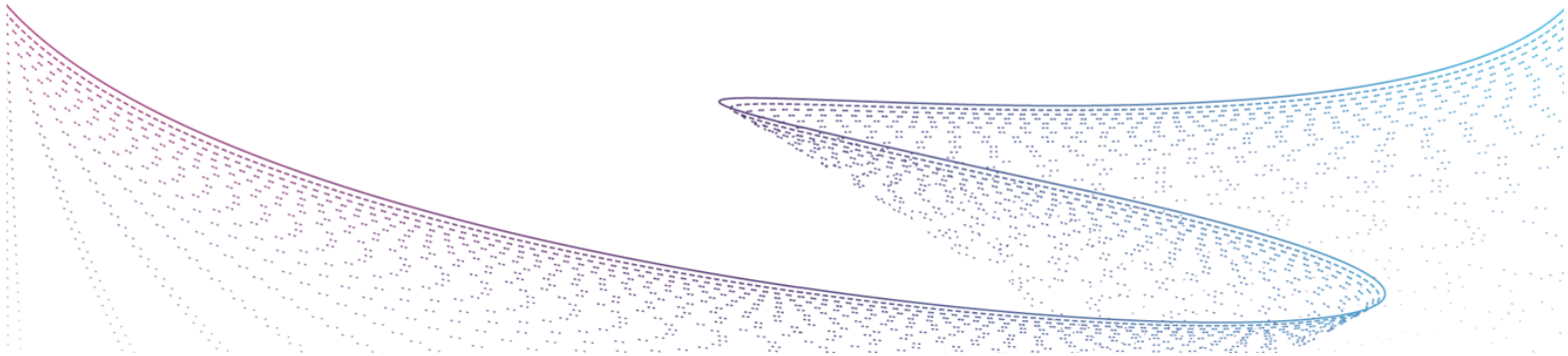
## 8.4 ANNEX 4 - Training for the risk communication exercise tailored for volunteers

RiskPACC

# TRAINING FOR THE IMPLEMENTATION OF A RISK COMMUNICATION EXERCISE TAILORED FOR VOLUNTEERS



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# CONTENT

This document contains a table of prompts and activities to guide a risk communication exercise to be conducted during your workshop. The document is designed to be a helpful aid, but you are free to modify it to suit your needs. For example, the document suggests some simple communications of risk to use as the basis for the exercise, but you can use your own if you prefer. Remember – these are just guidelines to assist in meeting our objectives, and not strict instructions.

This document identifies:

1. **General questions the facilitator can ask** the workshop groups.
2. **Suggested activities** that the participants in each group will be doing.
3. **Prompts** to help with noting down the responses of the participants, so the scientific partners and task leaders can conduct later evaluation and analysis.

# ACTIVITY OBJECTIVES

This task aims to create a safe space for understanding and exchanging ideas on why sometimes we don't perform risk-reducing actions even though we recognize there is a risk.

Although the activity contains some questions with simple rating scales attached, the objective of this activity is to engage in open, two-way communication, which is a core objective of the Rispack project.

The focus of the activity should be on understanding the contexts for why people do or do not act and not to focus on exposing shortcomings.

# AIM

- The aim of the exercise is to facilitate discussion and activities amongst participants that address each of the modules of the RiskPACC framework, and so help you to close the risk perception-action gap between yourselves and your citizens

# WHAT A RISK COMMUNICATION EXERSICE FOCUSED ON VOLUNTEERS INVOLVES

- You will share a risk communication message of your choice with the volunteers.
- An example could be:

**There is a 10% probability of existence of a damaging earthquake in your area within the next 50 years.**

Next, the volunteers will answer three questions measuring earthquake risk perceptions and preparedness levels, first at a general level and then from a more personal perspective. Following each question, the volunteers will discuss the answers and possible solutions as a group.

Finally, the group will have a collective discussion about the impact of risk communications, evaluating whether certain messages promote or discourage action.

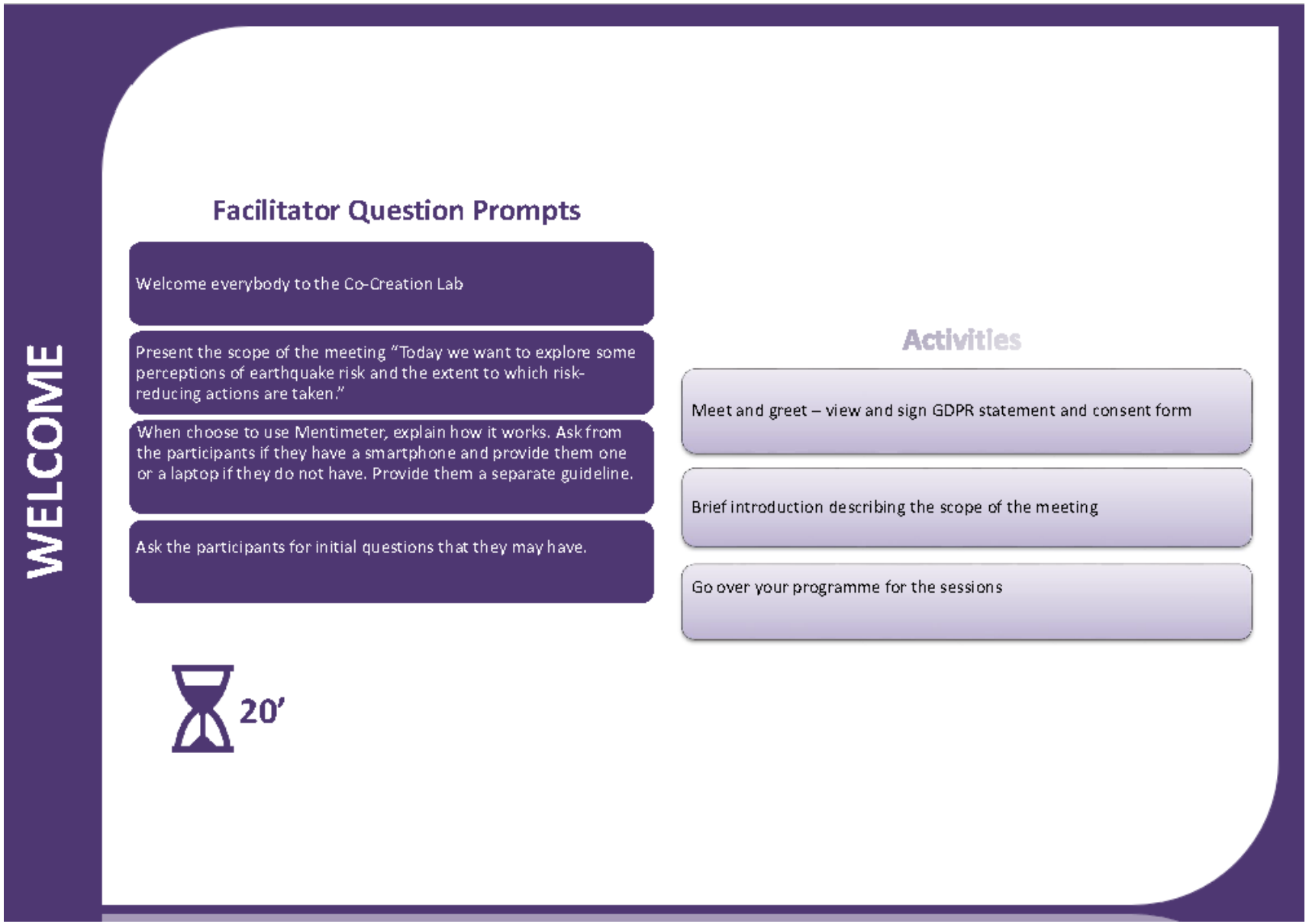
# ISSUES OF ANONYMITY

However, the volunteers feel comfortable in sharing why they may not have done something that might have been expected of them, the activity begins with an opportunity to answer the questions anonymously. This allows them to see that they are not alone having this response and then they can gain more confidence in sharing their own responses more openly.

## MATERIAL NEEDED

If you use Mentimeter:
This enables the volunteers to answer questions anonymously when in a group setting. To use it, a computer and projector are necessary to display responses on a large screen. Additionally, all participants will need a smartphone. Offer guidance to the participants on how to use that tool (www.mentimeter.com)

If you do not use Mentimeter:
Participants can write any anonymous answers on small pieces of paper, which can then be placed in a container. An individual from the host team can then read out the anonymous responses.


WELCOME
Facilitator Question Prompts
Welcome everybody to the Co-Creation Lab
Present the scope of the meeting "Today we want to explore some perceptions of earthquake risk and the extent to which risk-reducing actions are taken."
When choose to use Mentimeter, explain how it works. Ask from the participants if they have a smartphone and provide them one or a laptop if they do not have. Provide them a separate guideline.
Ask the participants for initial questions that they may have.
20'
Activities
Meet and greet – view and sign GDPR statement and consent form
Brief introduction describing the scope of the meeting
Go over your programme for the sessions

WELCOME

## Facilitator Question Prompts

Only, if you use Mentimeter, start an example question to show how the Mentimeter works:

E.g. "Did you have breakfast this morning? Yes/ No

Please select your answer and view the projector screen to see the data coming in.

Either using Mentimeter or pen & paper, set three questions in turn that you will discuss after.

## Activities

If you are using Mentimeter, trigger the breakfast question. This question is to show them how Mentimeter works and to demonstrate to the volunteers the anonymity it maintains. The volunteers will be able to see the answer data coming in on the screen– mentimeter will graph the data automatically for you. The size of the word 'yes' or 'no' will be bigger or smaller depending on how many people voted for it:

Yes No

Project on screen or flipchart and/or provide print out of chosen communication.

10'

UNDERSTANDING

SHARING

## Facilitator Question Prompts

We will now show you an example of a risk communication about earthquakes.

Trigger/ask first question. Here is an example:

There is a 10% chance of a damaging earthquake in your area in the next 50 years."

Based on the communication you have seen, how likely do you think it is that a damaging earthquake will occur in your area within the next [50 years]?

1. Highly unlikely
2. Unlikely
3. Likely
4. Very likely

Please enter the number/write down your answer now."

## Activities

If using Mentimeter, trigger the first main question about risk perceptions. Ask people to just input the number corresponding to the rating they choose.

Mentimeter will again visualise the data for you, and you can read out the answers to the room.

If you are not using Mentimeter, collect the pieces of paper the volunteers have written their answers on and put them in a container. You can then shake up the container contents and then read out the answers.

This is an opportunity for the volunteers to see how they and their colleagues perceive the risk from earthquakes in their area.

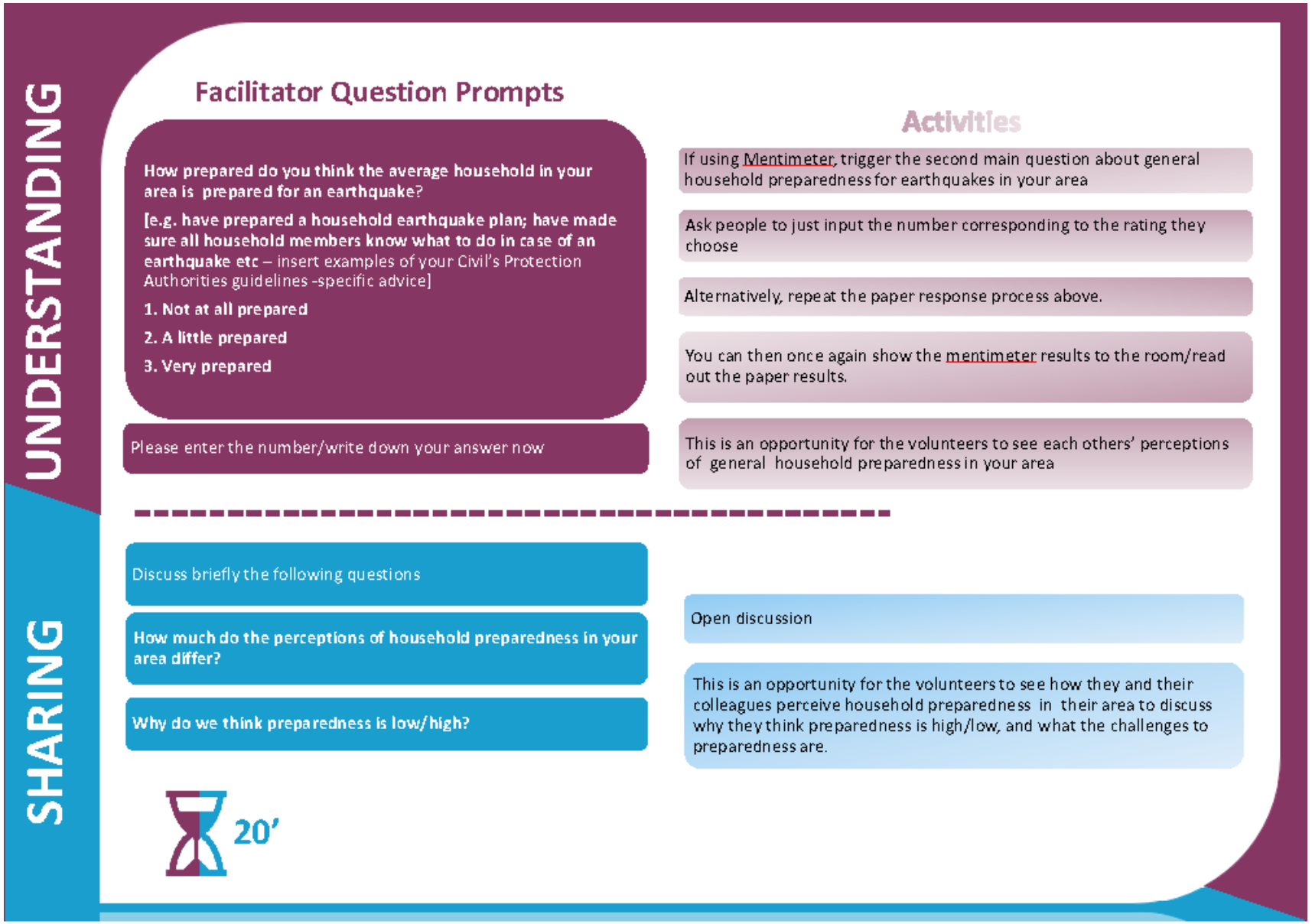
Discuss the results

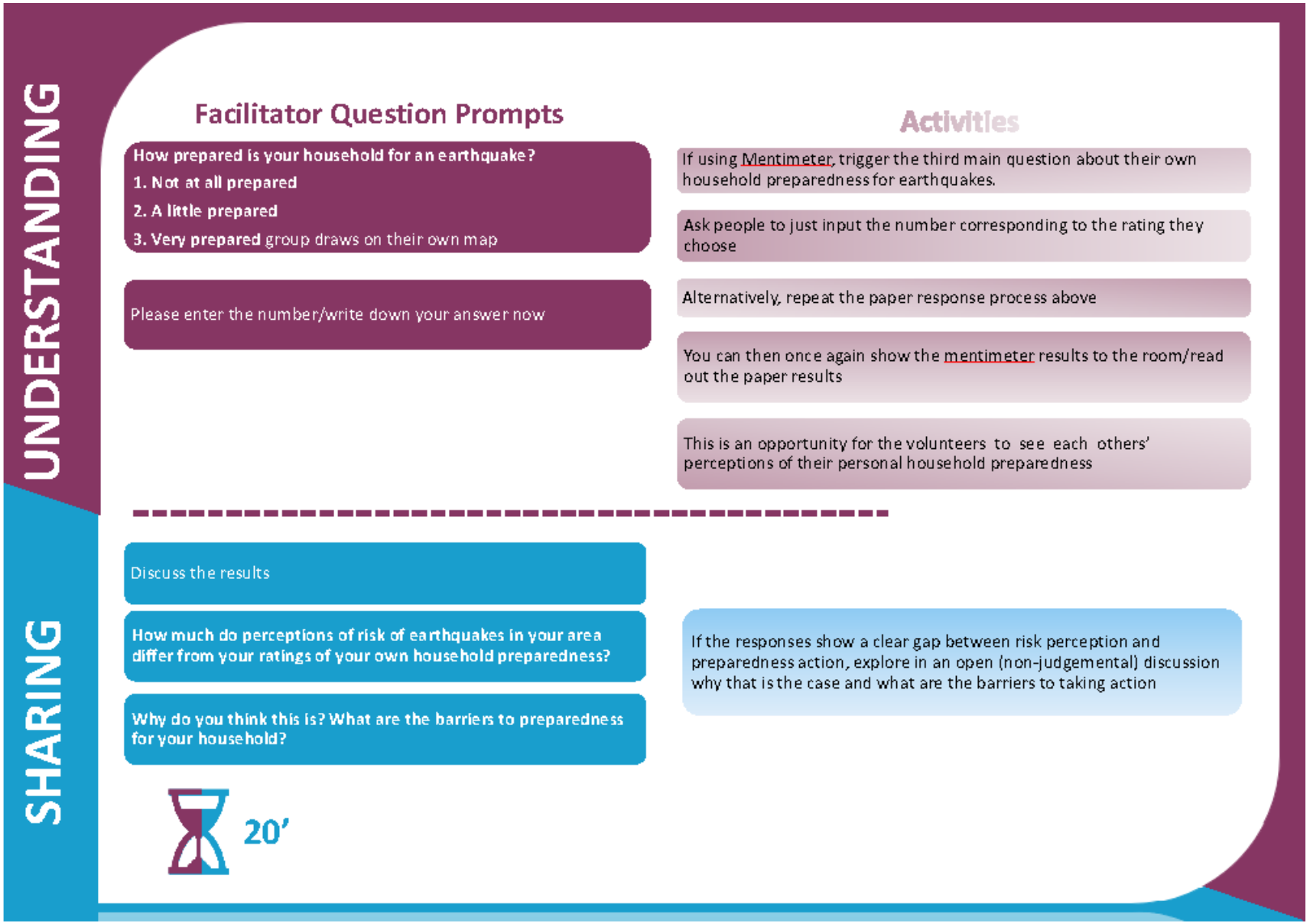
According to the results, how similar or different are the risk perceptions of the communication you saw? Why do you think this is?

20'

Open discussion but keep it short because the main discussion will be later.

The aim is that volunteers should understand and share with each other the risk from each other's perspective (and possibly identify RPAGs) and recognize that the same communication might be interpreted in different ways.


UNDERSTANDING
Facilitator Question Prompts
How prepared do you think the average household in your area is prepared for an earthquake?
[e.g. have prepared a household earthquake plan; have made sure all household members know what to do in case of an earthquake etc – insert examples of your Civil's Protection Authorities guidelines -specific advice]
1. Not at all prepared
2. A little prepared
3. Very prepared
Please enter the number/write down your answer now
Activities
If using Mentimeter, trigger the second main question about general household preparedness for earthquakes in your area
Ask people to just input the number corresponding to the rating they choose
Alternatively, repeat the paper response process above.
You can then once again show the mentimeter results to the room/read out the paper results.
This is an opportunity for the volunteers to see each others' perceptions of general household preparedness in your area
SHARING
Discuss briefly the following questions
How much do the perceptions of household preparedness in your area differ?
Why do we think preparedness is low/high?
20'
Open discussion
This is an opportunity for the volunteers to see how they and their colleagues perceive household preparedness in their area to discuss why they think preparedness is high/low, and what the challenges to preparedness are.


UNDERSTANDING
Facilitator Question Prompts
How prepared is your household for an earthquake?
1. Not at all prepared
2. A little prepared
3. Very prepared group draws on their own map
Please enter the number/write down your answer now
Activities
If using Mentimeter, trigger the third main question about their own household preparedness for earthquakes.
Ask people to just input the number corresponding to the rating they choose
Alternatively, repeat the paper response process above
You can then once again show the mentimeter results to the room/read out the paper results
This is an opportunity for the volunteers to see each others' perceptions of their personal household preparedness
SHARING
Discuss the results
How much do perceptions of risk of earthquakes in your area differ from your ratings of your own household preparedness?
Why do you think this is? What are the barriers to preparedness for your household?
If the responses show a clear gap between risk perception and preparedness action, explore in an open (non-judgemental) discussion why that is the case and what are the barriers to taking action
20'

SHARING

## Facilitator Question Prompts

General discussion about risk communication

**Finally, we want to discuss your views on how particular risk communication messages can encourage or discourage people to act. What types of message?**

(E.g. 10% risk of an earthquake in your area in the next 50 years or some other form of information?).

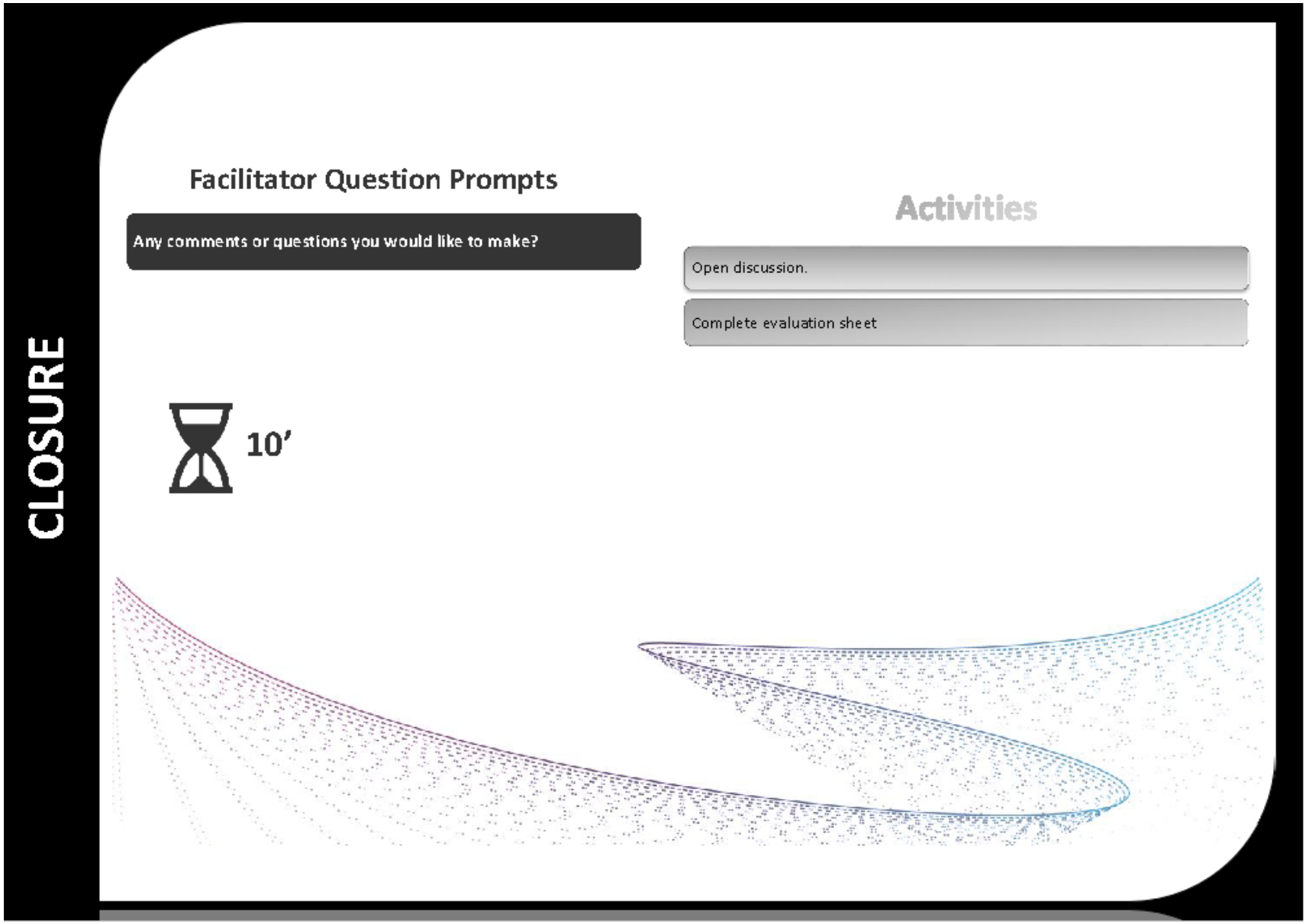
**What are the barriers which stop people from carrying out preparedness/risk- reducing actions even though they might recognise a risk?**

**What are the things which encourage people to take risk-reducing actions?**

20'

## Activities

This final section aims to facilitate a discussion about the impact of risk communications on action, why gaps between risk perception and action might occur, and what are perceived as the main barriers to preparedness. This can also be a good opportunity for volunteers to reflect on their own personal gap between risk perceptions and preparedness actions, and why they might have such a gap


CLOSURE
Facilitator Question Prompts
Any comments or questions you would like to make?
Activities
Open discussion.
Complete evaluation sheet
10'

## 8.5 ANNEX 5 – Training to co-creation methodology

### ABOUT RISKPACC

Increasingly complex and interconnected risks globally highlight the need to enhance individual and collective disaster resilience. Awareness of risks and levels of preparedness across Europe remain low with gaps between the risk perceptions and actions of citizens, and between the risk perceptions of citizens and Civil Protection Authorities (CPAs). The RiskPACC project seeks to further understand and close this Risk Perception Action Gap (RPAG). Through its dedicated co-creation approach and its seven case studies, RiskPACC will facilitate interaction between citizens and CPAs to jointly identify their needs and develop potential procedural and technical solutions to build enhanced disaster resilience. Importantly, RiskPACC will provide an understanding of disaster resilience from the perspective of citizens and CPAs, identifying resilience building initiatives and good practices led by both citizens (bottom-up) and CPAs (top-down). The "Risk Pack" of solutions will include a framework and methodology to understand and close the RPAG, a repository of international best practice and tooled solutions based on new forms of digital and community-centered data and associated training guidance.

### RISKPACC OBJECTIVES

- Understand and close Risk Perception Action Gap (RPAG)
- Facilitate interaction between citizens and CPAs
- Develop potential procedural and technical solutions to build enhanced disaster resilience
- Provide an understanding of disaster resilience from the perspective of citizens and CPAs
- Facilitate collaboration between citizens, CPAs, CSO, researchers and developers
- Provide the "risk pack" of solutions that will include a framework and methodology to understand and close the RPAG

### PARTNERS

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RiskPACC

# RiskPACC

## Integrating Risk Perception and Action to enhance Civil Protection - Citizen interaction

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101019707.

# The RiskPACC Co-Creation Workshop Process

Introduction | Conceptualisation | Collaboration | Continuation

- The co-creation approach consists of four phases adopted from the broader Design Thinking background
- RiskPACC follows the co-creation approach in the project process (Foundation – Rapid Prototyping – Refining – Implementation)
- This approach has been broken down to the workshops, with the final co-creation workshop structure consisting of four phases with different modules
- The interchangeability of the four phases' modules highlight the workshops' agility and flexibility, especially in the participatory activity chosen
- The field of disaster resilience requires open networks, and socio-technical systems to solve collective action problems
- Technological tools provided to RiskPACC by its technology partners are intended to address these needs and are therefore integrated into the workshop format
- Stakeholders to this process are the case study owners, policymakers, representatives from CPAs and CSOs, technology developers, and citizens

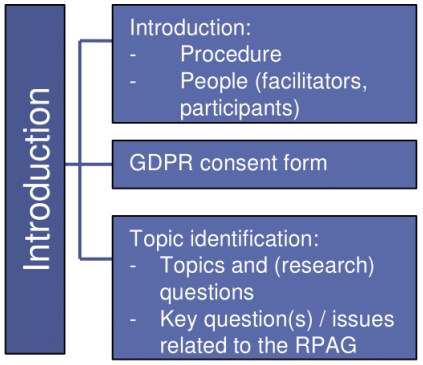
***Interested in an in-depth explanation of…***

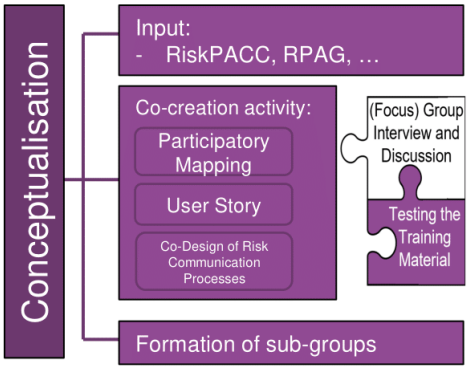
- *co-creation from practitioners' and scientific perspectives?*
- *our workshop process in detail?*
- *checklists for all the process steps for your preparation?*

➢ RiskPACC Lab Methodology and Glossary, https://doi.org/10.5281/zenodo.7801826

*Point of contact: Jeannette Anniés, jeannette.annies@iat.uni-stuttgart.de*

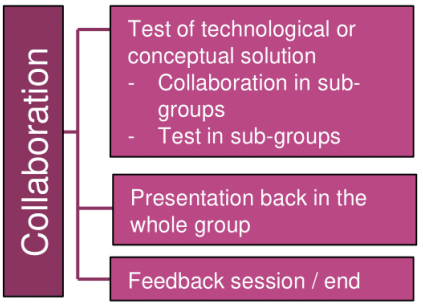
Starting the workshop during the **Introduction** phase, the facilitators will present the procedure of the workshop to the participants. After this explanation, the facilitators should introduce themselves and give room for the individual introductions of the workshop participants. Afterwards, legal issues concerning the protection of the participants' personal data are addressed. As the last part of the introduction, the topic and aim of the workshop and, where applies, the research questions by the case study partners will be presented.

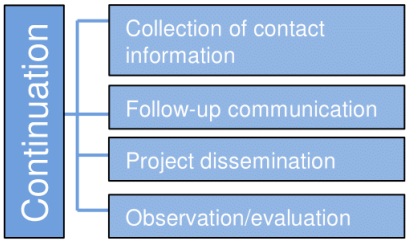



In the **Conceptualisation** phase of the workshop, more in-depth input is delivered concerning the RiskPACC project and/or the RPAG. The modules offer agility: an activity that best fits the needs of the case study is chosen. In RiskPACC, activities such as participatory mapping, storyboard user stories, and co-design of risk communication processes have been tested. The methodology that has been chosen by the facilitators will be presented and explained to the participants. Last, the participants are separated into sub-groups.

The **Collaboration** phase starts with the work on the co-creation activity that has been introduced beforehand. These activities provide interesting starting points for discussions around the RPAG. Moreover, the interchangeable modules of the conceptual phase include the test of technological or conceptual solutions. Where applies, the technological solutions can be tested in sub-groups. In the best case, the group establishes trust ties.




The last phase of the workshop is the **Continuation** phase, in which contact information is collected to enable follow-up communication. The participants can receive a certificate of participation for the workshop and afterwards the workshop will be evaluated – both by participants as well as facilitators. The scientific data gathered in the workshops is reported.

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101021271

# The RiskPACC Consortium


FIGURE 2: THE RISKPACC CONSORTIUM