RiskPACC

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

RISKPACC COLLABORATIVE FRAMEWORK

Deliverable 4.4

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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 six (6) case studies, to jointly design and prototype novel solutions.

The “RiskPACC” 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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TABLE OF CONTENTS

List of Tables

List of Figures

Executive Summary

The RiskPACC Collaborative Framework aims to enhance disaster resilience by bridging the Risk Perception-Action Gap (RPAG) between citizens and Civil Protection Authorities (CPAs). Developed over a three-year period, this framework consolidates insights from various stakeholders and project partners to facilitate effective collaboration in disaster risk management (DRM).

The Framework is structured around four user-friendly modules: Understanding, Sharing, Relating, and Building. Each module focuses on a crucial aspect of developing risk communication processes, starting with understanding the risk and social-political contexts, sharing risk perceptions and expectations regarding DRM, developing constructive relationships, and finally building effective risk communication methods. This modular approach allows for flexibility in implementation, tailored to specific contexts and needs.

Key objectives of the Framework include:

- Enhancing the capacity of CPAs and citizens for collaborative DRM.
- Providing a consolidated conceptual and methodological guide to help close the RPAG between citizens and CPAs.
- Facilitating two-way communication and co-creation between CPAs and citizens, using a staged approach to gradually increase citizen engagement.

The RiskPACC Framework aims to make DRM more effective by closing the gaps between the risk perceptions and actions of citizens and those of CPAs. By integrating local knowledge with scientific data and promoting participatory approaches, the Framework ensures that disaster resilience strategies are inclusive, context-specific, and responsive to various community groups.

The practical examples within the Framework illustrate its applicability across different contexts and social groups, providing concrete guidance on progressively implementing the modules to increase citizen engagement in DRM. Ultimately, the RiskPACC Collaborative Framework promotes mutual trust and shared understanding, enabling stakeholders to develop tailored solutions for enhanced disaster resilience and preparedness.

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Glossary and Acronyms

TABLE 1: GLOSSARY AND ACRONYMS

Acronym	Full Form
CDC	Centres for Disease Control and Prevention
CPAs	Civil Protection Authorities
CSOs	Civil Society Organizations
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ECA	Europe and Central Asia
GADAus	Gender and Disaster Australia
GEM	Gender and Emergency Management
GRRIPP	Gender Responsive Resilience and Intersectionality in Policy and Practice
IOM	International Organization for Migration
IFRC	International Federation of Red Cross and Red Crescent Societies
NCOA	National Council on Aging
OSCE	Organization for Security and Co-operation in Europe
RPAG	Risk Perception-Action Gap
SAMHSA	Substance Abuse and Mental Health Services Administration
SOGIESC	Sexual Orientation Gender Identity Gender Expression and Sex Characteristics
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
WHO	World Health Organization
WREMO	Wellington Region Emergency Management Office

1 INTRODUCTION

1.1 Overview

The DoA describes this deliverable as follows:

> *D4.4 RiskPACC Collaborative Framework. This deliverable contains the consolidated results from T4.1 and T4.2, and the co-creation labs to produce the finalised RiskPACC Framework.*

It builds on earlier work reported in Deliverable 4.1 Report to WP3 on Prototype Co-creation methodology, D4.3 Draft RiskPACC Collaborative Framework and D3.6 Report Lab Phase II. It is also closely connected to work reported in D4.2 Prototype Knowledgebase Repository and D4.6 Training Material. The early part of Framework development incorporated findings from Work Packages 1, 2 and 3[1]. To ensure this report can be read as a standalone document, there will inevitably be some repetition of elements from the foundational work.

The main objective of this document is to present a user-friendly collaborative framework of use to CPAs and citizens to help them understand, and share perceptions of, the risks they face, and collaboratively develop possibilities for mitigative actions. This framework has been developed over a 3-year period with frequent reference to RiskPACC partners, and many external stakeholders.

The RiskPACC Framework was developed early on in the RiskPACC project for three purposes: firstly, to guide the ongoing conceptualisation and methodological development of the project; secondly, to provide a user-friendly tool for the RiskPACC Case Study partners to answer some of their stated needs – in particular, to find ways to address the Risk Perception-Action Gap (RPAG); and thirdly, to result in a useful tool for others outside the project to build local/community based DRR capacity.

The Framework confronted the challenge of developing two-way communication processes between CPAs and citizens, often where there had been no prior experience. It offers a route map for how to proceed from different experience starting points, with some illustrative resources (see Annex 1). However, the purpose of the Framework was not to develop the risk communication tools themselves (that task was the responsibility of Work Packages 5 and 7) but to explore the recommended social processes and relations which underpin the building of any tools, solutions and risk reduction strategies.

The Framework works best for local community-based disaster risk reduction and management. For those situations where CPAs are not working with their regular communities, perhaps are delivering other crisis interventions elsewhere (such as with

[1] RiskPACC Deliverables can be found here: https://www.riskpacc.eu/downloads/

Search and Rescue or providing extra relief capacity), collaboration with local CPAs, local NGOs, local groups of volunteers, etc. is still the recommended route.

We use the main body of the report for the essential information (theory, process and empirical examples) and place detailed discussion and useful resources for the Annexes.

1.2 Structure of the Deliverable

This document includes the following chapters:

1. **Executive Summary**
2. **Introduction**
    - Provides a general background of the RiskPACC project.
    - Outlines the chapters and content included in the report.
3. **Risk Perception and Action**
    - Discusses how major risks are perceived by the public and authorities, and the actions taken to manage these risks.
    - Explores theoretical models that explain the relationship between risk perception and action.
    - Offers strategies to align risk perception with actionable steps.
4. **Participatory Approaches and Local Knowledge**
    - Outlines the need for engaging local communities in risk management.
    - Identifies the challenges in participatory approaches and the importance of collaborative governance.
5. **The RiskPACC Collaborative Framework**
    - Introduces the framework and its purpose.
    - Describes the module 'Understanding'
    - Describes the module 'Sharing'
    - Describes the module 'Relating'
    - Describes the module 'Building'
    - Explains how the framework can be applied to different social groups and communities, addressing their unique needs and perspectives.
6. **Applying the Framework: A Staged Approach**
    - Provides a step-by-step approach for CPAs to gradually engage with citizens, starting from no engagement to community leadership
7. **Conclusion**
    - Summarizes the main findings and the importance of the RiskPACC Collaborative Framework in enhancing disaster resilience through improved communication and participatory approaches.
8. **References**
9. **Annexes**
    - Practitioner Resources
    - Understanding Target Groups in DRR

- The Different Starting Points of CPAs
- Working with different Communities
- WREMO Case Study

2 RISK PERCEPTION AND ACTION

The central argument of the RiskPACC project is that citizens and Civil Protection Authorities (CPAs) often differ in the ways they perceive risk, in the ways they subsequently act upon those perceptions, and in how they expect others to act. We have termed this, the Risk Perception-Action Gap (RPAG) because the RPAGs between citizens and CPAs affect people's ability to act on the risks they perceive (e.g., when CPA actions are not aligned with people's needs). It is this which the project has sought to close through various means but emphasising the role of two-way communication between the protagonists.

We begin this chapter with a review of the literature on risk perceptions and actions.

2.1 Risk Perception and Actions to Confront or Manage Major Risks

2.1.1 INTRODUCTION

The purpose of this section is to enquire into the relationship between risk perception and actions taken to manage, reduce or avoid major risks. This is a complicated issue in which there are few clear, consistent and enduring regularities. However, despite the evident heterogeneity of the relevant body of research literature, some generalisations can be extracted from it. The section starts by examining the nature of risk perception in relation to major threats and hazards. There are many influences on perception, and they create a highly varied picture of how it works in different local realities. In attempts to characterise perception, social scientists have used five or six different models. The clearest regularity is that it is multidimensional and responds in varied ways to a variety of stimuli.

The section endeavours to connect knowledge of risk perception with studies of actions taken on the basis of how risks and threats are perceived. In this, there is an interweaving of individual, collective and organisational perception. However, the best risk reduction appears to come from a collective effort characterised by openness, transparency and willingness to work together.

Whereas there may be an objective or scientific view of risk, it has long been known that there are many potential "alternative realities" in which any attempt to reduce tangible hazard risks must contend with the way that people, communities and organisations view them. This has come to be seen as equal in importance to the scientific view of risk simply because the way people see things (individually or collectively) determines how they act, and how willing they are to take action. We start with a review of risk perception.

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2.1.2 THE PERCEPTION OF MAJOR RISKS

In the 1960s Chauncy Starr published an influential article on risk in which he stated that "a thing is safe if its risks are judged to be acceptable" (Starr 1969). This ushered in a period of intensive study of people's attitudes to major risks and revealed a complex picture. Generally, disease mortality risk was taken as the yardstick for judging the riskiness of other hazards and threats (Baird 1986). It was deemed to represent the maximum that people would tolerate.

In general, total risk can be seen as the sum of factors that amplify it, minus the sum of those that contribute to its reduction, plus or minus risk perception. This last factor is something of a 'wild card' in that experience, criteria of judgement, social milieu and level of education are some of the factors that can lead perception to be high or low, positive or negative, complete or scarce, and different between individuals and groups. The perception of risk is mediated by personality, culture and social relations. Age, gender, ethnicity and lived experience all play a role in determining it. Not only the availability of information matters, but also its quality, completeness and accuracy and the extent to which it is publicised, shared and believed.

Major risks entail a spectrum of valuations which collectively produce a mean or consensus of people's attitudes to them. Tolerable risk stimulates little demand for greater safety: dreaded risk requires high-reliability systems and great expenditure to bring it down to acceptable levels. However, as appetite for risk varies substantially from one person to another, there is a spectrum that extends from risk aversion, through risk denial and risk tolerance, to risk-seeking behaviour (Vasvári 2015). The last of these may rely on the 'syndrome of personal invulnerability', in which people see mishaps as always happening to other people (Wachinger et al. 2013). Weber (2017) noted that in people's attitude to risk there is a dialectic between emotional responses and analytical ones. As perception increases, it can drive people who are not innate risk seekers towards familiar concepts and behaviours as a form of refuge from fear and uncertainty.

Table 2 presents a list of major risks with eight different categories or options. It highlights the wide range of risk types and demonstrates the diverse ways that the public and institutions view these risks.

TABLE 2: CLASSIFICATION OF MAJOR RISKS

One side of the spectrum		The other side of the spectrum
Voluntarily assumed	↔	Involuntarily assumed
Chronic	↔	Catastrophic
Common (tolerated)	↔	Exceptional (dreaded)
Injurious	↔	Fatal
Known to those exposed	↔	Unknown to those exposed
Known to science	↔	Unknown to science
Can be mitigated or controlled	↔	Cannot be mitigated or controlled
Old		New (emerging)

2.1.3 THE PUBLIC(S)[2] AND RISK PERCEPTION

As research in this field has proceeded, it has revealed that the stereotypical model of people as ignorant, emotional and superficial in their understanding of risk is unhelpful (Sjöberg 1998). This has meant that researchers tend to discount the possibility that people are assailed by fatalism, wishful thinking and hopelessness, even though there are undoubtedly limited cases in which this is so (Ardaya et al. 2017). As a more pluralistic approach to research developed, so more dimensions appeared in the catalogue of risk perception options. Peng et al. (2019) divided risk perception into four dimensions: of the likelihood of occurrence, of fear, of the unknown, and of controllability. The mix resulted in a wide variety of states of perception. Ardaya et al. (2017) found that perception varies with type of hazard. For two different hazards, for example destructive floods and landslides, the same people could manifest quite different attitudes. In fact, Ho et al. (2008) found that people's sense of controllability appeared to be negatively correlated with perceived impact for landslides, but not for floods.

Faced with complex situations, researchers have sought to bring together all the factors that have a hand in determining people's perception of major risks. At the individual level, these can be cognitive and affective. At the collective level they can be social and political. Beyond this is the cultural background, which can be shared in the case of groups of people (Xie et al. 2019). Mañez et al. (2016) argued that risk perception involves a complex combination of innate biases and experience. They provided the following diagram (see Figure 1) to summarise the factors involved.

[2] Much of the literature refers to individuals (in a dominant psychological approach) or 'the public'. In RiskPACC terms, we would typically take the public to refer to citizens.

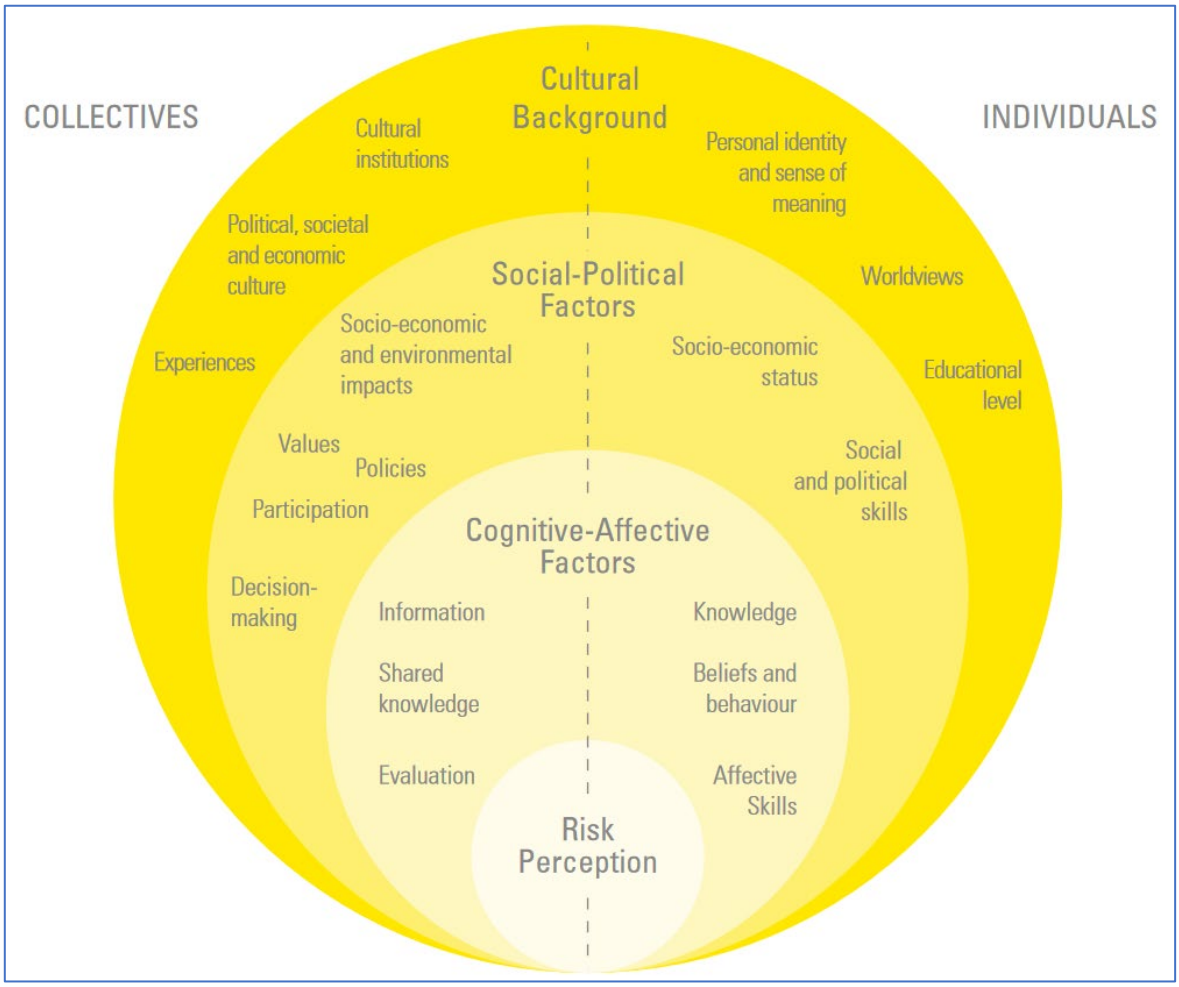

FIGURE 1: INDIVIDUAL AND COLLECTIVE INFLUENCES UPON RISK PERCEPTION (MAÑEZ ET AL. 2016).

As Burns (2007, p. 9) noted, "Risk perception, risk-related behaviour and policy preferences are dynamic and change over time". Experience of risks and impacts is a prime mover in creating such change, which can include social, political and economic 'ripple phenomena'. Bickerstaff (2004, pp. 835-836) concluded that

> "....the perception of risk is multi-dimensional and influenced by complex social, political and cultural processes. The gulf between 'lay' and 'expert' perceptions cannot be defined simply as a function of error or ignorance on the part of 'the public' but is founded in issues such as power, values, trust and place."

Bickerstaff found some difficulty in deciding whether mass media or personal experience had a greater role in shaping people's perception of chronic air pollution episodes. Tsoi et al. (2021) considered the impact on people's risk perceptions of social media and found them to be a potent influence. Indeed, some people who spent much time on social media lived in a sort of "parallel reality" in which they found it difficult to distinguish between fact and fantasy. Ho et al. (2008) encountered a distinct difference between the perception of men and women, in which the former bore less sense of threat than the latter. However, Wachinger et al. (2013) found that both age and gender had equivocal effects on risk perception. Interestingly, they also found that hazard experience did little to modulate people's understanding of natural hazard risk.

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Xie et al. (2019) argued that, although experience was a major explanatory variable, affect was more important.

In summary, Renn (1998) argued that risks are always mental images of threats that can cause real harm. People use Adams's 'risk thermostat' (Adams 1995) to weigh up the benefits of taking risks (assuming they have a choice). As Renn noted, they might accept harm if it helps achieve a greater goal. Participatory democracy plays a role in this. Wachinger and Renn (2010) identified two ways to analyse risk perception. The first is the realist approach, where perception is compared to objective risk as determined by experts. The problem with this is that people might not agree on who is an expert. The second is the constructivist approach, where risk perception is seen as subjective and shaped by social factors. For example, Schmidt (2004) noted that new organisations can change risk perception through social interaction. Wachinger and Renn argued that good decision-making needs both a solid understanding of objective risk and a clear grasp of how people perceive that risk.

2.1.4 RISK PERCEPTION AND ACTION

Researchers are practically unanimous that the connection between how people perceive risk and the actions they take as a result of that perception is complex and often tenuous. Rufat et al. (2020) observed that the link between risk perception and behaviour is critically dependent on context. These authors also discussed the effect of 'elite capture' on risk management. When powerful and highly motivated groups in society take action to reduce risks, it can sometimes make things worse for less privileged groups (Tsoi et al. 2021). For example, when wealthy residents lobbied for flood prevention efforts in Windsor and Eton on the River Thames, west of London, the flood risk for expensive properties was reduced. However, these same efforts increased the risk for less wealthy areas along the river (Warner 2012). In presenting a critical view of research, Qin et al. (2021) suggested that the lack of a robust relationship between perception and action is often a function of the limitations of studies that have sought to uncover it. They also noted that the relationship appears to be strongest where risks bear a high level of uncertainty and are difficult to control. Sjöberg (2001, p. 115) noted that "public risk perception has a role, but not a defining one, in the tremendous inconsistencies in the allocation of resources for risk mitigation". He added that politicians often see risk matters as destabilising issues, but they are required to deal with them because of public and mass media pressure.

Paradoxically, major risk reduction measures can lead to low perceptions of risk (Mañez et al. 2016). This is sometimes called the 'levee effect' (Tobin 1995). For example, in the Wadden Sea area, confidence in dykes as a protection measure against coastal flooding tended to reduce the perception of flood risks (Mañez et al. 2016). In further developments, Zhu and Yao (2019) found that richer and more highly educated people were less likely to take action on their risk perceptions than were those who were less fortunate in life. In this case, it was possible that knowledge enabled people to reconcile themselves to living with hazard rather than do something to reduce it. It is also possible that the availability of greater resources (money, insurance and social capital for example) had an effect here.

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As Schmälzle et al. (2017) noted, "risk perceptions are a prerequisite for protective action". Otway and Thomas (1982) observed that there is no single model for perception, belief and action but, despite this, understanding the public's attitude to risk should inform official actions to reduce it. In this context, Fischhoff et al. (1993) warned against underestimating people's ability to make decisions, even though emotional reactions can be as important as coldly rational ones.

2.1.5 MODELS OF THE PERCEPTION-ACTION NEXUS

Social scientists have sought to explain the complex links between risk perception and action using a variety of theories and models. These include:

- the protective action decision model (PADM; Heath et al, 2018)
- protection motivation theory (PMT; Rogers, 1975)
- the theory of planned behaviour (TPB; Ajzen, 2020)
- the protective action decision model (Lindell and Perry 2004, 2012)
- the theory of reasoned action (TRA; Heath et al, 2018)

As Wachinger et al. (2018) noted, risk perception can be studied by participation in the processes of official and lay decision making, and the models can be calibrated using the results of questionnaire surveys. Fischhoff (2012) argued that careful survey of perception can often enable people's response to the risks roughly to be predicted with a simple linear model. Heath et al. (2018, p. 336) used the theory of reasoned action (TRA) to predict people's risk management intentions on the basis of the extent to which they conformed with other people's behaviours, how people viewed the cost-benefit elements of the problem and other aspects of attitudes and local environment. They deduced that in high income societies risk awareness has diminished over the years.

Of the models listed, PADM appears to be the most popular. In explaining decisions in favour of protective action, it links social and environmental factors, attention, comprehension, choice and norms (Heath et al, 2018). In a study of risk management in China, Duan et al. (2020) found that people's adoption of protective actions on the basis of government recommendations, did not vary by region. It did, however, vary according to people's different risk perceptions. Protective actions by government (i.e., direct demonstration of risk management) tended to increase people's willingness to take their own protective actions. This finding differs from that of researchers who encountered the so-called 'levee effect' (e.g., Mañez et al. 2016). In any case, Donner (2007) found that rational choice theory did not help one to understand people's choices in turning their risk perception into action.

Going back to basic principles, Schmälzle et al. (2017) employed the so-called Science of Behaviour Change (SOBC). This produced the 'behaviour motivation hypothesis', that a reasonably accurate perception of personal risk stimulates people to take protective action and thus induces change in behaviour. This is confirmed by Qin et al. (2021) whose study of reactions to Covid-19 suggested that people were motivated to take action by the risk of infection but less so by their perception of its harmfulness. It was clear that the early stages of the pandemic, before vaccines were available, involved acute awareness of the risk of infection and a general desire to do

something about it, usually by following official advice, although there were contingents of people who were involved in 'deviant' behaviour. Despite these clear relations, both Qin et al. (2021) and MacPherson-Krutsky et al. (2023) found that, however good it was, risk perception did not necessarily motivate behavioural change. The latter authors also found that there was only a loose correlation between information-seeking behaviour and protective action.

Students of risk perception and action are practically unanimous that trust is an important factor in motivating response to invitations to change behaviour. Peng et al. (2019) found that trust in public institutions was a vital factor in explaining people's willingness to buy hazard insurance. Smith and Mayer (2018) noted that high levels of trust are generally connected with support for risk management policies and adaptation of behaviour. However, they also noted that lack of trust does not stop people from adapting their behaviour in the light of the need to confront risk. One reason for this inconsistency is that people who do not trust the authorities to manage risk may take matters into their own hands rather than ignoring the threat. These authors also discussed the 'social trap' model, in which lack of trust blunts the stimulus provided by risk perception. In any event, authors see the disaster manager as a key figure in building public trust (Samamdipour et al. 2019). As Ardaya et al. (2017) found, trust can only be built by constant hard work.

People tend to take action against risks based on how immediate and threatening they think the risk is to their daily lives (Bollettino et al. 2020). Bollettino and colleagues found that how long someone has lived in an area positively influences their response to risks, echoing findings from Drabek in 1986. Lo and Chan (2017) added that people are more likely to act if they believe the impact will be severe. In the UK, people were more likely to take action against flood hazards if they were involved in their local community and had talked about the risk with others. These insights can inform strategies to connect risk perception with action.

2.1.6 STRATEGIES TO CONNECT RISK PERCEPTION WITH ACTION

Marshall (2020) found little evidence of the emergence of a safety culture with respect to disasters, but she also found that people can assume a moral obligation to work together or on behalf of others to reduce collective risks. There is thus a good potential to tap the public's willingness to confront risk and build on their social capital (Uekusa et al. 2022).

As Heath et al. (2018) noted, clear, accurate and specific information can encourage people to act and reduce their sense of uncertainty. This last factor, of course, cannot be eliminated and many studies have noted how it tends to undermine public confidence in measures that have been suggested or taken. Fischhoff (2012) observed that ineffective official communication denies people the opportunity to make sound choices at all stages of the risk management cycle. Wachinger and Renn (2010) emphasised the value of discursive debate but noted that it must tread a fine line between overwhelming people with technical information and leaving them grasping for hard knowledge. There may be either deference to experts or distrust of them, depending on the political milieu within which the debate takes place. In either case,

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the public should not be faced with messages and information that are apocalyptic enough to create a sense of powerlessness (Lo and Chan 2017).

Researchers have sought out the factors that encourage people to seek information and act upon it or deter them from doing so. Educational level is one of these (Kim et al. 2020). In some studies (e.g., Wachinger et al. 2013) gender is also a factor, with women leading the way. The salience of a hazard in daily life is a third factor (Zhu and Yao 2019). This is sometimes known as its signal effect (Schmidt 2004). A fourth factor is willingness or ability to pay for risk reduction measures (Zhai 2006). Nevertheless, these authors also found that the attributes of a hazard had little effect on whether people took action against it or not.

In synthesis, Renn (1989) noted that, such is the complexity of perception and its link with action, initiatives to communicate risk in order to stimulate public action inevitably have uncertain outcomes, no matter how well designed they are. Nevertheless, as Wachinger et al. (2013) noted, measures to encourage public participation in risk management are probably the best means of building trust in the authorities and getting people to assume some responsibilities for the risks that they endure. Comfort et al. (2013) emphasised the importance of acting at the local level, where the hazard is concentrated, the need is most acute, and resources are likely to be scarce. A collective effort is needed to keep alive the memory of past impacts, stimulate the common response and embed risk management in local society. Exactly what measures are needed is a function of the local environment, the nature of the threat or hazard (including frequency and magnitude of impacts), local culture and the political milieu. It is thus very difficult to generalise and must be contextualised. This is the argument presented in this report.

2.1.7 SECTION CONCLUSION

The risk landscape that most people have to deal with is complex and often indeterminate. So is public perception of risks, which is therefore often inconsistent as it depends on a wide variety of innate and external factors. The interaction between these two sources of complexity means that risk management actions based on perception are difficult to predict. They depend greatly on local circumstances, including the way that risks are represented in the media and social circles. As a result, good practice in risk management will vary with local circumstances, including the nature and salience of particular risks. As with other aspects of civil protection, the answer lies in democracy and democratisation of the processes of confronting major risks. Sharing the burden between the authorities, communities and individuals enables it to be tackled collectively with a proper assumption of responsibility. This must be backed by the sharing of clear, reliable information and must be the result of serious efforts to create relationships of mutual trust.

The literature of this problem space has been dominated by individual psychological approaches that have foregrounded risk perception in the understanding of risk management behaviours. However, this literature has also shown us there is considerable variability and inconsistency in findings, and a lack of agreement on the mechanisms that translate perception into action. Because the psychological approach theorises the problem as being rooted in individual psychology, it searches

for solutions there also which underplays or ignores that individuals do not generally act alone and without reference to their social networks. This leads us directly to the RiskPACC Framework approach which has challenged the usefulness of understanding people's engagement with risk from the sole position of individual psychology and argued for a more sociological understanding (or psychosocial at least) and the need to combine different sources of knowledge for effective risk communication and learning. We turn next to consideration of participatory approaches and the value of local knowledges, followed by a discussion of collaborative governance which emerges as the recommended model of engagement.

3 PARTICIPATORY APPROACHES AND LOCAL KNOWLEDGE

3.1 The ongoing drive for community engagement

For decades, the disaster management sector has struggled to address local patterns of vulnerability. Since the early 1980s, this problem repeatedly has been attributed to the centralised, top-down way disaster management is organised (e.g., Maskrey, 1984). For forty years, practitioners and scholars have called for more localisation and community participation to focus on local knowledge and local action in disaster risk management (e.g., Wisner et al., 1977). Local knowledge is often thought of as the information, insights, and understandings that a specific community or group develops over time, which are closely linked to their environment or culture (Hermans et al., 2022). This knowledge usually seen as the result of practical experiences, observations, and interactions within the community, rather than formal education. Therefore, it is generally regarded as different from scientific knowledge (Gaillard & Mercer, 2012; Hermans et al., 2022). This also includes 'traditional' knowledge, which is a subset of local knowledge (Pimprikar et al., 2023).

Local knowledge is valued because it offers insights based on the strong connection that local communities have with their surroundings. It is therefore seen as an important addition to scientific knowledge (Agrawal, 1995; Hiwasaki et al., 2014), especially in areas prone to natural hazards (Choudhury et al., 2021; Haque, 2019) and in fragile environments where conventional methods may not work well (Hilhorst et al., 2015). Local knowledge is believed to provide a nuanced understanding of local social, economic, and political dynamics, helping to develop more effective solutions (Das, 2022). Combining local knowledge with scientific technologies and methods is increasingly viewed as a successful way to tackle complex problems that need context specific solutions (Hilhorst et al., 2015; Haque, 2019; Gaillard & Mercer, 2012; Hiwasaki et al., 2014). Moreover, involving local people in decision-making and empowering them to share their knowledge is believed to make initiatives more responsive to community needs and realities (Pimprikar et al., 2023; Boersma et al., 2022).

Therefore, local knowledge and local action are increasingly seen as crucial for improving community resilience and the ability to adapt, leading to more effective

disaster responses (Haque, 2019) and sustainable recovery efforts (Marchezini, 2018). This is reflected in disaster guidelines and standards. For example, the Sendai Framework for Disaster Risk Reduction 2015-2030 highlights the importance of combining traditional, indigenous, and local knowledge with scientific knowledge to assess risks and develop effective disaster management policies (Hermans et al., 2022). The ongoing focus on local knowledge and action in disaster management mirrors broader trends in neoliberal governance that aim to decentralise disaster management and promote resilience as a key strategy for coping with crises (Hilhorst, 2018). It drives the move towards localisation, where local knowledge and community engagement are integrated into DRR projects to make them more effective and sustainable (Lokot & Wake, 2022).

3.2 Challenges

Managing local knowledge and action for disasters effectively is not without challenges. It requires a thorough understanding of how DRR can effectively address social and economic inequalities, marginalisation, and environmental problems within communities (Das, 2022). Developing this understanding generally requires that several sources of knowledge be combined, including the professional knowledge of CPAs and the important local knowledge community members have. Accessing and managing these different forms of knowledge for DRR is not straightforward. For starters, local knowledge about DRR is always evolving and adapting to changing circumstances (Hilhorst et al., 2015). Additionally, because different local groups will know different things about the local area, there are many different 'local knowledges' within a community, which can sometimes conflict with each other (Mulder, 2023). It is challenging to manage multiple changing 'local knowledges' for DRR and to combine them with the evolving professional knowledge of CPAs. Some local perspectives may no longer be viable, and some may even increase vulnerability (Mercer, 2012). Often, there are no structures or resources to support long-term engagement between CPAs and citizens about local knowledge for DRR (Ziervogel et al., 2016). This lack of support is one reason why many CPAs only pay lip service to the importance of local knowledge and action in effective DRR (Trogrlić et al., 2021). In addition, when communities do participate in DRR, power dynamics and social inequalities often mean that not all local voices are equally heard (Mulder, 2020). The creation of knowledge is influenced by politics and power dynamics, such as those related to 'race' (Bian, 2022) or gender (Fordham, 1998; Andrabi, 2021; Rushton et al., 2019). This can lead to unfair practices in how knowledge is used and communicated, causing DRR to perpetuate social inequalities (Heeks, 2017; Mulder, 2020). Therefore, while local knowledge can provide valuable insights, it must be carefully managed to align with modern DRR practices and ethical considerations (Gaillard & Mercer, 2013; Bruun & Olwig, 2015). To effectively use local knowledge and action, it is essential to understand these complexities and manage the collaboration between CPAs and citizens well.

However, collaborations between CPAs and citizens pose many challenges. Effective collaboration requires strong communication and coordination systems (Larruina et al., 2019), which are often missing. Not only is sharing knowledge a challenge, but so is managing and using it effectively, as CPAs and citizens can experience information

overload (Kuo et al., 2015). A central problem, and the main focus of RiskPACC, is that CPAs and citizens often have different views and expectations about DRR. Bridging this knowledge gap between CPAs and citizens is essential but rarely happens in DRR. Without proper dialogue, conflicts and misunderstandings arise (Piazza, 2021; Sullivan et al., 2019; Larruina et al., 2019), and CPAs and citizens remain unaware of each other's actions or plans (Bang & Kim, 2016). This disconnect prevents both CPAs and citizens from fully understanding or committing to collaborative efforts (Sullivan et al., 2019). Failing to bridge this gap can result in DRR efforts that do not reflect the latest research or practical on-the-ground realities (Dwirahmadi, 2015).

To effectively manage local knowledge and action for DRR, it's essential to build long-term, positive relationships between CPAs and citizens, as well as other key stakeholders like civil society organisations and service providers. These relationships need to be supported with resources and built on transparency and clear rules to develop trust (Norton & Gibson, 2019). However, in practice, many collaborations lack continuity, urgency, commitment, and trust (Kuo et al., 2015). Additionally, important non-traditional players in DRR, like citizen groups or housing associations, are often overlooked by CPAs, even though they play a vital role in community resilience. This can lead to strategies that do not match local needs, resulting in a lack of community support (Russell et al., 2021; Dwirahmadi, 2015). The absence of clear, lasting structures for collaboration can also create a "Problem of Many Hands," where it's unclear who is accountable for certain actions or outcomes (Piazza, 2021; Russell et al., 2021). Different priorities, competition for resources, and power differences among local groups and between local, provincial, and national agencies can make collaboration difficult (Kapucu, 2014). Often, powerful stakeholders dominate the collaboration, sidelining smaller or less influential groups and suppressing diverse viewpoints needed for well-rounded solutions (Dwirahmadi, 2015). This power imbalance can damage the trust and cooperation needed for effective collaboration (Sullivan et al., 2019). The issue is often made worse by a lack of effective leadership, mediation, and consensus-building, which are crucial for creating and implementing unified strategies (Dwirahmadi, 2015).

There are also broader challenges that need to be addressed. Keeping a diverse group of stakeholders working together involves significant costs, such as time, effort, and resources (Parker et al., 2020). Usually, more resources are allocated to the immediate response to disasters rather than to DRR (Kapucu, 2014). Limited resources can cause disagreements over priorities and resource distribution (Kuo et al., 2015), leading to competition instead of collaboration (Sullivan et al., 2019; Kapucu, 2014), as well as inefficiencies and duplication (Larruina et al., 2019). A lack of consistent political support for participatory DRR can result in inconsistent backing and resource allocation, which is a major obstacle (Ziervogel et al., 2016; Mukhlis & Perdana, 2022). Bureaucratic obstacles and ingrained institutional behaviours can also impede the adoption of new or progressive DRR strategies (Mukhlis & Perdana, 2022), prevent effective cooperation across sectors and agencies (Dwirahmadi, 2015), and block the integration of inputs from more flexible civil society partners (Larruina et al., 2019). Additionally, legal constraints can limit the ability of stakeholders to try new

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approaches (Sullivan et al., 2019). Given these challenges, this report suggests a slow, gradual approach to involving citizens and using local knowledge in DRR, allowing for incremental changes to the broader governance structure to support this method.

3.3 Collaborative Governance

Collaborative governance is a form of governance where different groups, including public agencies, come together in shared forums to make decisions based on agreement (Ansell and Gash, 2007). It involves processes and systems that allow various government bodies, non-governmental organisations, businesses, and citizens to share knowledge and resources, making it easier to work together effectively. This approach focuses on building positive relationships and having regular dialogue, encouraging inclusive participation, balancing power differences, providing supportive leadership, ensuring transparency, and setting clear rules. The goal is to move away from working in isolated and fragmented ways, which can make it difficult to provide public services effectively, especially in dealing with complex issues like disasters (Kalesnikaite, 2019). It also aims to bridge the gap between CPAs and citizens, preventing misunderstandings and ensuring actions meet local needs (Bang & Kim, 2016).

TABLE 3: THE BENEFITS OF COLLABORATIVE GOVERNANCE

It facilitates the inclusion of: • diverse perspectives • a broader range of expertise • local knowledge	this leads to	• new insights • new approaches • holistic, adaptive DRR • tailored solutions
It improves: • communication channels • data and information sharing • dialogue between DRR stakeholders • pooling of expertise and resources	this leads to	• joint risk assessments • mutual understanding • shared goals and consensus
It facilitates: • broad and diverse DRR engagement • more collaborative and inclusive action • continuous stakeholder interaction	this leads to	• constructive long-term relationships • perceived legitimacy and trust • enduring structures for collaboration • increased participation
Overall, it enables: • better coordination and integration	this leads to	• better strategies • more outputs • better outcomes • better alignment with local needs • greater flexibility and adaptability • more support from the community

Collaborative governance is most effective when relationships, protocols, and communication channels are developed and strengthened when there is no crisis going on (Kapucu & Garayev, 2011). This is because working together during a crisis comes with unique challenges like urgency, uncertainty, and high stakes, which require quick and effective responses from various organisations (Nohrstedt et al., 2018). The urgency and pressure of a crisis make it a poor time to start new collaborative efforts around risk communication. The RiskPACC framework presented in the next section provides guidance for developing effective relationships and processes for community engagement in DRR, specifically: risk communication.

4 THE RISKPACC COLLABORATIVE FRAMEWORK

4.1 Introduction and Overview

The objectives of the Framework (noted under Work Package 4 Framework Development) were to build capacity in CPAs and Citizens for collaboration in disaster risk management (DRM) in order to close the RPAG, and to develop a consolidated conceptual and methodological framework for RiskPACC to guide RiskPACC's development and to support its implementation in practice.

The RiskPACC Collaborative Framework is organised around 4 user-friendly modules: Understanding, Sharing, Relating and Building. There is an inherent logic to the underlying argument which says, before you begin building risk communication processes, you first need to understand both the risk context and the social-political context; you then need to open up sharing opportunities in order to understand different perspectives and then develop processes for stakeholders to relate; only then will you be in a position to build risk communication approaches and methods which have the widest utility. This is a linear description of one route through the Framework, but it is possible to work with the modules singly or in any combination that works in context. We discuss each of the Modules below and this is accompanied by extra material to provide detail in the Annexes.

The basic Framework (see Figure 2) was developed early in the project and then opened to comment and editing from within the RiskPACC Consortium and then externally in various fora. Its content was modified slightly over time as the RiskPACC activities and outputs provided useful insights, and its graphical design was changed to align with the RiskPACC colour palette and platform (see Figure 3). The Framework has been well received within the project and externally.[3]

[3] A lengthier discussion of the Framework modules can be found in Fordham et al 2023 D4.3 DRAFT RISKPACC COLLABORATIVE FRAMEWORK. RiskPACC Project https://www.riskpacc.eu/.

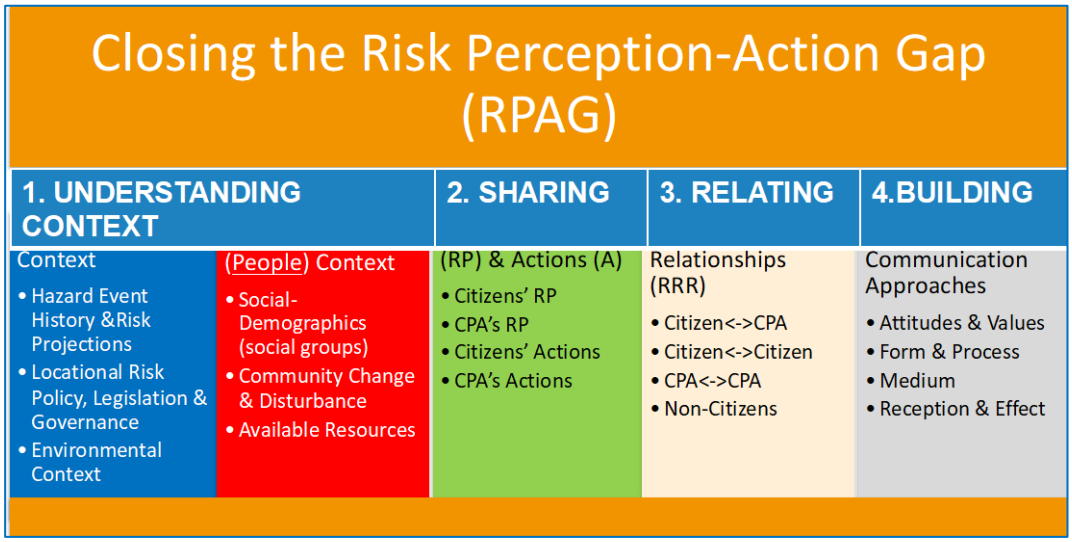

FIGURE 2: THE ORIGINAL RISKPACC FRAMEWORK DESIGN.

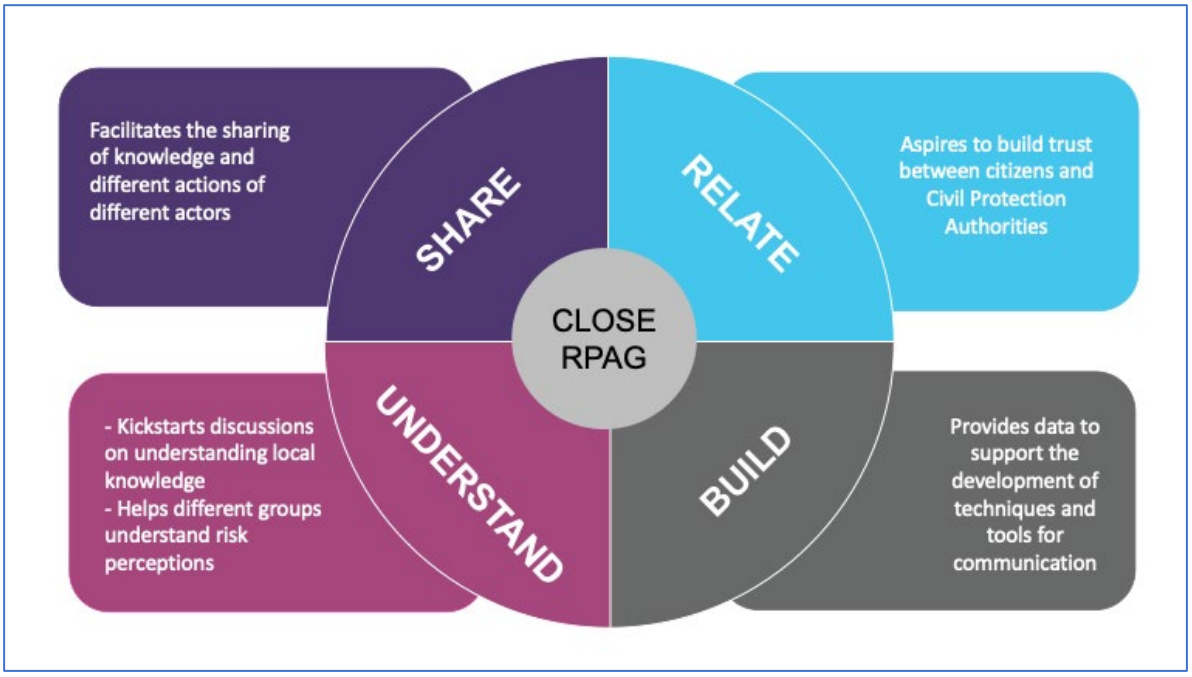

FIGURE 3: THE RISKPACC COLLABORATIVE FRAMEWORK

4.2 Understanding the Risk Information Context

Understanding the risk information context sounds like an obvious first step but, in terms of the RiskPACC Framework, it is very much about unpacking how different stakeholders understand the risks to help comprehend why stakeholders might hold particular beliefs and why they undertake particular actions.

4.2.1 HAZARD EVENTS

One of the strongest indicators of hazard awareness and willingness to act on risk is prior experience of hazard events (Burton Kates and White; Kuhlicke et al 2020;

Becker et al 2017). However, that can bring limitations when people act on the basis of previous experiences when the current hazard exhibits different characteristics. This was labelled the 'prison of experience' by North American Geographer, Robert Kates (1962:140). The knowing when and where hazard events have materialised is important in understanding previous actions which have been taken and possible future ones.

Nevertheless, despite the foundational work linking experience, awareness and action, it is not a simple causal relationship and has been challenged and developed subsequently (Wachinger et al 2013). Thus, it is never clear what is driving risk perception and willingness to act: it might be aspects of the hazard itself, aspects of the perceiver, or mental shortcuts (heuristics) which enable decision making to happen in the absence of full knowledge, or any in combination (Siegrist and Árvai 2020).

4.2.2 Policy, Legislation and Governance

Policy and legislation provide frameworks of expectations, possibilities and limitations. However, citizens may not be familiar with what is available or required and therefore may misunderstand why authorities act the way they do. They may not know the mandates of various organisations that come under the heading of Civil Protection Authorities and again may expect certain actions from them which they are unable to carry out. An illustration of that difficulty is presented in Box 1.

The Somerset Levels in the UK is a protected historic wetland landscape that is close to sea level and dependent on a range of cultural and water management practices. It is a Ramsar site for its internationally important wetland features, a Special Protection Area (SPA), and contains 12 Sites of Special Scientific Interest (SSSI) (Natural England 2013). In extreme rainfall events there is widescale flooding.

The floods of 2014 became a highly politically volatile event which had a major focus on the issue of dredging. A number of farmers and citizens at risk of, or experiencing, flooding called for dredging of the rivers which they believed would solve the flood risk and which had not been carried out by the responsible body, the Environment Agency (which can be seen as a CPA in this context because they have responsibility for managing flood risk). However, while dredging rivers may seem like a commonsense response, it is not necessarily the best solution based on scientific evidence (CIWEM 2014; GOV.UK 2014). As local citizens and farmers blamed flooding on the lack of dredging (Somerset County Gazette 2024), politicians became involved because of the public outcry and their policy stance shifted as the 2014 flood continued. George Monbiot (UK environmental campaigner), in a rhetorical piece for The Guardian newspaper documented the policy shift as initially politicians stand by the scientific evidence that dredging is

damaging to protected wildlife and is at best a temporary solution, and then announce a new dredging programme (Monbiot 2014).

This illustrates the complex legislative, policy and governance context of hazard management decisions in which different stakeholders may have limited access to evidence on which to base their perceptions and expectations of action.

The RiskPACC Framework could have helped this process by encouraging greater **understanding** of the risks and the situations of different stakeholders; enabling the **sharing** of different perceptions of the risk and options for action; making space for oppositional stakeholders to **relate** and build trust relationships; and finally, to collaboratively **build** tailored risk communication and action solutions.

BOX 1: COMPETING PERCEPTIONS OF RISK AND APPROPRIATE ACTIONS IN THE SOMERSET LEVELS, UK.

4.2.3 ENVIRONMENT

The physical/ biological contexts shape opportunities and limitations for action on risk. If people occupy floodplains, then they are likely to be exposed to flood risk. However, different stakeholders may have access to different information sources, and this may influence their understanding of risk. It is useful to know what information sources are available, and to whom, and how this might shape their plans to act upon the risk information.

The presence of physical mitigation influences risk attitudes. This has been found to be the case in relation to flood hazard where the presence of flood walls or embankments may be understood to have removed the risk. Those with more complete understanding are aware that physical flood mitigation is designed to protect up to a given level of risk and this can always be overtopped (Ludy and Kondolf 2012; Tyszka and Konieczny 2017). Thus, preparedness to act must always be considered.

4.2.4 ORGANISATIONS INVOLVED IN EMERGENCY MANAGEMENT

4.2.4.1 CPAs (government) – different types, their mandates, how they work together

Effective disaster risk management requires collaborative efforts among public authorities at different levels – and across different sectors - to address the challenges posed by disasters. The Sendai Framework for DRR advocates for linking DRR with development and recovery efforts (UNDRR, 2015), requiring collaboration across sectors, disciplines, jurisdictions, territorial boundaries, and levels of authority (Liou, 2022). It is useful for both CPAs and citizens to understand which local, provincial, national, and even international authorities influence disaster risk management in their local areas, what their mandates are, and how they work together.

National government generally sets DRR policy, mobilises resources, and coordinates efforts between different provinces and local governments. (When applicable)

international government (e.g., the European Union) supports these efforts with expertise and assistance. Local government is primarily responsible for local actions and understanding local needs and conditions (Kapucu, 2014). Local government plays a key role in all phases of emergency management (Col 2007), coordinating with other local public agencies, nonprofits, and for-profit organisations to prepare for and respond to disasters (Kapucu 2012).

4.2.4.2 Non-governmental stakeholders – CSOs, service providers, businesses

Non-profit and for-profit organisations can play a core role in disaster risk management, collaborating with government agencies to enhance preparedness, response, and recovery efforts (Kapucu, 2007, Izumi & Shaw, 2014). Non-profits include civil society organisations (CSOs), non-governmental organisations (NGOs), charities, and volunteer groups. For profit organisations include businesses, such as critical infrastructure[4] and service providers. It is useful for both CPAs and citizens to understand which non-profit and for-profit organisations are (or could be) involved in disaster risk management in their local areas, what roles they (could) perform, and how they (could) work together.

4.3 Understanding the Social Political (People) Context

While CPAs routinely access hazard information, they do not often access information on the social demographics or local social-political context in which they work. However, this can provide valuable insights into the capacities and resilience of local communities (FEMA 2011: 6). Similarly, citizens differ in the level of knowledge of localities. Many of them have detailed knowledge and networks not available to CPAs and can make valuable contributions however, it has also been found (Siegrist and Gutscher 2006) that many respondents are unaware of the existence of flood risk maps.

4.3.1 COMMUNITY CHANGE AND DISTURBANCE

When CPAs think about the populations that they help they may unintentionally see them as unchanging and stable. However, levels of in-migration, out-migration, community conflict, or economic or political turbulence, can all influence an individual's vulnerability and willingness to act; whether a person is directly or indirectly affected by them. This element links to the Relating module below which discusses intra community factors whereas the current discussion tends to relate to the effects of inter-community or other external factors.

Levels of social cohesion have been found to be significant in protecting against the health and wellbeing impacts if disasters (Greene et al 2015) and engendering community resilience. Townshend et al (2015: 936) conclude that:

[4] Some critical infrastructures are government owned and led or managed through private-public partnerships.

> *"Policies and programmes that recognize the significant positive association between cohesion and resilience might therefore foster community-based activities that develop social cohesion and thereby indirectly promote resilience. Conversely, policies and programmes that target resilience in the absence of local social cohesion may be self-defeating in that cohesion is a necessary driver of some but not all of resilience." (Townshend et al 2015: 936).*

This is backed up by research on social capital and disasters (Aldrich and Meyer 2015; Aldrich 2010, 2012) and the systematic review by Sobhaninia (2024) which identified the most influential social cohesion variables in disaster recovery as social capital, sense of community, social participation and place attachment. Social cohesion and levels of social capital can be disrupted through changes in community structure before, during and after disaster events but equally it can have positive benefits. The act of searching for, sharing and receiving information in relation a particular disaster event can give rise to emergent social cohesion, especially via social media (Chao et al 2020) and the phenomenon of pro-social behaviour (Rodríguez et al 2006).

Knowing the community characteristics can help CPAs and citizens to estimate the possibilities for support in advance of a disaster event. These various factors are further illustrated in the Wellington Regional Emergency Management Organization (WREMO) Case Study (See Annex 6).

4.3.2 AVAILABLE RESOURCES

Levels of human, social, economic and political assets can influence knowledge levels, and ability or willingness to act or even to seek knowledge. If subgroups within a community do not share the dominant language, or are managing several part-time and insecure jobs, they may have limited ability to engage meaningfully in community meetings. For example, Trentin et al (2023: 1), in their review of the literature on the vulnerability of migrant women in COVID-19, found they experienced six vulnerability factors: legal status, poverty conditions, pre-existing health conditions, limited agency, gender inequality and language and cultural barriers. These then resulted in nine impacts: worsening mental and physical health, poor access to care, fraud, exacerbation of poverty, gender-based violence, risk to education, and unmet religious needs.

If the community which CPAs serve has a large elderly population, there may, on the one hand, be less inclination to attend community knowledge exchange meetings at night or, on the other hand, there may be more capacity to spend time in community groups to act on managing risk (Howard et al 2017).

Understanding the local demographics is important for providing clues to possible barriers or opportunities to plan for, mitigate or resolve disaster impacts.

4.3.3 SOCIAL DEMOGRAPHICS: UNDERSTANDING DIVERSITY

4.3.3.1 Understanding the local people context through the lens of social identity

This section is particularly for readers (e.g., CPAs) who are new to exploring how best to engage diverse communities in DRR.

People have different perspectives, needs, capabilities, and constraints which influence their beliefs and actions in DRR. Therefore, approaching "citizens" as a homogeneous group is unhelpful but may be the default position for CPAs who do not want to be seen to unfairly privilege particular groups. However, without recognizing how positionality affects different groups, disaster risk reduction efforts are likely to be suboptimal. Risk perception and action are shaped by context specific learning over time. This is influenced by culture and personal experiences – factors that are connected to people's social identities, e.g., their social groups (demographics).

These identities underpin a system of stratification around which society is organized. They influence people's chances and choices in life and, therefore, their risk perceptions and actions. Analysing risk perception and action through the lens of social groups (demographics) can reveal helpful patterns that CPAs can use to 1) select participants to engage in co-creation around DRR and 2) inform their risk communications. Although it is common to have lists of typical vulnerable people (related to age, gender, race and ethnicity, socio-economic status, abilities, citizenry and migration status, and other factors) it is important to recognize that identified groups are not necessarily inherently more vulnerable but may be made so by governance processes or the exercise of power and privilege. Thus, it is less a matter of social condition than social process which means there are mitigative actions that can be taken.

Annex 4 "The RiskPACC Framework: Working with Different Communities" (below) provides nine detailed examples of what the four framework modules mean for specific social groups: CPAs, volunteers, business owners, women and girls, older people, children, disabled people, migrants, and hard to reach groups. This can provide CPAs with an early indication of the type of consequences disasters have for various social groups and can provide citizens groups a better understanding of how disasters may affect themselves or others different from themselves. CPAs and citizens typically do not hold data on these groups and so working across institutional departments or with external representatives (Third Sector[5]) can provide useful data on which to plan. However, analysing risk perception and action through the lens of individual social groups (demographics) is highly reductionist: it will yield a rough outline of the local people context, but not accurately reflect its nuanced reality. Furthermore, analysing DRR solely through the lens of social identities risks reifying certain groups as

[5] The "third sector" refers to organisations and activities that are not part of the government (public sector) or private businesses (private sector). This includes non-profit organisations, charities, community groups, and social enterprises that work to address social, environmental, and cultural issues. These organisations often rely on volunteers, donations, and grants to operate.

inherently vulnerable and others as inherently resilient, shifting the 'sources' of vulnerability and resilience from the social system to the social groups. This can have the side effect of obscuring people's capabilities and constraints around DRR.

The next section below discusses a more advanced and more nuanced approach.

4.3.3.2 Understanding the local people context through an intersectional lens

This section is for readers (e.g., CPAs) who are more experienced when it comes to engaging diverse communities in DRR.

Many CPAs are mandated to specifically target so called "vulnerable groups". As outlined above, some social groups experience unequal treatment based on their social identities. The EU recognises the following protected grounds: sex, racial / ethnic origin, religion / belief, disability, age, and sexual orientation. However, individuals each have multiple social identities that jointly shape their lived experiences. Furthermore, people's lived experiences are also shaped by wider socio-economic and geographical factors, such as education, income, occupation, employment, housing, the population composition of their local area, the built and natural environment, levels of social connectedness, features of specific geographies (such as urban, rural, and coastal), experience of homelessness, whether they are criminalised, or face discrimination on other grounds (e.g., gypsies). (See Figure 4, below).

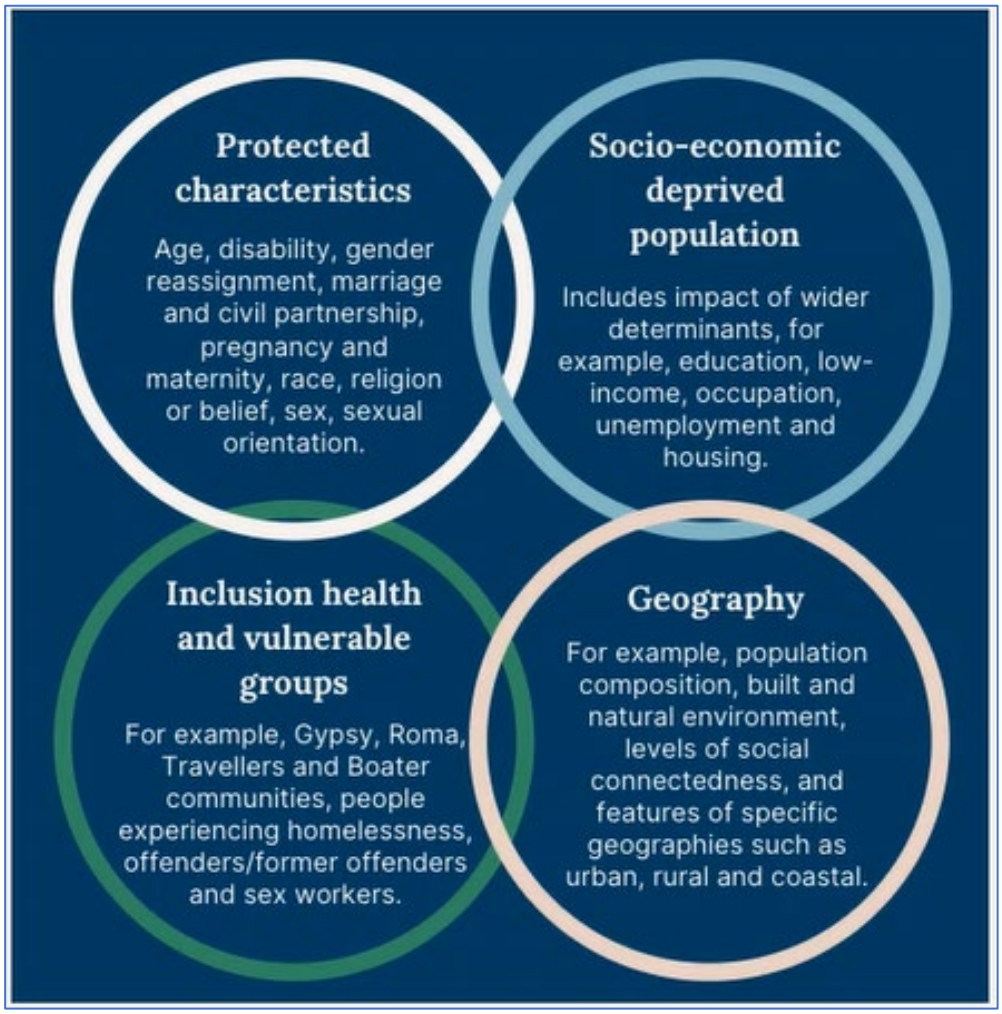

FIGURE 4: HOW PROTECTED CHARACTERISTICS INTERSECT WITH OTHER DIMENSIONS OF THE LOCAL PEOPLE CONTEXT AND THE LOCAL RISK CONTEXT. SOURCE: NICE AND HEALTH INEQUALITIES HTTPS://WWW.NICE.ORG.UK/ABOUT/WHAT-WE-DO/NICE-AND-HEALTH-INEQUALITIES, ADAPTED FROM THE KINGS FUND HTTPS://WWW.KINGSFUND.ORG.UK/INSIGHT-AND-ANALYSIS/LONG-READS/WHAT-ARE-HEALTH-INEQUALITIES.

Therefore, social identity groups are not monolithic – there is great diversity within each group as intersecting elements play more or less of a role. People's perspectives, needs, capabilities, and constraints around DRR do not map neatly onto single social identities. Intersectionality is a theoretical framework and analytical tool for understanding and addressing the complexities of social identities and how they intersect to create unique experiences of oppression and privilege. It emphasises that individuals have multiple facets to their identities that interact in various ways and cannot be examined in isolation from one another.[6]

An insightful case study by McKinzie (2017) shows the way social class, gender and race intersect with distinctive sociohistorical contexts (Joplin, Missouri and

[6] Although the term 'intersectionality is linked to Kimberlé Crenshaw (1989), the concept had been applied by black (especially North American) feminists in prior decades (see Collins and Bilge 2020).

Tuscaloosa, Alabama) to produce particular perspectives on two tornado disasters in 2011. In addition, a contextual analysis by Kuran et al (2020) refers to 'vulnerable situations' rather than vulnerable people in a study of four countries from the BuildERS project[7] – Estonia, Finland, Norway, and Sweden – and the way they each officially describe vulnerability and identify vulnerable groups in national public documents and surveys.

> *"Vulnerable situations [8] revolve around the question about who is, for what reason and in which situation vulnerable." (Kuran et al 2020: 6).*

Annex 4 "THE RISKPACC FRAMEWORK: WORKING WITH DIFFERENT COMMUNITIES" (below) provides a concrete example of how the four RiskPACC framework modules can be applied using an intersectional approach. The example looks at how gender intersects with social class, ethnicity, religion, and pregnancy in the context of disaster healthcare.

4.4 Sharing Risk Perceptions and Actions

The conviction that if CPAs provide more information of the right kind, they will bring citizen risk perception and action in alignment with their own, remains a strongly held belief. However, the research evidence does not support this (Rufat et al 2020; Eriksen & Gill, 2010; Wachinger et al., 2013; Fünfgeld, Lonsdale, & Bosomworth, 2019). Conceptually this is described as the 'deficit model' (Wynne 1993; 2006)[9] and it is a foundational challenge we aimed to address in RiskPACC by identifying the lack of two-way communication as a major contributor to the RPAG.

The RiskPACC Framework emphasises the importance of understanding the and actions of all actors through a sharing process. The possible ways in which CPAs and citizens might share their insights and views are highly contextual and need to be agreed through discussion.

4.4.1 Citizens' Risk Perceptions

Sharing will help establish whether, and to what extent, there is variability in how citizens characterize the risks in their locality (e.g. attitudes around fatalism, blame, agency, etc) and open up spaces for exchanging more information.

While it is common to imagine citizens' perceptions are less reliable than those of professionals, in many cases local people have unique insights into the risk context and may be experts in relevant fields (see Wynne 1992 for an example). The case study presented in Box 1 of the flood risk in the Somerset Levels is an example of this

[7] https://buildersproject.eu/
[8] With reference to B. Wisner, P. Blaikie, T. Cannon, I. Davis 2024 At Risk. Natural Hazards, People's Vulnerability and Disasters, second ed., Routledge.
[9] "The deficit model was a name first given to the conventional approach by Wynne in a draft paper criticizing it, for a workshop in Lancaster in May 1988 of the Economic and Social Research Council-Science Policy Support Group research groups under the phase I Public Understanding of Science Research Initiative" (Reference 8 in Wynne 1993: 335).

where many local people (and some externals) believe the risk to be generated by a lack of dredging when in fact the risk lies primarily in extreme rainfall but also upstream in the land management of the higher catchment area.

4.4.2 CPA's Risk Perceptions

Sharing will also identify how CPAs characterize and measure the risk and present opportunities for knowledge exchange with citizens to create a more aligned understanding.

CPAs tend to have access to more scientific and modelled data (although this is changing now that so much is freely available online) but they may lack local grounded knowledge or may have other limitations. For example, in floods that hit Perth, Scotland in January 1993 the flood warnings targeted those properties flooded in a previous event and so the flood risk to other properties outside that boundary was not recognized (Ketteridge and Fordham 1998).

4.4.3 Citizens' Actions

Many citizens have no knowledge or experience of emergency management and what CPAs do. However, there are organized groups of volunteers focusing on DRR worldwide and so it is a good first step to find out if there are organized groups in the relevant locality. These are mostly focused on a particular hazard, event or issue but some have a more general approach.

In the UK there is an organized network across England and Wales which focuses on flood risk. The National Flood Forum (NFF) (https://nationalfloodforum.org.uk/) is a charity which supports communities to organise themselves to protect against flooding. The NFF supports local communities in setting up or developing Flood Action Groups which do voluntary work to map hazards, identify key issues facing their community and interface with the various authorities concerned with floods.

In the US Community Emergency Response Teams (CERT)[10], under the auspices of FEMA (Federal Emergency Management Agency), are trained in basic disaster response skills. These operate across all states and include a diversity of volunteers. There is a Teen CERT in Texas which trains teenagers to do this work (see an informative video here: https://youtu.be/80twsCr7oyc).

Such groups share knowledge and enable more informed actions by citizens but also help support government agencies when there is peak need.

[10] https://www.fema.gov/emergency-managers/individuals-communities/preparedness-activities-webinars/community-emergency-response-team#:~:text=The%20Community%20Emergency%20Response%20Team,Light%20search%20and%20rescue

4.4.4 CPA's Actions

Sharing what actions have been taken by CPAs previously, or what are their plans going forward, can help citizens understand emergency processes before an event occurs. It can also help citizens understand the limitations on what CPAs can do under their mandates and so manage expectations. Structural defences might affect how people perceive risk because they may think these structures eliminate all danger, even though they are built to handle only a certain level of risk (Ferdous et al 2020). Alongside this, citizens may be able to offer local knowledge which can improve plans and subsequent actions.

4.5 Relating – Risk Reduction Relationships

> *"[T]he best explanatory concepts for understanding public responses to scientific knowledge and advice are not trust and credibility per se, but the social relationships, networks and identities from which these are derived." (Wynne 1992: 282).*

The previous Framework module focused on the importance of sharing perceptions, ideas and planned actions. However, without the development of trust building relationships between actors, emergency response may be suboptimal (Bonfanti et al 2024; Shlomo et al 2019). Usually, people and CPAs don't interact until there is an emergency, and even then, the interaction is often indirect. When citizens know nothing of emergency management professions and processes, they may react with hostility towards emergency communications which they do not understand.

4.5.1 Citizen-CPA

Trust between citizens and CPAs has been found to be a significant influence on risk perception and action Freudenburg 1993; Fischhoff 1995). Where only incomplete information is available, trust is often used as a proxy, which enables a message to be received, believed, and acted upon by individuals (Siegrist 2021; Paton 2008). Thus, if citizens trust CPAs and other governmental organisations, they may receive and act on the information more positively (Siegrist, 2021; Tumlison et al., 2017).

It would be useful for CPAs planning to engage with citizens to review any previous engagements to determine whether they showed collaboration or conflict and what was the level of trust. Freudenburg (1993) focuses on trust in institutions that are responsible for risk management related to nuclear waste. He finds trust to be a vital factor that influences risk perception (Freudenburg 1993: 480).

4.5.2 CPA-Citizen

How CPAs regard citizens will influence how disaster responses are planned for. There is a strong culture of CPAs regarding citizens as essentially passive and waiting for help from others or with a tendency to panic (Hobbins and Enander 2015; Perry and Lindell 2003; Sheppard et al 2006; Quarantelli 1954) – what Wester refers to as

'fight, flight or freeze' (Wester 2011). Regular engagement with citizens can help broaden that perspective and offer ways for more constructive relationships to be built.

Relationships can be influenced by previous actions such as whether there is already a history of collaboration or conflict and whether there is a basis of mutual trust as has been discussed in the previous section.

4.5.3 CITIZEN-CITIZEN

Before focusing on a specific location, it's important to understand its social and political context. This helps determine if there are existing social networks and social capital that can support risk reduction efforts. There may already be civil society groups focused on hazards, especially if the area has a history of disasters. These groups can be crucial after a disaster and, if risks remain, communities might want to keep these groups active to improve preparedness. Aldrich (2010) calls these reserves of social capital "engines of recovery" and they are a key part of the WREMO model in New Zealand (see Annex 6). However, factors like community conflict and the nature of the hazard can hinder the development of social capital.

Uekusa et al. (2022) introduce a special type of social capital called "disaster social capital." They describe it as short-term, specific to the situation, based on experiences, inclusive, and capable of bringing about change. This kind of social capital may not last long after the disaster ends but can be very powerful during the crisis. Disasters caused by natural hazards usually bring people together (Rodríguez et al. 2006; Peek 2011). However, the media often promotes stereotypes of panic during disasters, even though many years of research show that panic only happens under certain conditions (Quarantelli, 1960, 1972, 2001). Uekusa et al (2022) claim:

> *"community cohesion, trust in institutions and other residents, civic engagement, and participation in social activities following technological or natech disasters, which are all critical components of social capital […] are far less likely than in disasters triggered by natural hazards" Uekusa et al 2022; 65).*

Thus, if trust is not present before a disaster or is lost during a disaster, then building constructive risk reduction relationships will be much more difficult.

4.5.4 CPA-CPA

In addition to CPA-Citizen relations, there is another arena of social relations: that between different parts of the Civil Protection Institutional structures. The same kinds of questions can be asked: whether there is a history of collaboration and cooperation or conflict and difference, or just poor operational practice; coordination failures do happen (Aldrich 2019; Boin and Bynander 2014). Pollock (2013) reviewed 32 major incidents (disasters) in the UK and a common finding was that previous lessons and reports, which offered analyses of problems in interoperability, were not acted upon. However, there is not a large evidence base for 'how emergency teams operate in high-risk and complex environments' (Power 2018: 488). The establishing of links and operating agreements before an event is crucial and there are many procedures in place, research into the impact of cultural differences between different elements of

the Civil Protection environment is also limited. This points to a need to open up conversations beforehand to minimise clashes and difficulties.

4.5.5 Non-Citizens

Most of the discussion in this report thus far has concerned CPAs and citizens but some of those most at risk are people included in the category of 'non-citizens' (Kelman et al 2008; Dutta 2020; Guadagno 2020; Kuran et al 2020; Pongponrat and Ishii 2018; Arora and Majumder 2021; Teo et al 2019; Gares and Montz 2014; Pardikar 2021). Non-citizens include "permanent residents, migrants, refugees, asylum-seekers, victims of trafficking, foreign students, temporary visitors, other kinds of non-immigrants, and stateless people" (UNOCHA 2006: 5). Some individuals in this very diverse group have lived in the area for an extended period (e.g., permanent residents). They have become fluent in the local language, deeply familiar with the customs and laws, and have established strong local connections. They are easy to reach and engage in two-way communication. However, other non-citizens may be hard to reach (e.g., undocumented migrants) because they may have no fixed address, they may lack ability in the local language, they may fear or reject official institutions in whom they lack trust and may seek to avoid identification; in the latter case, they may not register on official data sources. They may be exposed to greater risk because of a number of limitations in the following: language proficiency, knowledge of local laws and institutions, social networks, mobility restrictions, discrimination and hostility (Guadagno et al 2017: 9). Engaging them in two-way communication[11] may be challenging unless it is carried out indirectly through representatives of the various categories. Seeking advice from relevant government agencies and ministries may highlight where categories of non-citizens may need extra support in managing disaster risk.

4.6 Building – Risk Communication Approaches

> *Including representatives from at-risk populations in emergency planning can inform the types of risk communication strategies, as well as the approaches for message dissemination, that are needed. In addition, involving these representatives in the development and review of communication materials can ensure that messages are appropriately crafted. (Meredith et al 2008: xi).*

RiskPACC's methodology for building effective risk communication approaches depends upon the opportunity for two-way communication to create the space for understanding and sharing different perspectives and underlying rationales. The RiskPACC approach is echoed in the findings of Meredith et al (2008) which map well onto the RiskPACC Framework modules as shown in Table 4.

Table 4: Key Findings for Risk Communication for At-Risk Populations

Key Findings for Risk Communication for At-Risk Populations	Link to RiskPACC Framework

[11] RiskPACC's Czech Republic Case Study partner, CAFO, successfully reached out to include some Ukrainian refugees in their Co-creation Lab.

	Modules
Effective risk communicators must be trained to understand emergency risk communication, know their stakeholders, and be trusted in the community.	UNDERSTANDING
Evaluating the implementation of risk communication programs and impact of risk communication efforts is critical.	SHARING
Community-based participation strengthens emergency preparedness, response, and recovery for at-risk populations.	RELATING
Training through exercises and drills that include risk communication for at-risk populations may improve response to future disasters.	BUILDING
Reaching at-risk populations requires the use of multiple channels, formats, and tools.	BUILDING

(ADAPTED FROM MEREDITH ET AL 2008: XI-XIV).

To achieve effective risk communication, the RiskPACC Framework suggests the following criteria which need consideration: attitudes and values; form and process; medium; and reception and effect; these are explained below.

4.6.1 ATTITUDES & VALUES

In the absence of regular two-way communication, CPAs may be unaware of what citizens expect from them. Meeting or managing those expectations can remove misunderstandings and bad feeling. For example, if citizens expect authorities to knock on their door to warn them of an impending event, they will be disappointed if they only hear about it on the television or radio or even through a text. Similarly, if CPAs expect citizens to act in certain ways, without knowing beforehand if this is possible or desirable for them, then there are likely to be disappointments and possibly a misinterpretation of motives.

Additionally, the attitudes of CPAs to citizens and vice versa can affect what seems appropriate action.

> *"[W]hen citizen preparation and government efforts are in sync, then communities are more resilient to hazards. When citizens and governments are not aligned, dealing with the aftermath of hazards is slower and more expensive" (Donahue et al 2014: 90S)*

4.6.2 FORM & PROCESS

The form of risk communications must match the need and the capacity to access and act. A major distinction is made between technological/digital and non-technological/-digital. Reliance on social media, SMS or other means which require computers or

smart phones can exclude some parts of the population including those who lack digital skills, (which include, but are not limited to, the elderly) or those who cannot afford to use them. These means are more typically accessed by younger demographics. The use of digital and social media has expanded the reach of risk communicators but has also opened up the chance of an increase in the circulation of incorrect message, rumours and 'fake news'[12]. Gupta et al (2013), analysing viral content on Twitter during the 2013 Boston Marathon Blasts, found that rumours and fake content accounted for 29% of the most viral tweets; 51% comprised generic opinion and comment; and only 20% were assessed as true, factual information. However, Guess et al.'s (2016) study into the impact of untrustworthy websites during the 2016 US election, found that the consumption of untrustworthy websites does not crowd out the consumption of other hard news (Guess et al 2016: 472). The loosening of adherence to social norms when interacting in virtual environments can result in damaging negative emotional reactions and aggressive behaviour which make social media exchanges difficult to regulate (Tagliacozzo and Magni 2018: 14) and which can be demotivating for risk communicators.

The more channels used for risk communication, the greater is the probability that a given individual will receive the message (National Research Council 2013: 3). However, the next stage is invariably the seeking of confirmation of the message and that is when people may use both digital and non-digital means. A person may simply ask someone else they know and trust (family, friends, neighbours) or may turn to social media. Dargin et al (2021) found considerable variability across socioeconomic groups in the types of social media platforms that people used. Once again, this is related to trust and the perceived reliability of the information provider but also that people favour media that supports their pre-existing world view (Guess et al 2016). Therefore, once again, consideration must be given to the demographics of the target population as different social group categories (according to gender, age, race, ability, etc) can affect how risk communications are interpreted (National Research Council 2013: 4).

Whether a centralised or decentralised approach should be adopted is a falsely dichotomous question because they both offer different possible outcomes and could present the best outcome if used together. Centralized systems, including national government level official warning systems, may have the potential to maintain control over content, incorporate efficiency gains, and carry authority; yet they may not be as effective in reaching certain social groups as more decentralized, localised and targeted systems. On the other hand, decentralized systems can be the means of greater collaboration and communication around risk topics (Hicks and Barclay 2018) but may comprise much duplication and a lack of coordination (Scott and Tarazona 2011).

In considering the value of interpersonal communication, Iain Stewart (2024) describes (Figure 5) a process (from the 1980s to the 2020s) of increasing levels of engagement

[12] The term 'fake news' is attributed to Craig Silverman in 2016. See Mike Wendling 'The (almost) complete history of 'fake news'' 22 January 2018, BBC News, https://www.bbc.co.uk/news/blogs-trending-42724320

between risk communicators and the public, beginning with a top-down deficit model[13]; through increasing two-way dialogue between citizens and CPAs, to three-way dialogue between different societal stakeholders, to co-production and a participatory model. Although this appears a linear developmental arrangement, he ends by recognising their strength in combination:

> *"Moving through one-way, two-way and three-way communication modes involves an increasing level, intensity and commitment of engagement between risk authorities and risk publics, but it is the blending of all three modes that will be essential if the holistic, people-centred ambitions of the Sendai Framework for Disaster Risk Reduction are to be fully realised." (Stewart Page 12*

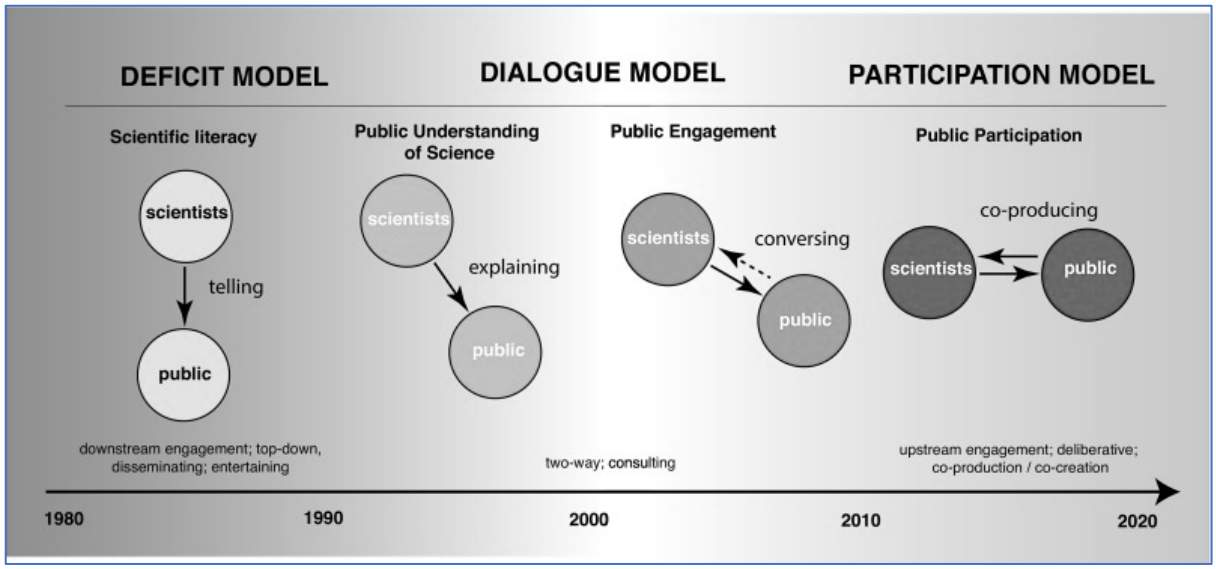

FIGURE 5: SCHEMATIC SUMMARY OF THE EVOLVING HISTORY OF SCIENCE COMMUNICATION (ADAPTED FROM STEWART 2024).

In the USA, this trend is illustrated by the Federal Emergency Management Agency's move away from a government-centric mode to a 'Whole Community' mode (FEMA 2011; 2013). The 'Whole Community' strategic themes echo many of the RiskPACC Framework's core ideas:

- Understand community complexity.
- Recognize community capabilities and needs.
- Foster relationships with community leaders.
- Build and maintain partnerships.

[13] See 4.4 Sharing Risk Perceptions and Actions above.

- Empower local action.
- Leverage and strengthen social infrastructure, networks, and assets. (FEMA 2011: 5).[14]

4.6.3 MEDIUM

While there may be mental health and wellbeing benefits of face-to-face communication (Stieger et al 2023), as a risk communication medium, this tends to be possible only in pre- and post- disaster periods, with small numbers of impacted people or via local social networks. In a crisis period, when timeliness of communication is vital, mass communication media can achieve high levels of dissemination, even if it can never be 100% effective. Evidence of preferences for, and functions of, digital and social media is now considerable, but much is still emerging. Understanding some of these differences can help curate a risk communication strategy that is inclusive of a range of needs and interests.

An Australian online survey (Zander et al 2022) found social media was favoured by those already proactive in disaster preparedness and that this was not determined by age but was influenced by gender (women using it more than men) and according to family structure (households with children in them favoured it more). Appleby-Arnold et al (2019) distinguished between social media (Facebook, Twitter/X, etc) and mobile phone apps for disaster-related information and communication as having slightly different functions and outcomes for people. Social media use functioned to foster trust through the sharing of stories and collective sensemaking and may also improve trust relationships. Disaster apps generated trust between citizens and authorities through perceptions of a sharing of responsibility and control, rather than sharing narratives.

Through surveys, Twitter/X review and secondary sources, Jung and Moro (2019) derived five functionalities of social media across different media after the Great East Japan Earthquake disaster:

- communicating with others to check the safety of each other (micro level).
- group-level communications for organisations, local communities, and local media (meso level).
- distribution channels for the mass media (macro level).
- information sharing and gathering (cross level); and

[14] See also Spialek and Houston (2018)'s Citizen Disaster Communication Assessment (CDCA), which is a survey instrument measuring individuals' communication across disaster phases.

- direct communication channels between individuals and the macro-level mass media, the government, and the public (cross level) (Jung and Moro (2019: S139).

This multi-level functionality is one of the most important characteristics of social technologies in aiding collective sensemaking (see also Heverin and Zach 2012).

Using storytelling for sensemaking is an effective way to build empathy with people who have experienced a disaster. It also helps improve reach, risk knowledge, and awareness among citizens (Mazzoglio et al., 2021, p. 347). Additionally, risk messages that are easy to retell can be more easily shared throughout the community (Stewart, 2024, p. 7). Including "disaster tales" in technical disaster reports can make them richer without losing their accuracy (Mazzoglio et al., 2021, p. 341).

Vosoughi et al (2018) analysed the spread of all the verified true and false news stories distributed on Twitter from 2006 to 2017 (~126,000 stories tweeted by ~3 million people more than 4.5 million times) to better understand how false news spreads. They found false news spread further, faster, deeper and more broadly than did verified true news stories. They concluded that false news stories were more novel and that stimulated sharing. They also found that robots spread true and false news at the same rate which suggests that the trigger for greater spread of false news was that humans were more likely to spread it (Vosoughi et al (2018: 1146) which increases the importance of countering this by sharpening public education campaigns to encourage trust building. However, Alexander (2013) suggests mass participation itself serves to counter misinformation:

> *"[S]ocial media offer immense potential for interaction with the public and monitoring of the public's concerns. They have greatly increased the scope, volume and speed of information exchange. This has not occurred without risks, mostly associated with the propagation of false or inaccurate information, and the potential consequences if this takes place. However, mass participation tends to rectify some of the inadequacies associated with the free and unregulated flow of information" (Alexander 2013: 730).*

The decision may be made to use materials other than social media or apps such as newsletters, factsheets, brochures, booklets, pamphlets, displays, advertisements, posters, amongst others (Lundgren and McMakin 2013: 154).[15]

> *"While a growing body of research lays out guidelines for effective risk finding the one "right solution" communication, the differing*

[15] The RiskPACC CPA partners supported the need for non-digital materials in order to reach those parts of their communities which could not, or would not, access digital information. The RiskPACC project also created a physical Risk Pack which mirrors the RiskPACC Platform and the physical tools of the co-creation Labs (see D8.6 Risk Pack Physical Box).

> *dynamics among audiences, situations, and purposes makes finding the one "right solution" impossible, even if there is one right solution to find." (Lundgren and McMakin 2013: 8).*

It is a good idea to test materials with different groups of people before using them. Lundgren and McMakin (2013) recommend this for anyone planning to use information materials.[16].

Appropriate tools for risk communication are varied and include *inter alia*: in-person events such as briefings and public meetings; print media, including newspapers and magazines; broadcast media such as television and radio; and internet and social media (FEMA 2014). Often a combination will be required, even when largely adhering to one-way top-down information provision.

When considering two-way communication, there are even more options – too many to present here. Citizen-generated tools can be used such as Open Street Map (https://www.openstreetmap.org/about) or crowdsourcing such as the Ushahidi Platform (https://www.ushahidi.com/) that engage citizens directly in *producing* knowledge and data and not just in passively *receiving* it.

The variability and complexity of outcomes from different communication processes and tools underlines the importance of evaluating what has been used.

4.6.4 RECEPTION & EFFECT

> *Despite a global recognition of the importance of risk communication in responding to disasters, there remains a dearth of evidence on how to evaluate the effectiveness of risk communication messages. (Bergeron and Friedman 2015: 570).*

Bergeron and Friedman (2015) have created and tested a tool to help public health and disaster preparedness professionals improve communication and management during public health emergencies. This tool evaluates the content, reach, and understanding of public health disaster messages and can be used at any stage of an emergency. They recommend involving a diverse group of stakeholders and target audiences in practice exercises and including a community member on the evaluation team.

In Bangladesh and Tanzania, BBC Media Action uses media and communication to build resilience by focusing on the needs of people. However, this approach is not as participatory as Bergeron and Friedman (2015) suggest. Whitehead's (2017) report describes a national reality TV program in Bangladesh that raises awareness about extreme weather risks and a local radio program in Tanzania that educates farmers in drought-affected areas on better farming practices and encourages them to take

[16] For those considering using information materials, Lundgren and McMakin (2013) provide a checklist.

action. The evaluation of these programs looked at their reach, engagement, knowledge, discussion, and actions taken by the audience:

- **Reach:** Did the programmes reach their target audience? *Both programmes reached people at scale.*

- **Engagement:** Were audiences engaged and did they tune in to the programmes regularly? *In both countries, over two-thirds of audiences reported improved understanding as a result of listening to or watching the output.*

- **Knowledge:** Did audiences know how to counter the impacts of changes in climate? *In both countries, over two-thirds of audiences reported improved understanding as a result of listening to or watching the output.*

- **Discussion:** Did audiences discuss the content of the programmes? *The programmes stimulated discussion with others.*

- **Action:** Were the audience taking action or intending to act? *The research shows that the programmes have been successful at driving action (e.g. nearly half (47%) of viewers in Bangladesh could name actions that they had taken as a result of watching the programme).* (Whitehead 2017 pages 30 and 6).

The evaluation revealed the importance of basing communications around solid research into people's socio-political context, differential needs, constraints and influences, and in the particular value of this kind of mass media communication in enabling impact. It makes a contribution to the relatively sparse evidence base of risk communication evaluations which UNDRR (2022) note part of good practice.

Lejano et al (2021) make a case for the need for a need to full participation of communities in risk reduction and that means moving beyond the 'deficit model' of messaging. They argue for coproduction of risk knowledge based on a foundational framework represented by a 'three-legged stool' of Indigenous/local knowledge ('locally generated knowledge held by communities, including traditional and Indigenous knowledge', page 4), social learning (which 'creates a social space for collective learning to modify prevailing behaviour, norms, and action', page 5), and communication narrative ('the form of communication that is constituted by everyday speech and embodied in stories told between peers', page 7).

They refer to Leotard (Leotard 1984; Ingram et al. 2019) to explain the difference between expert language and community language. Expert language is specialised and only a few people understand it, so information only goes one way. Community language is made up of stories that everyone shares and understands:

> *'the language of community is narrative, which consists of stories that people pass on from one to the other. With narrative, everybody*

is messenger as well as recipient. Narrative is able to integrate multiple ways of knowing' (Lejano et al 2021: 6).[17]

Their "three-legged stool" approach (local knowledge, social learning, and communication narrative) isn't a fixed plan but is adapted to each specific place (Lejano et al 2021: 8).

Visual forms of risk communication, such as flood maps, need to ensure the depiction is understood by the audience and this points to the need to disaggregates user types and target visualisations to specific needs. Henstra et al (2019) identify key characteristics, including differentiating between hazard maps (showing locations of possible inundation) and risk maps (which additionally show assets at risk) and then applies them to evaluate publicly available web-based flood maps in Canada. One of their key findings was that flood maps were not from a central location or agency but were produced by different provinces and government locations which meant there was no consistency. They were also highly technical and lacked accessibility for lay publics which reduced their value as risk communication tools. The evaluation identified a gap in Canada's contribution to risk reduction initiatives such as those detailed in the Sendai Framework for Disaster Risk Reduction which emphasise the importance of understanding disaster risk.

Risk communications have to work for both CPAs and citizens but, as the RiskPACC Framework suggests, both groups need to understand each other's perspectives and collaborate on what works for all.

4.7 Working with Different Communities

As described under section 5.3.3, people have different perspectives, needs, capabilities, and constraints which influence their beliefs and actions in DRR. Risk perception and action are shaped by context specific learning over time. This is influenced by culture and personal experiences – factors that are connected to people's social identities, e.g., their social groups (demographics). Therefore, rather than treating citizens as a homogeneous group when applying the RiskPACC framework, it is helpful to reflect on what kind of questions different groups might have for each module.

To illustrate this point, this section discusses five social groups (women, immigrants, people in a lower social class position, disaster management professionals, and people with disabilities). These examples have been chosen at random – any other social group could also have been used. Each group has randomly been assigned to one of the RiskPACC modules. For each module, the tables below explore what kinds of questions a member of that groups might ask. A more detailed discussion of how the RiskPACC framework could be used with different social groups is provided in

[17] See also: Raul P. Lejano, Eulito V. Casas Jr., Miah Maye M. Pormon and Mary Jean Yanger 2020 Teaching to the nth: Narrative knowledge and the relational model of risk communication. International Journal of Disaster Risk Reduction Volume 50, November 2020, 101720.

Annex 4. Annex 1 is a compilation of useful resources of relevance to each framework module.

TABLE 5: UNDERSTANDING THE RISK CONTEXT

UNDERSTANDING THE RISK CONTEXT What questions might a woman ask?
• Which disasters have historically happened in my area – and do we know how they affected women? • Which hazards are addressed in the emergency services plan for my location – and does the plan outline the implications for women? • Does my municipality have a plan to help me if I became displaced? • Are there any government or other initiatives to provide me with economic support during a disaster? • What plans does my municipality have in place to safeguard my basic needs during a disaster? • Does my municipality have a plan to support parents during a disaster? • What measures exist to ensure that I can still access reproductive healthcare services during a disaster? • Does my municipality have a plan to keep women and girls safe from violence during a disaster? • Are there any government or other plans to help carers during a disaster?

TABLE 6: UNDERSTANDING THE PEOPLE CONTEXT

UNDERSTANDING THE PEOPLE CONTEXT What questions might an immigrant ask?
• How can I build a support network in this new area to help me during a disaster? • Who could help me access information and resources to cope with a disaster? • What kind of people live in my area? Are there any other immigrants? • Are there social spaces where I could connect with people from my area (e.g., clubs, schools, cafes)? • How can I effectively navigate the unfamiliar cultural norms of this area (in a foreign language) – so I can access local disaster response services? • Is there strong anti-immigrant sentiment in this area? Which people/spaces are safe(r)? • How can I navigate the bias and discrimination that is common in this area? Is there any support available? • Are there civic spaces where I could meet with CPAs and other local government officials? • Are there vulnerable groups in this area that I could help during a disaster? • Are there civil society organisations or NGOs I could support or who could help me? • Do people move in and out of this area quickly? Are there people who have

been here for a long time and know the area well that I could connect with?
- Are there connections between the people in this new area and my old support network abroad?

TABLE 7: SHARING RISK PERCEPTIONS AND ACTIONS

SHARING RISK PERCEPTIONS AND EXPECTATIONS What questions might a person in a lower social class position ask?
• I am concerned about risks in my area, but where am I going to find the time and money to do anything about it? • Can I share my concerns and experiences with local authorities – outside of my working hours? Do they provide onsite childcare? Do they reimburse travel costs? • Will they actually listen to me – or will they talk over me in a condescending manner using terms I don't understand to make me feel small? • Will they dismiss my concerns and experiences out of hand, implying that my views are stupid or bad? • Is there any point in listening to what local authorities have to stay about risk and action? Will they just assume that I have tons of money and time to spare to prepare for disasters? • Will I even understand what they are talking about without bringing a dictionary? • Can I join a local risk action group? If so, will the group also include people like me or will there only be people who look down on me and treat me with contempt?

TABLE 8: DEVELOPING DRR RELATIONSHIPS

DEVELOPING DRR RELATIONSHIPS What questions might a disaster management professional ask?
• What are the relationships between CPA organizations like in the area – do they trust each other? Is there a history of collaboration or conflict? How could these relationships be improved? • What are the relationships between different groups of citizens like in our area? Is there a history of collaboration/ cooperation or conflict/ difference? What aspects of social capital are weak and strong? How could these relationships be improved? • What are the relationships between CPAs and different groups of citizens like in the area – do they trust each other? Is there a history of collaboration/ cooperation or conflict/ difference? • What citizen groups, civil society organisations, and businesses are there in our area? Could we build a relationship with them around DRR? • How could CPAs engage citizens better in DRR work? Is it possible to organise occasional consultation events? Is it possible to create a DRR network / consortium that includes citizen groups?

TABLE 9: BUILDING RISK COMMUNICATIONS

BUILDING RISK COMMUNICATIONS What questions might a person with disabilities ask?
• What support can I expect from CPAs during a disaster? What do they expect me and my carers to do? • Will the CPA work with my healthcare provider / disability support organisation to communicate with me during a disaster – and if so, how? • Will they inform me of accessible evacuation routes and shelters? Will they let me know what support is available to evacuate people with limited mobility? • Will the CPA use formats and methods to communicate with me that are accessible to me given my disability (e.g., using large print or audio)? • Will the CPA and/or my healthcare provider let me know how I can continue to get my medication? • Will the CPA and/or my healthcare provider filter communications for me, so I don't get information overload? • Will the CPA and/or my healthcare provider provide information and support for my carers? Will they address the needs of my elderly and/or teenage carers? • Will the CPA let me know what financial support is available to me and my carers during a disaster? • Will the CPA and/or my healthcare provider provide information on available psycho-social support? • Have CPAs (including first responders) been trained in working with disabled people?

The most recent development which completes the Framework is a description of how the Framework can be used in a staged approach which supports Framework-users of different experience levels.

5 APPLYING THE FRAMEWORK: A STAGED APPROACH

5.1 Introduction

Workshops conducted with CPAs within the RiskPACC consortium and beyond (described in annexes 2 and 3) illustrate that CPAs in Europe vary greatly in how much experience and/or aptitude they have for participatory approaches to DRR. The extent to which CPAs engage citizens in DRR can be broadly categorised as follows:

Level 1: No Citizen Engagement

At this level, there is no direct engagement with citizens. The CPA designs risk information and action plans using inputs from scientific research, policy guidelines, and practitioner insights. The CPA then broadcasts these risk information and action plans to citizens using non-interactive, one-way communication tools such as website content, leaflets, smartphone alerts, and public service announcements.

Level 2: Occasional Consultations

In this category, citizens are consulted about the risk information and action plans designed by the CPA. This usually occurs through one-off events like town halls, focus groups, or surveys. These consultations provide some input from citizens but are limited in scope and frequency.

Level 3: Regular Dialogue

Here, the CPA engages citizens throughout the entire process of designing risk information and action plans. This engagement is facilitated through regular events that involve both the CPA and citizens. In addition to one-way public broadcasts, the CPA also uses interactive platforms that allow citizens to provide feedback and have some influence over the content of the risk information and action plans.

Level 4: Co-Creation on an Equal Footing

At this level, the CPA and community groups form part of a DRR consortium or network. Together, they collectively design and implement risk information and action plans. Communication of these plans is done in an interactive and decentralised manner, utilising members of the consortium, such as civil society organisations and citizen groups, to reach the target audiences they represent. Leadership is shared, governance is horizontal, and the CPA acts as the main coordinator or convener. Power imbalances are addressed through established rules and skilled facilitation, accommodating multiple and even conflicting perspectives.

Level 5: Community Leadership

In this highest level of engagement, community organisations set the direction and priorities for DRR, with the CPA providing support from behind. This approach does not mean the CPA abandons its legal responsibilities for DRR, but rather takes on a supportive role, focusing on building DRR capacity within the community. This involves strengthening community networks, building local skills and know-how, and empowering citizens to take an active role in DRR efforts.

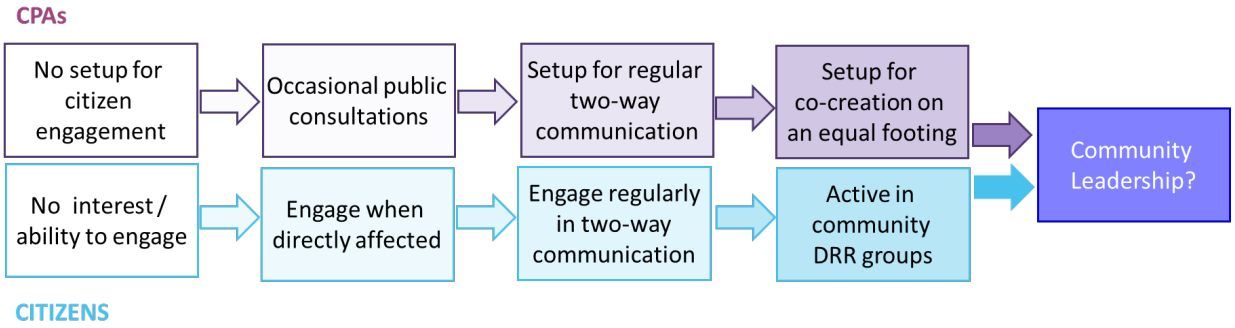

FIGURE 6: LEVELS OF CITIZEN ENGAGEMENT IN DRR

The 5 levels described above have their counterparts for citizens. Both are depicted in Figure 6 above. As described in section 4, there are challenges when it comes to engaging citizens in DRR. Many European citizens have no interest or ability to participate or will only do so when they are directly affected. However, there are citizens who are able and willing to engage in regular dialogue with CPAs about DRR, and some are even active in community DRR groups. The WREMO case study (described in annex 6) shows that communities can also lead DRR efforts.

5.2 Why is a staged approach necessary?

Workshops conducted with CPAs (as detailed in Annex 2 and Annex 3) reveal that many CPAs, who have little or no experience with citizen engagement, aim for co-creation as their next goal. Alternatively, some CPAs have attempted co-creation without any prior experience of engaging citizens in DRR. Those who attempted co-creation without prior experience encountered the following problems:

- Many were unclear on who to invite (because they had done no stakeholder mapping).
- Many struggled to recruit participants (because constraints on participation were not well understood).
- Co-creation workshops were stand-alone events (because there were no structures or resources in place to support continuity).
- Engagement during workshops was suboptimal (because no relationships of trust or mutual understanding had been established).
- There was insufficient dialogue and genuine listening during the workshops (because facilitation was mechanistic and did not redress power imbalances).
- Outputs were not well targeted, or acceptable, to important local stakeholder groups (because they had not been invited or because engagement and

dialogue during the workshop had been suboptimal).
- The dissemination of the outputs, if done at all, was top down and one-way (because no two-way communication channels had been established).

Given the above, CPAs that skip several stages and attempt full co-creation without sufficient experience—having only conducted occasional public consultations—may find the co-creation approach ineffective and may ultimately abandon it. Therefore, this deliverable advocates for a staged approach to engaging citizens in DRR.

Having a staged approach to engaging citizens in DRR is useful for several reasons. It allows CPAs to gradually develop and refine the necessary skills through training, such as in facilitation and participatory approaches. Additionally, progressively increasing citizen involvement over time helps foster strong collaborative relationships with community members. This creates an environment of trust and mutual understanding where citizens and CPAs work together more effectively during co-creation. Moreover, a staged approach allows CPAs to allocate resources incrementally, ensuring each phase of citizen engagement is adequately funded and supported, thereby avoiding the strain of implementing a comprehensive engagement strategy all at once. This method also permits CPAs to pilot and test various engagement techniques on a smaller scale before wider implementation, helping to identify the most effective methods and reducing the risk of failure in larger efforts. Engaging citizens in stages enables CPAs to gather feedback and learn from each phase of the process. This continuous feedback loop facilitates adjustments and improvements, resulting in more effective engagement strategies over time. Additionally, it helps build institutional knowledge by identifying best practices, lessons learned, and successful case studies that can inform future DRR efforts.

5.3 A Staged Approach to Participation in DRR

5.3.1 From No Engagement to Occasional Consultations

A helpful first step in engaging citizens and other societal stakeholders in DRR is to develop a clear understanding of the local context and people's perspectives through desk-based research and occasional public consultations. This involves identifying key local DRR stakeholders and inviting them to participate in public town halls, workshops, or surveys to gather their views. To create risk communication materials and strategies that incorporate this feedback and address both local needs and the organisation's goals, it is advisable for inexperienced organisations to seek professional support. To ensure the approach is successful, it is helpful to seek feedback from the community.

Table 10: From no Engagement to Occasional Consultations

UNDERSTANDING
• **Understand the local risk context**: use existing data sources to gain insights into the local environment, the history of hazard events, local risk projections, and local risk policy, legislation, and governance. • **Understand the local people context**: use existing data sources to comprehend local demographics, identify local DRR stakeholders, assess

community stability, and evaluate local resources, including human, social, and economic assets.
SHARING
• **Gather community input:** organise a public town hall, workshop, or survey to understand key DRR stakeholders' perspectives on risk, their capabilities and limitations in managing it, and their expectations of other stakeholders. • **Inform the community:** clearly communicate your organisation's views on risk and its expectations of different stakeholders in DRR. Use simple language and share this information through verbal and/or written communications.
RELATING
• **Map key DRR stakeholders**: identify the main hazards in the local area, the stakeholders involved in managing these risks, and the social groups particularly vulnerable to these hazards. • **Invite all key DRR stakeholders**: ensure all key DRR stakeholders are invited when organising a public town hall, workshop, or survey.
BUILDING
• **Seek professional guidance**: hire a communications expert or pursue professional training to develop risk communication materials and strategies tailored to the needs of both key DRR stakeholders and your organisation. Base these materials on input received from the community. • **Seek community feedback**: organise a public town hall, workshop, or survey to gather feedback from key DRR stakeholders on the risk communication materials and strategies. Use this feedback to update and improve the materials and strategies accordingly.

5.3.2 FROM OCCASIONAL CONSULTATIONS TO REGULAR DIALOGUE

A helpful next step in engaging citizens and other societal stakeholders in DRR is to establish channels and organise events for regular two-way communication. This approach fosters a shared understanding of the local context that can adapt to changing circumstances. Building constructive relationships with all key DRR stakeholders and addressing barriers to participation are essential for effective engagement. Seeking professional support is advisable to create risk communication materials and strategies that reflect this shared, dynamic understanding and meet both local needs and organisational goals. To ensure success, continuously seek feedback from the community.

TABLE 11: FROM OCCASIONAL CONSULTATIONS TO REGULAR DIALOGUE

UNDERSTANDING
• **Develop a shared, dynamic understanding of the local context**: facilitate regular dialogue with DRR stakeholders to build a shared and evolving understanding of the local context. This dialogue should encompass the local risk context, demographics, stakeholders' perspectives on risk, their capabilities and limitations in managing risk, mutual expectations, and available resources. • **Understand barriers to participation**: use surveys, interviews, and focus groups to identify what motivates and what hinders both citizens and

professionals from engaging with community-based DRR. Use these insights ensure that DRR events are accessible and inclusive.
SHARING
• **Communication channels**: establish and maintain multiple communication channels to ensure all key DRR stakeholders can connect and participate in two-way dialogue. Consider language barriers, disabilities, and differences in access to digital technology. • **Regular events**: organise regular events to foster dialogue and build relationships among DRR stakeholders. Examples include town halls, workshops, community drills and simulations, fairs and exhibitions, school and youth programmes, interactive webinars, neighbourhood walkthroughs, recreational events, and surveys. Ensure a broad and diverse range of local DRR stakeholders can engage, addressing barriers to participation.
RELATING
• **Evaluate current DRR relationships**: map local DRR stakeholders and identify key groups or organisations with which you currently lack relationships. Assess your existing DRR relationships to determine whether they are based on trust and collaboration or marked by conflict and competition. • **Strengthen DRR relationships**: establish connections with DRR stakeholders you currently have no relationship with and improve relationships with stakeholders where interactions have historically been problematic. This can be achieved by inviting these stakeholders to DRR events, encouraging personal relationships through social events, and regularly exchanging information.
BUILDING
• **Seek professional guidance**: hire a communications expert or pursue professional training to develop risk communication materials and strategies tailored to the needs of both key DRR stakeholders and your organisation. Base these materials on input received from the community. • **Seek community feedback**: organise a public town hall, workshop, or survey to gather feedback from key DRR stakeholders on the risk communication materials and strategies. Use this feedback to update and improve the materials and strategies accordingly.

5.3.3 FROM REGULAR DIALOGUE TO CO-CREATION

To engage citizens and other societal stakeholders in DRR even further, a helpful next step is to broaden and activate DRR relationships so as to leverage them for co-creation. This involves understanding the imbalances in power, resources, skills, and time among societal stakeholders in detail to address them effectively. Removing barriers to meaningful participation, such as by providing financial and technical resources, is essential. Using skilled facilitation and setting clear ground rules for co-creation are also important. In order to engage citizens effectively in co-creation, it is advisable to seek professional training in facilitation and participatory methods. Additionally, running a pilot project in co-creation risk communications can help identify local opportunities and barriers to this approach.

TABLE 12: FROM REGULAR DIALOGUE TO CO-CREATION

UNDERSTANDING
• **Understand power imbalances**: use surveys, interviews, and focus groups to understand imbalances in power, resources, skill, expertise, time, energy, and liberty between different DRR stakeholders. Use these insights to remove barriers to participation in co-creation events and to redress power imbalances through skilled facilitation. • **Run a pilot project:** run a small-scale, stand-alone, project in co-creation for risk communications to understand local opportunities and barriers to this approach.
SHARING
• **Skilled facilitation**: hire a skilled facilitator or seek professional training in facilitation and participatory methods to address power imbalances, manage conflict, facilitate dialogue, and enable less powerful stakeholders to participate effectively. • **Mutual understanding**: Foster dialogue between community members and CPAs about risk perceptions, mutual expectations, capabilities, and constraints in DRR to help them develop trust, mutual understanding, and shared problem definitions and solutions to inform risk communications. • **Communication platforms**: create in-person and online spaces where community members and CPAs can, store documents, share information and engage in dialogue around the co-creation initiatives.
RELATING
• **Activate and broaden DRR relationships:** engage all key local DRR stakeholders in regular communications to gather input and foster collaboration around risk communications. Make sure to include community leaders or organisations that represent at-risk groups. Offer financial and technical resources to support the participation of underrepresented groups. • **Leverage DRR relationships**: leverage relationships with DRR stakeholders to facilitate broader engagement and collaboration around risk communications. Work with community groups, civil society organisations, CPAs, and the private sector to access relevant expertise, resources, and funding.
BUILDING
• **Co-creation workshops**: conduct workshops to understand different stakeholders' perceptions of risks, mutual expectations, and preferred communication channels. Enable community members to actively participate in designing communication strategies, tools, and materials. • **Set clear ground rules**: establish clear ground rules, protocols, and transparency around co-creation and collaboration more broadly. • **Leverage local knowledge and resources**: ensure that risk communications address the needs and expectations of local stakeholders. Use local resources, such as community centres, schools, and local media, to disseminate information. • **Develop tailored communication materials**: create materials in various formats (flyers, posters, social media posts, videos) to reach different segments of the community. Use visual aids and interactive tools to make the information more accessible and engaging.

- **Establish feedback mechanisms**: create channels (hotlines, suggestion boxes, online forms) for community members to provide feedback on the communication strategies. Use feedback to continuously improve and adapt communication methods.
- **Training programs**: offer training programs for community members on disaster risk reduction and effective communication techniques.
- **Inclusive and equitable approach**: ensure that communication strategies, tools, and materials address the needs of groups that are especially at-risk from local hazards. Strive for equitable access to information by considering socioeconomic barriers and providing resources where needed.

5.3.4 FROM CO-CREATION TO COMMUNITY LEADERSHIP

The highest level of citizen engagement in DRR is community leadership. At this stage, CPAs support societal stakeholders as they set the agenda and take the lead in DRR. This "all of society" approach involves community groups, civil society organisations, and the private sector working alongside CPAs. A community-driven approach to DRR relies on collaborative governance, discussed in Chapter 4. Collaborative governance involves societal stakeholders and public agencies meeting in common forums to engage in consensus-based actions (Ansell and Gash, 2007). This approach requires setting up processes and structures that promote effective collaboration through the effective sharing of knowledge and resources. To implement this, broad and inclusive DRR networks (or consortia) must be formally developed at the local level, incorporating all key stakeholders. This allows them to become the must go place for local DRR. It's crucial to ensure that at-risk groups are represented in these networks, either through community leaders or civil society organisations. Within these networks, working groups or committees can be created that are dedicated to community-led risk communication. To initiate the approach, it is crucial to understand current relationships between various societal stakeholders, how these relationships can be adapted or expanded, and the factors needed to facilitate a political shift towards community leadership in DRR.

The local DRR networks should be supported by platforms that facilitate dialogue between the stakeholders. Regular dialogue enables stakeholders to identify common values, develop a shared understanding of the local context, and recognise their mutual interdependence. This allows them to develop a shared sense of ownership over DRR and establish shared goals. Moreover, implementing clear ground rules and mechanisms for accountability allows stakeholders to develop trust in the approach. To make sure that all stakeholders operate on an equal footing and that all perspectives and needs are addressed in DRR, it is vital to redress imbalances in power, knowledge, and resources. This can be done through facilitative leadership and the careful allocation of resources to less influential actors. These measures enable communities to determine priorities and take the lead in developing risk communication tools and strategies.

TABLE 13: FROM CO-CREATION TO COMMUNITY LEADERSHIP

UNDERSTANDING
• **Understand relationships between DRR stakeholders**. Use expert interviews and historical data to understand the prior history of conflict or

cooperation between different DRR stakeholders in the local area, and how current relationships and networks might be expanded or adapted to facilitate community-led DRR. Use these insights to develop a local DRR network.

- **Understand political motivations for community leadership**. Use expert interviews and historical data to understand what factors could facilitate a political shift to community leadership in DRR in the local area. Leverage these insights by influencing these factors whenever possible and seizing political opportunities for change as they arise.

SHARING

- **Platforms for dialogue**: establish and maintain multiple platforms for dialogue, ensure all key DRR stakeholders can engage. Create both in-person platforms, such as working groups or advisory committees, and message boards and portals. Consider language barriers, disabilities, and differences in access to digital technology.
- **Facilitative leadership**: identify and support effective local leaders who can facilitate dialogue, build consensus, manage power dynamics, and enable marginalised groups to participate effectively. Provide these leaders with funding, training, recognition, and access to broader DRR networks.
- **Collaborative process based on dialogue**: facilitate discussions among stakeholders to help them identify common values, develop a shared understanding of the problem, and recognize their interdependence. This will enable them to collaborate by exploring mutual benefits. Support joint fact-finding efforts and help stakeholders develop a clear, shared mission and a joint strategy. Initially, focus on achieving small, intermediate outcomes to build trust and commitment to the process.

RELATING

- **Develop a local DRR network**: form a local consortium, network, or platform that brings together all key DRR stakeholders at the local level, making it the primary avenue for organising for local DRR. Set up working groups or dedicated committees to organise various aspects of local DRR, such as developing risk communications.
- **Representation**: include civil society organisations representing marginalised groups in local DRR consortia and networks or create advisory councils with their representatives.
- **Empowerment**: develop strategies to support less powerful actors in DRR, for example through resource allocation, training, addressing accessibility issues, simplifying bureaucratic processes, creating safe spaces, and promoting diverse leadership.
- **Build trust in the collaboration**: help establish the objectives and scope of the collaboration, facilitate the development of a procedural framework, develop a code of conduct, establish feedback and accountability mechanisms, and ensure that stakeholders have access to all relevant information, data, and documents.

BUILDING

- **Empower local leader**: identify local leaders and community organisations and grant them the authority and responsibility to spearhead disaster risk

communication efforts. Provide them with training and resources to build their capacity to lead effectively.

- **Establish community-based committees**: form community-driven committees or task forces specifically focused on disaster risk communication. Ensure these committees have decision-making power and control over resources.
- **Facilitate community-led research and planning**: enable communities to conduct their own workshops and research to identify risks and preferred communication methods. Support communities in developing their own strategic communication plans based on their research findings.
- **Support community-led communication initiatives**: allocate funds and resources directly to community-led communication projects. Offer technical assistance to help communities implement their communication strategies effectively.
- **Promote peer-to-peer education and training**: implement train-the-trainer programs where community members are trained to educate their peers. Facilitate community-led workshops and training sessions on disaster risk reduction and communication.
- **Enable access to technology and tools**: provide access to digital platforms and tools that communities can use to develop and disseminate information. Create do-it-yourself (DIY) kits and guides to help communities create their own communication materials.
- **Enhance local media capabilities**: support the establishment or strengthening of community radio and TV stations. Provide training on effective use of social media for disaster communication.
- **Encourage local innovation**: offer grants or prizes for innovative community-led communication solutions. Set up incubators or innovation hubs where community members can develop and test new communication ideas.
- **Institutionalize community leadership**: create formal agreements that outline the roles and responsibilities of community leaders and organisations within the broader local DRR network. Develop frameworks that institutionalise community leadership in disaster risk communication.
- **Facilitate community-led evaluation and feedback**: provide tools for communities to evaluate their own communication strategies. Establish feedback loops where communities can continuously improve their communication methods based on their own evaluations.
- **Foster collaboration with other local DRR stakeholders**: encourage community leaders and organisations to share best practices and resources with other local DRR stakeholders within the local DRR network/coalition. Organize local forums where community leaders and other DRR stakeholders can collaborate and learn from each other.
- **Recognise and reward leadership**: implement awards and recognition programs to honour outstanding community-led initiatives. Publicly acknowledge the contributions of community leaders and organisations to reinforce the importance of their role.

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6 CONCLUSION

This deliverable presents a comprehensive collaborative framework aimed at bridging the Risk Perception-Action Gap (RPAG) between citizens and Civil Protection Authorities (CPAs). It facilitates a deeper understanding of risk perceptions and actions, fostering enhanced disaster resilience through improved communication and collaboration. The framework highlights the critical need for two-way communication and participatory approaches in disaster risk reduction (DRR). It discusses the differences in risk perception between citizens and CPAs and argues that effective risk management requires integrating local knowledge with scientific data. The collaborative participatory approaches promoted by the framework ensure that disaster resilience strategies are inclusive, context-specific, and responsive to the needs of various community groups.

The framework's modular design—comprising Understanding, Sharing, Relating, and Building—offers a structured yet flexible approach to co-creating risk communications. By advocating the building of DRR relationships and the sharing of risk perceptions and actions, it enables stakeholders to develop mutual trust and a shared understanding of the local context to collaboratively build tailored solutions. The practical examples provided within the framework illustrate its applicability across different contexts and social groups. Its staged approach provides concrete guidance on how to progressively implement the framework modules to increase citizen engagement in DRR. In conclusion, by addressing the RPAG and promoting collaborative approaches, the RiskPACC framework paves the way for more resilient and prepared communities.

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8 ANNEXES

TABLE 14: ANNEXES

ANNEX NUMBER	TITLE	PAGES
ANNEX 1	PRACTITIONER RESOURCES	79
ANNEX 2	DIFFERENT STARTING POINTS, DIFFERENT GOALS	102
ANNEX 3	COLLABORATIVE GOVERNANCE	117
ANNEX 4	THE RISKPACC FRAMEWORK: WORKING WITH DIFFERENT COMMUNITIES	123
ANNEX 5	WREMO CASE STUDY	156

ANNEX 1: PRACTITIONER RESOURCES

These resources have been included to help CPAs and citizens who may be starting out on the journey of engaging in two-way communication with citizens. It is closely tied to the structure and meaning of the RiskPACC Collaborative Framework. Some of the resources are more useful to CPAs, some to citizens and some to both. They are marked accordingly.

URLs have been included for ease of review and these have been checked at this date 1 May 2024. However, it is not possible to ensure that the URLs remain live.

Resources may not be directly applicable in all countries or contexts but are included to provide inspiration for the types of approaches that can be adapted for local uses.

PreventionWeb DRR Knowledge Base https://www.preventionweb.net/knowledge-base has many resources or articles about training events that have already happened, but which may provide some inspiration if adapted. However, many PreventionWeb resources are historic and there are relatively few with a direct European focus, so it is necessary to filter by date to bring the most recent to the top and then search more widely (e.g. Google).

The UNDERSTANDING modules of the RiskPACC Framework is fundamental and also has two sections, so it contains most resources.

Because we have learned that CPAs have less experience with issues faced by specific social groups, we have identified some dedicated resources for some (not all) of the key groups. Once some of the issues, needs and contributions of those social groups often identified as vulnerable have been understood, the user can apply this awareness to subsequent resources.

TABLE 15: RESOURCES FOR UNDERSTANDING THE RISK INFORMATION CONTEXT

Resources	Links
UNDERSTANDING RISK INFORMATION CONTEXT	
The Union Civil Protection Knowledge Network This is one of the tools of the Union Civil Protection Mechanism and its community. The Knowledge Network is a hub that connects first responders, disaster risk managers, scientists, and decision-makers and matches their needs for expertise and good practices with methodologies, tools, solutions, and resources.	https://civil-protection-knowledge- CPAs

EU 2022 Overview of the Wildfire Prevention Action Plan This plan from the European Commission lists 10 actions, organised around three themes, to help safeguard forests from wildfires: i) improved capacity to prevent wildfires, ii) improved knowledge on wildfires for prevention, and iii) increased financing for wildfire prevention actions. It is expected the plan will be taken forward through reinforced dialogue and cooperation with the Member States on these actions, with clear legal base and proposed deliverables.	https://civil-protection-knowledge-network.europa.eu/system/files/2022-12/Wildfire%20Prevention%20Action%2 0Plan.pdf CPAs
DRMKC INFORM INFORM is a collaboration of the Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European Commission. It is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters. INFORM includes organisations from across the multilateral system, including the humanitarian and development sector, donors, and technical partners. The Joint Research Center of European Commission is the scientific lead for INFORM.	https://drmkc.jrc.ec.europa.eu/inform-index CPAs
The American Red Cross and the International Federation Red Cross and Red Crescent Societies (IFRC) Global Disaster Preparedness Center (GDPC) **- Community Risk Assessment** The American Red Cross and the International Federation of Red Cross and Red Crescent Societies (IFRC) have established the Global Disaster Preparedness Center (GDPC) as a reference centre to support innovation and learning in disaster preparedness. GDPC provides services in three main areas — Knowledge Management, Research and Technical Assistance — in order to build national and community level preparedness.	https://preparecenter.org/topic/communi ty-risk-assessment/ Citizens
Government of Canada 2012 Your Emergency Preparedness Guide This is an example of preparing a family emergency plan. It includes checklists to build a 72-hour emergency kit. It is two formats: online, and in PDF format.	https://www.getprepared.gc.ca/cnt/rsrcs /pblctns/yprprdnssgd/index-en.aspx https://www.getprepared.gc.ca/cnt/rsrcs /pblctns/yprprdnssgd/yprprdnssgd-eng.pdf Citizens
OpenWHO WHO's first interactive, self-paced, online knowledge- transfer platform introducing open online courses into **health emergency response**. OpenWHO courses are	https://openwho.org/courses?utf8=%E2%9C%93&q=Communication CPAs & Citizens

offered for free to anyone who registers with their email address.	
Go social! Go social! focuses on cross-cutting interventions such as risk communication. The course is structured into five modules, with case studies and a final assessment. Course contents: Course Introduction; Module 1: Community Engagement; Module 2: Data Collection and Analysis; Module 3: Considerations for Intervention Design; Module 4: Risk Communication; Module 5: Interpersonal Skills.	https://openwho.org/courses/empowering-communities CPAs & Citizens
RiskData Hub A GIS web platform of European wide risk data and methodologies for Disaster Risk Assessment. It adopts the comprehensive administrative frameworks and policies (Union Civil Protection Mechanism, Sendai Framework for DRR), data sharing initiatives (OpenDRI) and spatial data infrastructures (INSPIRE) with the purpose of setting the bases for knowledge for DRM at local, national, regional and EU-wide level. The Risk Data Hub is expected to be the point of reference for curated EU-wide risk data, either through hosting relevant datasets or through linking to national datasets. Collecting and producing an inventory of relevant methodologies and datasets will set the bases for qualitative evaluation of science-based approaches on risk assessment and will locate and propose alternative sources. Risk Data covers research, policy and operational actors.	https://drmkc.jrc.ec.europa.eu/risk-data-hub#/ CPAs & Citizens
Department of Communities, Child Safety and Disability Services, Australia 2017 People with vulnerabilities in disasters A framework for an effective local response This Toolkit provides organisations with an augmented approach to applying the Framework, including a range of actions and strategies that can be tailored relative to their respective resource and capability levels. This Toolkit also provides tips and resources to help support good practice.	https://www.qld.gov.au/_data/assets/pdf_file/0022/55219/supporting-people-with-vulnerabilities-toolkit.pdf CPAs & Citizens

TABLE 16: RESOURCES FOR UNDERSTANDING THE SOCIAL-POLITICAL (PEOPLE) CONTEXT

UNDERSTANDING SOCIAL-POLITICAL (PEOPLE) CONTEXT	
Resources	**Links**
OECD Background Document on Public Consultation This offers more information for those wanting to learn more about public consultation. It differentiates between Notification, Consultation and Participation which denote increasing levels of dialogue and shared decision-making power.	https://www.oecd.org/mena/governance/36785341.pdf CPAs

Socialpinpoint, How Diversity Affects Decision- Making in Communities This site offers some introductory ideas on how diversity improves decision making. It includes links to downloadable guides such as: How To Become An Expert in Inclusive Engagement. Discover how to involve a representative cross-section of the community with online technology and turn your ambition for inclusivity into a reality.	https://www.socialpinpoint.com/how- diversity-affects-decision-making-in- communities/ https://socialpinpoint.wpenginepowered. com/wp-content/uploads/2023/02/How- To-Become-An-Expert-In-Inclusive-Engagement-Social-Pinpoint.pdf CPAs
McKinsey & Company 2022 What is diversity, equity, and inclusion? Although this is focused on the (US) business community it has useful information on e.g. the differences between diversity, equity and inclusion, on intersectionality, racial equity and other topics.	https://www.mckinsey.com/featured- insights/mckinsey-explainers/what-is- diversity-equity-and-inclusion CPAs
OECD Innovative Citizen Participation This explores innovative ways that governments can effectively engage with citizens and stakeholders to source ideas, co-create solutions, and tackle complex policy problems. It focuses on new research in the area of deliberative, collaborative, and participatory decision making that are evolving across the globe. It includes deliberative processes for public decision making including a Deliberative Democracy Toolbox.	https://www.oecd.org/governance/innov ative-citizen-participation/ https://www.oecd.org/governance/innov ative-citizen-participation/deliberative- democracy-toolbox-overview.pdf CPAs
Centres for Disease Control and Prevention (CDC). Planning for an Emergency: Strategies for Identifying and Engaging At-Risk Groups. A guidance document for Emergency Managers: First edition. Atlanta (GA): CDC; 2015. CDC identifies six categories as among the most commonly accepted in terms of social vulnerability: socioeconomic status, age, gender, race and ethnicity, English language proficiency, and medical issues and disability. Importantly, they remind us to keep in mind that many people might fit more than one category.	https://www.cdc.gov/nceh/hsb/disaster/ atriskguidance.pdf CPAs

EU JRC DRMKC - Risk Data Hub Vulnerability to Disasters in Europe. Risk Data Hub is a GIS web platform of European wide risk data and methodologies for Disaster Risk Assessment.	https://drmkc.jrc.ec.europa.eu/risk-data-hub/#/ CPAs
EU European citizens' panels: A new phase of citizen engagement The Commission convened a Citizens' Panel (140 citizens from 27 Member States) to deliberate and make recommendations on actions to be taken by Member States, citizens and public and private stakeholders, to guide the development of desirable and fair digital environments. The Citizens' Report from the Panel has the full set of recommendations.	https://citizens.ec.europa.eu/index_en https://digital-strategy.ec.europa.eu/en/news-redirect/794411 CPAs & Citizens
Din Säkerhet (Your Security) Advice for private individuals Information on how to prepare for a flood and how to see signs of landslides; fire safety in forest land; tips on how you can pack an emergency box; joining an association or voluntary defence organization.	https://www.msb.se/sv/rad-till-privatpersoner/ CPAs & Citizens
Gender	
Before we show resources for selected social groups of interest, we list Gender first as a crosscutting issue which needs to be considered together with all other considerations.	
UNDRR 2024 Sendai Gender Action Plan UNDRR Information page on the Sendai GAP with links to various resources. The Sendai GAP aims to accelerate implementation of the Sendai Framework by substantially increasing resource allocations, activities and impacts of gender-responsive disaster risk reduction and substantially decreasing gender-related disaster risk by 2030. It identifies nine key objectives related to the four priorities of the Sendai Framework and recommends 33 actions that promote gender equality and the empowerment of all women and girls in disaster risk reduction. Also see links to the 36-page Sendai Gender Action Plan in various languages	https://www.undrr.org/news/what-sendai-gender-action-plan#:~:text=The%20Sendai%20GAP%20aims%20to,related%20disaster%20risk%20by%202030 https://www.undrr.org/publication/gender-action-plan-support-implementation-sendai-framework-

	disaster-risk-reduction-2015 CPAs
Gender and disaster risk reduction in Europe and Central Asia: Workshop Guide for Facilitators **UNDP and UN Women 2018** This 140-page document provides background, case studies, facilitation instructions and templates of various kinds in support of facilitators and trainers working to incorporate gender perspectives in disaster risk reduction (DRR) programmes and initiatives. It is meant to assist workshop participants— including practitioners and officials from the United Nations, national governments, civil society organizations (CSOs), and other institutions—in gaining an understanding of the gendered impact of disasters. It also helps them learn how to plan, implement, monitor and evaluate gender-responsive DRR programmes and initiatives. The information in this guide is based on the context of gender equality issues in Europe and Central Asia (ECA). The structure includes: Module 1 – Gender equality and disaster risk reduction Module 2 – Gender equality in disaster preparedness Module 3 – Gender equality in disaster response and recovery Module 4 – Gender-responsive monitoring and assessment of disaster risk reduction programmes Glossary of terms	https://www.adaptation-undp.org/sites/default/files/resources/gender.pdf CPAs
OSCE 2022 DISASTER PROTECTION FOR ALL: A Gender-Responsive and Disability-Inclusive Approach to Disaster Risk Reduction. Organization for Security and Co-operation in Europe (OSCE) Secretariat/Gender Issues Programme This 30-page document provides guidance on inclusive disaster risk reduction. Its headings include: • Gaps and Barriers • Opportunities and Recommended Actions • Short case studies • Resources and toolkits • Frameworks and Policies (Global and Regional)	https://www.osce.org/files/f/documents/b/8/518598.pdf CPAs
GDN and GRRIPP Reference Guide on Gender and Disaster Series This series of 4 annotated bibliographies from the Gender and Disaster Network (www.gdnonline.org) and the GRRIPP project* (www.grripp.net) introduce readers to references on gender and disaster, gender-disaster-conflict, intersectionality and resilience, and gender and sexual minorities in DRR.	https://www.gdnonline.org/resources CPAs & Citizens

The listed items include bibliographic details, a short description, and whether the reference is behind a paywall. *GRRIPP project: Gender Responsive Resilience and Intersectionality in Policy and Practice: Networking Plus Partnering for Resilience is funded by UKRI Global Challenges Research Fund	
Gender and Disaster Australia (GADAus) This site has a number of useful resources including: • Literature reviews, roadmaps (information, resources, checklists for anyone working in emergencies), videos. And • **National Gender and Emergency Management (GEM) Guidelines** which provide guidance to agencies to enable a gender sensitive approach in planning for and the delivery of relief and recovery after emergencies.	https://genderanddisaster.com.au/resources/ https://genderanddisaster.com.au/wp-content/uploads/2024/02/1_GEM-Guidelines-December-2023.pdf CPAs & Citizens
IOM 2021 SOGIESC AND MIGRATION TRAINING PACKAGE *SOGIESC An acronym for sexual orientation, gender identity, gender expression and sex characteristics.* On this site is the full package of resources and tools (a couple of them are selected below). The training modules cover a variety of topics, including terminology, international law, communication, protection, assisted voluntary return and reintegration (AVRR) and Refugee Status Determination (RSD), all with a focus on practical guidance for IOM and UNHCR offices and partner organizations. However, they can be usefully adapted by other organizations.	https://www.iom.int/2021-sogiesc-and-migration-training-package CPAs
IOM GUIDANCE ON INCLUSIVE FACILITIES FOR MIGRANTS WITH DIVERSE SOGIESC SOGIESC An acronym for sexual orientation, gender identity, gender expression and sex characteristics. This 7-page document provides guidance for staff members who are assisting migrants on IOM premises and in other IOM-managed facilities such as transit centres. However, it contains useful ideas that can be adapted for other organisations. Its purpose is to detail the protection considerations related to LGBTIQ+ migrants. It provides guidance under the following headings: personnel and	https://www.iom.int/sites/g/files/tmzbdl486/files/documents/IOM-Guidance-Note-LGBTIQ-Inclusive-Facilities.pdf CPAs

training; sanitation facilities; accommodation; non-food item distribution; medical care; accommodation for nursing parents; and safe space messaging.	
IOM SOGIESC FULL GLOSSARY OF TERMS SOGIESC An acronym for sexual orientation, gender identity, gender expression and sex characteristics. This provides explanations for many terms.	https://www.iom.int/sites/g/files/tmzbdl486/files/documents/IOM-SOGIESC-Glossary-of-Terms.pdf CPAs
Age: older people	
NCOA 2023 Emergency Preparedness for Older Adults: Stay Prepared, Stay Safe This is US-based (National Council on Aging), it provides a checklist of actions that can be taken before and during a disaster. This includes making an emergency plan and kit, preparedness around transportation, mobility issues, medication, cognitive challenges, the role of stress, plan an evacuation route.	https://www.ncoa.org/adviser/hearing-aids/emergency-preparedness-older-adults/ Citizens
National Institute on Aging 10 Emergency Kit Essentials This is a US-based organization, it provides a succinct infographic checklist for an emergency kit for older adults. For more detailed information: Disaster Preparedness and Recovery for Older Adults	https://www.nia.nih.gov/sites/default/files/2023-03/ten-emergency-kit-essentials.pdf https://www.nia.nih.gov/health/safety/disaster-preparedness-and-recovery-older-adults Citizens
HelpAge International 2019 AGE INCLUSIVE DISASTER RISK REDUCTION – A TOOLKIT This toolkit outlines the process of age inclusion in programming for disaster risk reduction. It is a resource designed for organisations working on disaster risk reduction. It has a particular focus on Asia Pacific region but can be adapted more widely. The toolkit provides an introduction to concepts, policies and frameworks that guide disaster risk reduction, with a special focus on those linked to age and disability. This is followed by insights and tools to support age inclusion in risk assessment, planning, preparedness, resilience building and advocacy. It has pre-prepared worksheets and checklists.	https://www.preventionweb.net/files/68082_ageinclusivedisasterriskreductionat.pdf CPAs
Age: Children	
Social scientists at **Lancaster University** have researched the effects of floods on the lives of adults and children in three major projects: **Hull Floods Project (2007-2009), Hull Children's Flood Project (2007-2011) and Children, Young People and Flooding: Recovery and Resilience (2014-16)**. They have produced 'Flooding	https://wp.lancs.ac.uk/floodarchive/

– a social impact archive', which contains a number of interactive games: **Flood Snakes & Ladders** developed in 2009 by Lancaster University researchers from the Hull Floods Project, is an interactive game that invites participants to walk in the shoes of flood-affected children. It can be used to stimulate discussion and learning around flood preparedness and response. A **360 virtual reality video** in which viewers experience flooding and the difficult road to recovery from the perspective of a young boy and his family. **The Flood Suitcase** is designed to support recovery and resilience building with flood- affected children, young people, families and teachers. **Get Flood Ready!** is a digital game for primary- aged children, aimed at promoting flood awareness and preparedness.	https://wp.lancs.ac.uk/floodsnakesandla dders/background/ https://wp.lancs.ac.uk/floodarchive/help- callum/ http://wp.lancs.ac.uk/floodarchive/resou rces/interactive-tools/flood-suitcase-2/ https://wp.lancs.ac.uk/floodarchive/inter active-tools/get-flood-ready/ CPAs & Citizens
Global Disaster Preparedness Center (GDPC) The American Red Cross and the International Federation Red Cross and Red Crescent Societies (IFRC) have established the Global Disaster Preparedness Center (GDPC) as a reference centre to support innovation and learning in disaster preparedness. Teen Prep Kit was a project that engaged RCRC youth across the globe to develop preparedness content related to Disaster Risk Reduction; Emergency Planning; Climate Change; Health; Wellness & Resilience; and Leadership & Future Building. Teen Prep Kit Climate Change Activities – English	https://preparecenter.org/ https://preparecenter.org/resource/teen- prep-kit-disaster-risk-reduction-activities-english/ CPAs & Citizens
Disaster Preparedness Games The American Red Cross' International Services Department has teamed up with the Red Cross/Red Crescent Climate Centre and Parsons The New School of Design's Prototyping, Evaluation, Teaching and Learning Lab (PETLab) to develop a set of participatory games about disaster preparedness and changing climate risks. The games serve as a platform for experiential learning and have the aim of enabling community members better understand specific risks; make decisions; deal with the consequences of their	https://preparecenter.org/topic/games/ CPAs & Citizens

decisions; and have a shared learning dialogue about what must be done in order to make better decisions in the future.	
The 2020 Words into Action guide on Engaging Children and Youth in Disaster Risk Reduction and Resilience Building provides guidance for meaningfully engaging children and youth in DRR, at the same time as safeguarding them from violence. Although much of this work is aimed at conditions and situations in lower income countries, there is much which can be adapted to European contexts.	www.undrr.org/sites/default/files/inline-files/Words%20into%20Action%20Youth_1.pdf CPAs & Citizens
Disabled People	
UNDRR Disability and disaster risk knowledge base A resource guide including case studies, challenges and best practices to ensure the full participation of persons with disabilities in disaster risk reduction.	https://www.preventionweb.net/collections/disability-and-disaster-risk CPAs
MAJOR HAZARDS AND PEOPLE WITH DISABILITIES **A toolkit for good practice** It provides guidance and good practice examples for CPAs and decision makers, disaster officers, emergency managers, disabled peoples' organisations and people with disabilities and their families to ensure the active involvement of people with disabilities in disaster-related activities. The focus is on Council of Europe and EUR- OPA member states, but other examples from around the world are also included to give a wider perspective	https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=0900001680467003 CPAs & Citizens
EDF 2021 Review of Disability-inclusive Disaster Risk Reduction Policy and Practice across Europe and Central Asia, European Disability Forum In preparation for the 2021 European Forum for Disaster Risk Reduction (EFDRR), the European Disability Forum (EDF) has worked on the first-ever review of disability- inclusive disaster risk reduction (DiDRR) policy and practice across countries of the Europe and Central Asia region. The aim of the DiDRR review was primarily to provide a baseline of information for this region on the current state of disability inclusion in DRR-related policies and practices and to support consistency of reporting on disability inclusion in DRR across the rest of the regions of the world.	https://www.edf-feph.org/publications/review-of-disability-inclusive-disaster-risk-reduction-policy-and-practice-across-europe-and-central-asia/ CPAs & Citizens

EDF 2021 Review of Disability-inclusive Disaster Risk Reduction Policy and Practice across Europe and Central Asia, European Disability Forum In preparation for the 2021 European Forum for Disaster Risk Reduction (EFDRR), the European Disability Forum (EDF) has worked on the first-ever review of disability- inclusive disaster risk reduction (DiDRR) policy and practice across countries of the Europe and Central Asia region. The aim of the DiDRR review was primarily to provide a baseline of information for this region on the current state of disability inclusion in DRR-related policies and practices and to support consistency of reporting on disability inclusion in DRR across the rest of the regions of the world.	https://www.edf-feph.org/publications/review-of-disability-inclusive-disaster-risk-reduction-policy-and-practice-~~across- europe-and-central-~~asia/ CPAs
Person-Centred Emergency Preparedness (P-CEP) Toolkit An all-hazards approach to enabling emergency preparedness. Co-designed and tested with people with disability, Person-Centred Emergency Preparedness (P- CEP) enables people to self-assess their preparedness, capabilities and support needs and develop a personal emergency plan for how they will: (a) manage their support needs in emergencies; and (b) act together with their support network before, during, and after a disaster.	https://collaborating4inclusion.org/home/pcep/ Citizens
Volunteers	
NB Most resources are compiled by specific organisations for their own volunteers.	
IFRC 2012 Volunteering in emergencies Practical guidelines for Red Cross and Red Crescent Societies managing volunteers in emergency situations This is a 40-page document with checklists of key policies, procedures, systems and financial matters to consider before, during and after emergencies. It contains useful links, examples and critical questions.	https://volunteeringredcross.org/wp-content/uploads/2019/02/Volunteering-in-emergencies-LR.pdf CPAs
IFRC 2012 Caring for Volunteers: A Psychosocial Support Toolkit This toolkit assists IFRC National Societies in preparing and supporting volunteers for their work during and after disasters, conflicts and other crisis events. It contains practical tools and information on preparing for crises, communication and Psychological First Aid, peer support and monitoring and evaluation. A number of tools, including worksheets, can be printed as handouts. It is available from the IFRC website in several languages.	https://pscentre.org/wp-content/uploads/2018/02/volunteers_EN.pdf

	https://pscentre.org/resource/caringforvolunteersers/ CPAs
All Hands and Hearts 2020 GETTING READY: TOP 10 DISASTER RELIEF VOLUNTEER TRAINING COURSES This site provides links to online resources on: 1. Stop Disasters! Simulation 2. Beyond Response: Better Preparedness For Environmental Emergencies 3. How To Get Good Sleep In A Disaster Response Context 4. Caring Safely: Compassion Fatigue Training 5. Storytelling For Impact 6. Keeping Volunteers, Workers And Responders Safe 7. Humanitarian Essentials 8. Natural Disasters 9. Teamwork And Collaboration 10. Communication Skills And Bridging Divides	https://www.allhandsandhearts.org/blog/volunteers/getting-ready-top-10-disaster-relief-volunteer-training-courses/ CPAs
ICMA 4 Steps to Disaster Preparedness through Volunteer Engagement International City/County Management Association (ICMA) This is a US-based 8-page document which includes a 10-Step Checklist for Building a Successful Volunteer Program, Key performance measures, Strategies and tactics to ensure long-term success of a volunteer program	https://icma.org/blog-posts/4-steps-disaster-preparedness-through-volunteer-engagement CPAs
Business owners	
UNDRR Quick Risk Estimation (QRE) Tool to help small businesses and enterprises, including those in the informal sector This is a downloadable excel spreadsheet tool in several languages. The Quick Risk Estimation (QRE) tool has been designed to identify and understand current and future risks / stress / shocks and exposure threats to both human and physical assets. The QRE Tool is a multi-stakeholder engagement process to establish a common understanding. The QRE will produce a dashboard-style risk assessment advising the risks and hazards to human and physical assets, impacts of identified main risks and associated hazard events on the specified location and/or particular asset.	https://mcr2030.undrr.org/quick-risk-estimation-tool Citizens
UNDRR COVID-19 Small Business Continuity and Recovery Planning Toolkit	https://www.undrr.org/publication/covid-19-small-business-continuity-and-recovery-planning-toolkit

This is an 18-page PDF, available in 11 languages. It is organized around 10 tips to make a business resilient to COVID-19. It includes blank tables for users to complete.	Citizens
UNDRR Asia-Pacific COVID-19 Brief: Business Resilience in the Face of COVID-19 A narrated online training course to orient business owners to the use of the Small Business Continuity and Recovery Planning Toolkit. A regional brief on business resilience with recommendations aimed at policymakers and business owners.	https://courses.adpc.net/courses/course-v1:UNDRR+COVID19SBCR+2020/about Citizens
ARISE ARISE was started by UNDRR in 2015 to support the private sector to become a key partner in reducing disaster risk. It has a page of tools for the private sector. It also has a membership/networking function which is not automatic but must be applied for. For private sector partners, being a member of an ARISE Network facilitates members to build and foster resilient and prosperous business through the provision of access to information and good practices, tools and mechanisms for the integration of disaster risk reduction into business strategies and management, product development, enterprise risk management and continuity plans and strategies. ARISE members may provide services pro bono, depending upon the need and expertise.	https://www.ariseglobalnetwork.org/ See also: https://www.ariseglobalnetwork.org/learn/tools the membership page: https://www.ariseglobalnetwork.org/join Citizens
'Hard to reach' groups	
So called 'hard to reach' or 'seldom heard' groups are very diverse. Depending on context, they could include particular ethnic minority groups, refugees/ asylum seekers/ migrants, people facing language barriers, people who are homeless, people who are drug users, people living with HIV, or tourists, amongst others. They may be at greater risk in disasters, and they may require extra efforts on the part of CPAs or citizens to include them in disaster preparedness, planning, response or recovery. However, this is not always the case, and they always have capacities and not just vulnerabilities and can make important contributions if included in decision making. Also, groups who don't trust / are deeply cynical about government authorities, 'hermits' who don't engage with society, and people who don't have the time/money/bandwidth to worry about anything other than the present.	
Public Participation Partners (P3) INCLUSIVE ENGAGEMENT: REACHING THE HARD-TO-REACH Although not focused on emergency management, this site offers some useful starting points for those wishing to communicate or engage with hard-to-reach groups. Here are some tips, each of which come with more detail online:	https://publicparticipationpartners.com/reaching-the-hard-to-reach/ CPAs

• Seek out representatives of community groups.
• Provide alternatives to electronic participation.
• Provide easy access to translated materials.
• Continue to get the word out.
  ○ Ask for help from community leaders and representatives.
  ○ Post road signs throughout the study area.
  ○ See if information can be sent out with hard-copy utility bills
• Once you reach these groups, stay in contact.	

Migrants	
International Organization for Migration (IOM) This link provides a set of 20 resources for migrants in emergencies and crises. It contains guidelines, toolkits, infographics and templates for various purposes. **IOM 2018 ENGAGING MIGRANTS IN EMERGENCY PREPAREDNESS AND RESPONSE: Recommended actions for emergency management actors: International Organization for Migration (IOM)** A 24-page document which provides guidelines under the following headings: 1. Preliminary steps of engagement programmes for migrants • Ensuring the buy-in of key staff • Understanding migrant groups • Prioritizing migrant groups and individuals 2. Seeking migrants' buy-in on the engagement programme • Liaising with migrants • Designing and carrying out campaigns to promote engagement programmes • Promoting the buy-in of migrants 3. Adapting the programmes to the characteristics of migrants • Adapting the language of the programme • Adapting the content of the programme • Adapting the way programmes are rolled out • Including emergency management topics in non-traditional events 4. Keeping migrants engaged • Carrying out activities to sustain migrants´ engagement • Building a positive environment	https://micicinitiative.iom.int/toolkit-implementation https://micicinitiative.iom.int/resources/engaging-migrants-emergency-preparedness-and-response CPAs
UNHCR 2021 Effective Inclusion of Refugees: participatory approaches for practitioners at the local level: A toolkit by UNHCR and Migration Policy Group This is a 78-page document in a number of languages. It is available in different forms and with supporting materials:	https://www.unhcr.org/uk/effective-inclusion-refugees-participatory-approaches-practitioners-local-level

• Printable Handbook - covers the conceptual part of the Toolkit and includes readable and multimedia materials. • Online Handbook - an interactive online version of the Handbook which provides practitioners with a more user-friendly version and offers the ability to complete self-assessment checklists and to make notes at the end of each chapter. • Animated Explainer Video - offers practitioners an additional medium through which they can familiarise themselves with the main concepts of the Handbook. • 1-minute Promotional Video - raises awareness of the Toolkit and offers practitioners an initial conceptual awareness of its purpose and goals. • Scorecard - helps practitioners in the identification of good integration practices by applying a user-friendly scoring system. • Flyer - introduces the toolkit and describes its different components.	CPAs
Migrants in Disaster Risk Reduction - Practices for Inclusion (EUR-OPA) (2017) This 126-page publication presents existing practices and lessons learned on the integration of migrants into decision making, policy-setting and implementation of disaster risk reduction initiatives across a range of countries. Although it is a long document, each article is only a few pages in length. This publication builds upon the knowledge and experiences gathered through the Migrants in Countries in Crisis (MICIC) Initiative, a global state-led process for which IOM has been serving as Secretariat, and the Council of Europe's EUR-OPA programme on "Migrants, asylum seekers and refugees in the context of major risks prevention and management".	https://edoc.coe.int/en/environment/7383-migrants-in-disaster-risk-reduction-practices-for-inclusion.html CPAs
Homeless persons	
Homelessness Emergency Planning Toolkit: Disaster Preparedness to Promote Community Resilience, Information and Tools for Homeless Serving Providers and Disaster Professionals. U.S. Department of Veterans Affairs, the U.S. Department of Health and Human Services, and the U.S. Department of Housing and Urban Development. Description: This toolkit is designed to layout effective communication and coordination between all community partners to ensure homeless populations and other at-risk individuals can access needed services during response and recovery phases. The toolkit provides step-by-step plans for a community to ensure their homeless population is safe during and after a disaster. It	https://aspr.hhs.gov/at-risk/Pages/homeless-service-toolkit.aspx CPAs

begins with building relations with community leaders, pre-disaster planning and post-crisis recovery. See below for a 3-page quick introduction; a 24-page overview and introduction.	
DISASTER PREPAREDNESS TO PROMOTE COMMUNITY RESILIENCE Information and Tools for Homeless Service Providers and Disaster Professionals. Quick Glance at the Toolkit. U.S. Department of Veterans Affairs, the U.S. Department of Health and Human Services, and the U.S. Department of Housing and Urban Development. 3-page introduction to the toolkit.	https://www.va.gov/HOMELESS/nchav/docs/VEMEC-Disaster-Preparedness-508.pdf CPAs
DISASTER PREPAREDNESS TO PROMOTE COMMUNITY RESILIENCE Information and Tools for Homeless Service Providers and Disaster Professionals. **Introduction to Promoting Community Resilience.** U.S. Department of Veterans Affairs, the U.S. Department of Health and Human Services, and the U.S. Department of Housing and Urban Development. 2017. This comes in two versions: • A short, introductory 24-page toolkit which provides preparedness strategies to better integrate homeless service providers into emergency management systems, ensure that homeless service providers are capable of providing essential services after disaster, and prepare health care providers to be able to address the health-related needs of homeless individuals. • **Toolkit and Appendices.** U.S. Department of Veterans Affairs, the U.S. Department of Health and Human Services, and the U.S. Department of Housing and Urban Development. This is the more detailed, 144-page, full toolkit.	https://www.va.gov/HOMELESS/nchav/docs/VEMEC_Intro_20170713_Final_508.pdf https://www.va.gov/HOMELESS/nchav/docs/VEMEC_Toolkit_20170713_Final_508.pdf CPAs
Homelessness Inclusive Disaster Risk Reduction Queensland Government, Department of Housing, Local Government, Planning and Public Works People experiencing homelessness are more exposed to the risks from disaster events such as floods, cyclones and bushfires.	https://www.housing.qld.gov.au/initiatives/homelessness-inclusive-disaster-risk-reduction

Supporting people at risk to be prepared for a disaster can help save lives and build resilience. To address this issue, Community Recovery has partnered with the University of Sydney, Queenslanders with Disability Network and Community Services Industry Alliance and The University of Sydney to develop a Person-Centred Emergency Preparedness (P-CEP) Homelessness Outreach toolkit and educational resources for the emergency sector and other service providers that assist people experiencing homelessness. This site includes links to different resources including short overviews, videos and lived experiences.	CPAs
Drug users	
Post-disaster emergency response: Supporting people who use substances. A webpage by the National Collaborating Centre for Environmental Health, Canada, which outlines the unique risks drug users face during disasters and how professionals can support them using a harm reduction approach.	https://ncceh.ca/resources/blog/post-disaster-emergency-response-supporting-people-who-use-substances CPAs
Health, rights and drugs: harm reduction, decriminalization and zero discrimination for people who use drugs. A report by UNAIDS that provides a human rights and evidence-informed approach to reach people who inject drugs with essential health services to prevent a resurgence of the HIV/AIDS pandemic.	https://reliefweb.int/report/world/health-rights-and-drugs-harm-reduction-decriminalization-and-zero-discrimination-people CPAs
SAMHSA Disaster Mobile App A mobile application designed to provide support in the aftermath of disasters, focusing on the people in need. SAMHSA Behavioral Health Disaster Response App, recipient of a Silver Web Health Award from the National Health Information Center, is designed for behavioural health professionals and provides access to evidence-based mental health and substance use information, tools, and resources for use in the field. The app has been developed by the Substance Abuse and Mental Health Services Administration (SAMHSA)	https://store.samhsa.gov/product/samhsa-disaster-mobile-app/pep13-dkapp-1 CPAs

TABLE 17: RESOURCES FOR SHARING RISK PERCEPTIONS & ACTIONS

SHARING RISK PERCEPTIONS & ACTIONS	
Resources	**Links**

Centres for Disease Control and Prevention (CDC). (2021). **Access and Functional Needs Toolkit: Integrating a Community Partner Network to Inform Risk Communication Strategies**. Atlanta, GA: U.S. Department of Health and Human Services (HHS). Includes guidelines and ideas for emergency management officials, public health professionals, and other stakeholders to achieve effective risk communication by developing messages for the whole community. This includes individuals who may be at greater risk or who need additional assistance because of access and functional needs. Also includes Communication Planning for Children – see the **'Ready Wrigley'** series of information booklets for children.	https://www.cdc.gov/orr/readiness/00_docs/CDC_Access_and_Functional_Needs_Toolkit_March2021.pdf CPAs https://www.cdc.gov/orr/readywrigley/books.htm Citizens
Minions of Disruptions™ Produced by 'Day of Adaptation', a non-profit foundation based in the Netherlands. This is a collaborative board game, in which you look for possible ways to tackle climate change in your organisation and community. The climate adaptation game is suitable for companies, educational institutions, public institutions, non-governmental organisations (NGOs), communities and any other interested groups. This is gamified approach to sharing is not free and you must apply to get a quote for facilitating and tailoring the day to your needs.	https://dayad.org/activities/game-day/ See also: https://www.preventionweb.net/news/change-game-climate-change-story-collaborative-climate-board-game-climate-communication CPAs & Citizens
International Federation of Red Cross and Red Crescent Societies (IFRC) Red Cross / Red Crescent Climate Centre Climate and Development Knowledge Network **Disaster risk reduction game kit: Game 2: Ready! Facilitator Guidelines** A physical game to enable focused conversations with communities around location-specific disaster preparedness and disaster risk reduction. 'Ready' can be played using any disaster scenario and is most effective using a realistic scenario for the participants. Intended audience: Community members. The game can also be played with disaster managers/volunteers/ branch officers etc.	https://www.preventionweb.net/publication/disaster-risk-reduction-game-kit-game-2-ready CPAs & Citizens

World Health Organisation (WHO). (2017). Communicating risk in public health emergencies: A WHO guideline for emergency risk communication (ERC) policy and practice. Geneva: World Health Organization. Includes guidelines and recommendations for policy/decision makers, public health professionals, risk communication practitioners, and other stakeholders. See section 7 for the recommendations for building trust and engaging with affected populations. CPAs	https://apps.who.int/iris/bitstream/handle/10665/259807/9789241550208-eng.pdf CPAs
Henderson, F., and Helwig, K. 2022 **A Smart Guide to Flood Risk Communication**. CRW2018_04. Scotland's Centre of Expertise for Waters (CREW). See Participants Case Study: Raising flood risk awareness amongst older people CREW – Scotland's Centre of Expertise for Waters (page 18).	https://www.crew.ac.uk/ CPAs
Federal Emergency Management Agency (FEMA) 2020 PrepTalks: Dr. Daniel Aldrich "Social Capital in Disaster Mitigation and Recovery." Aldrich describes the positive impact of social ties (social capital) on recovery and resilience.	https://www.youtube.com/watch?v=z7A8m0zQ6T8 CPAs
Dan Aldrich shares his work with the Sydney University, Sydney Environment Institute 2023. He speaks of the way social networks, both personal and professional, matter especially during climate crises. He stresses the importance of networking, especially with people who think differently and access different resources, in building connections and expanding social ties.	https://www.sydney.edu.au/sydney-environment-institute/news/2023/05/02/climate-change-and-social-capital--professor-daniel-aldrich-visi.html CPAs
Net-centric working A page on the website of the Dutch Institute for Public Safety, which provides the latest news, practitioner documents, and videos about netcentric working in crisis management. The documents are in Dutch, but can be translated for free using https://translate.google.com or https://chat.openai.com/ See also: A decade of netcentric crisis management An academic paper that reviews a decade of netcentric crisis management in the Netherlands. Published in Disaster Management and Information Technology 2023	https://nipv-nl.translate.goog/informatievoorziening/netcentrisch-werken/?_x_tr_sl=nl&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=wapp https://research.vu.nl/ws/portalfiles/portal/226351557/32220%2042865%20a%2032220%2042865%20a CPAs

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TABLE 18: RESOURCES FOR RELATING – RISK REDUCTION RELATIONSHIPS

RELATING – RISK REDUCTION RELATIONSHIPS	
Resources	**Links**
CDC Reaching At-Risk Populations in an Emergency. Despite its US focus, it has useful ideas and guidance for specific activities to help create and maintain a Community Outreach Information Network (COIN).	https://emergency.cdc.gov/workbook/pdf/ph_workbookFINAL.pdf CPAs
National Science Foundation (USA) 2018 **The importance of community networks to disaster resilience**. Short article referring to research identifying a missed opportunity to benefit from existing community social networks to improve risk awareness or to improve individual or household preparedness.	https://new.nsf.gov/news/importance-community-networks-disaster-resilience CPAs
WHO 2021 Operational guide for engaging communities in contact tracing The purpose of this 30-page guidance is to reinforce the place of community engagement and participation in the contact tracing process.	https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-Contact_tracing-Community_engagement-2021.1-eng CPAs
Building Coalitions for Urban Resilience Toolkit This toolkit developed by the Global Disaster Preparedness Center (The American Red Cross and the International Federation Red Cross and Red Crescent Societies (IFRC)), presents an approach for building coalitions in cities to build resilience. This approach will allow you to: • Determine whether effective coalitions exist already to build resilience, and how to strengthen them. • Identify key organizations that have contributions to make to a coalition • Identify common goals for different stakeholders on the key issues to be addressed	https://preparecenter.org/resource/building-coalitions-for-urban-resilience-toolkit/ CPAs
Collaborating 4 Inclusion, Australia: Person-Centred Emergency Preparedness (P-CEP) Toolkit. Co-designed and tested with people with disability, Person-Centred Emergency Preparedness (P-CEP) enables people to self-assess their preparedness, capabilities and support needs and develop a personal emergency plan.	https://collaborating4inclusion.org/home/pcep/ CPAs & Citizens
National Flood Forum UK, Flood Action Groups Tools and guidance for setting up a Flood Action Group which is made up of a core of local people who act as a representative voice for their wider community.	https://nationalfloodforum.org.uk/worki CPAs & Citizens

Civil Defence Emergency Management Canterbury, New Zealand: **Community ready.** Points out the value of communities connecting, even without a disaster focus, to enable better disaster response and recovery. **WREMO Mō Mātou (About Us)** Explains the operational structure of WREMO with its 3 core groups: Community Resilience and Recovery, Operational Readiness and Response, and Business & Development.	https://www.cdemcanterbury.govt.nz/community-ready https://wremo.nz/about-wremo/ CPAs & Citizens
Australian Red Cross 2020 **Community-led Resilience Teams.** A 40-page guide to provide advice for engaging community members, emergency and recovery agencies, and other community stakeholders. It explains the simple steps required to establish and develop a CRT.	https://www.redcross.org.au/globalassets/cms-assets/documents/emergency-services/red-cross-community-led-resilience-teams.pdf CPAs & Citizens

TABLE 19: RESOURCES FOR BUILDING RISK COMMUNICATION APPROACHES

BUILDING RISK COMMUNICATION APPROACHES	
Resources	**Links**
LINKS Social Media and Crowdsourcing (SMCS) Technologies Library EU project which gathers and structures information about existing technologies to provide an up-to-date overview and thus support the selection of suitable technologies.	https://links.communitycenter.eu/index.php/List_of_Disaster_Community_Tech nologies CPAs
Juhani Latvakoski, Risto Öörni, Toni Lusikka, Jaana Keränen, (2022) **Evaluation of emerging technological opportunities for improving risk awareness and resilience of vulnerable people in disasters**. International Journal of Disaster Risk Reduction, 80, 103173 An academic paper which contains analyses and evaluations of emerging technological opportunities for improving risk awareness and resilience of vulnerable people in disasters.	https://doi.org/10.1016/j.ijdrr.2022.1031 73 CPAs
Interstate Technology and Regulatory Council (ITRC) Risk Communication Toolkit Although a US-based resource and focused on environmental issues and contamination, it does provide some good overview materials (including videos) on risk communication as well as a Risk Communication Plan Description and Template amongst other resources. This is a resource to help broaden understanding.	https://rct-1.itrcweb.org/ CPAs
PAHO Risk COVID-19 Communication and Community Engagement (RCCE) Planning Template PAHO is the Pan American Health Organization. This resource is to support PAHO Country Offices and national/subnational emergency management mechanisms to develop or update their risk communication and community engagement (RCCE) plans related to COVID-19.	https://www.paho.org/en/file/63164/download?token=olBs0mPN CPAs
Lisa S. Meredith, Lisa R. Shugarman, Anita Chandra, Stephanie L. Taylor, Stefanie Howard, Ellen Burke Beckjord, Andrew M. Parker, Terri Tanielian 2008 **Analysis of Risk Communication Strategies and Approaches with At-Risk Populations to Enhance Emergency Preparedness, Response, and Recovery'** Final Report. RAND Health Working Paper. Presents the results of an assessment that involved review of the literature on emergency preparedness risk communication and public health messaging strategies; the compilation of educational and outreach materials for emergency preparedness communication with at-risk populations; and site visits in three	https://www.rand.org/pubs/working_pap ers/WR598.html CPAs

states and the Washington, DC area to identify gaps in the practice of risk communication with at-risk populations.	
Risk Communication and Community Engagement for Contact Tracing in the Context of COVID-19 in the Region of the Americas Includes tools for implementing a communication strategy for contact tracing such as posters, video script on communication and action, audio and video, script of a soap opera, guidance on using social media to make information credible	https://iris.paho.org/bitstream/handle/10665.2/57412/PAHOPHEIMS230001_eng.pdf?sequence=1&isAllowed=y CPAs
DepEd School Watching Application (DepEd SWApp) DepEd SWApp is a free app for Android that helps students from all grades learn about disaster preparedness. It is designed to be simple and user-friendly. It's available for all Android devices. The main goal of DepEd SWApp is to give students the knowledge to deal with hazards. It is a tool for students and also for teachers, providing information in an easy-to-understand format. This tool is the result of a collaborative effort between DepEd, Save the Children Philippines, and Prudence Foundation.	https://deped-swapp-school-watching-application.en.softonic.com/android There is also a video which describes it: School Watching Application (SWApp) https://www.youtube.com/watch?v=svQEpxnNP8c CPAs & Citizens
Climate Resilience Toolkit: Arts-based activities for changing climates Dr Meg Parsons (University of Auckland) and Dr Susanne Pratt (UTS) This toolkit represents a new way to approach climate change communication and climate adaptation by allowing people to think about and imagine climate resilience, climate justice, and adaptation using different media. The toolkit is structured around a series of activities designed to engage people with different concepts and actions linked to climate change adaptation in ways that emphasise hope, empowerment, and collective action. A Activities include: • Adaptation Paths: A Climate Change Journey: This group art project encourages participants to visualise their journey of climate adaptation, from awareness to action. • United We Stand: Clay Figurines of Community Resilience: An activity that uses clay figurines to represent the roles individuals play in building climate-resilient communities. • Theatre of the Resilient: Inspired by the Theatre of the Oppressed, this activity explores power dynamics and climate resilience through interactive theatre and employing AI technologies to generate scripts.	https://weadapt.org/wp-content/uploads/2024/02/climate-resilience-toolkit-CC.pdf CPAs & Citizens
International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) 2020 Insight: A Participatory Game Capturing Community Held Knowledge for Disaster Resilience and Sustaining Heritage Insight is a creative tool for encouraging a people-centred approach to	https://www.iccrom.org/sites/default/files/Insights_FINAL-LAYOUT_131020.pdf CPAs & Citizens

disaster risk reduction, which integrates concerns for cultural and natural heritage. The game is intended for a wide range of institutions and individuals, who are interested in developing community-centred disaster risk reduction initiatives. In order to get a 360-degree view, people from different age groups, as well as different professions and social backgrounds, should be invited to participate.	
Co-designing Solutions for Urban Community Resilience A methodology to co-design viable, inclusive and sustainable community resilience solutions This toolkit is developed by the Global Disaster Preparedness Center (The American Red Cross and the International Federation Red Cross and Red Crescent Societies (IFRC)) 2019 Part 1 contains tools to get started, and should be used if you: • have not already done Human Centred Design (HCD) training • would like to know more of the theory underpinning the tools and activities in Part 2 • want to build your skills as a facilitator Unit One of Part 1 is an introduction to HCD, while Unit Two provides helpful tools and information about being a successful facilitator. Part 2 can be used if you are working with communities and do not need to conduct HCD training. Note: It is not necessary to go through every single activity in the toolkit if you or your participants do not have time. Sample agendas are in Part 3 to help plan activities Part 3 provides links to other helpful resources (including additional toolkits recommended to complete Key Actions 1 & 2), as well as a collection of print-ready templates which can be used for the activities in Part 2.	Introduction to the toolkit: https://preparecenter.org/toolkit/urban-community-resilience-toolkits/ Part 1: https://preparecenter.org/wp-content/uploads/2019/06/Codesign-Tool-Part-1.pptx Part 2.1: https://preparecenter.org/wp-content/uploads/2019/06/Codesign-Tool-Part-2.1.pptx Part 2.2: https://preparecenter.org/wp-content/uploads/2019/06/Codesign-Tool-Part-2.2.pptx Part 3.1: https://preparecenter.org/wp-content/uploads/2019/06/Codesign-Tool-Part-3.1.pptx Part 3.2: https://preparecenter.org/wp-content/uploads/2019/06/Codesign-Tool-Part-3.2.pptx CPAs

ANNEX 2: UNDERSTANDING TARGET GROUPS IN DRR

INTRODUCTION

This exercise was conducted during the 2nd Knowledge Exchange Event (KEE) workshop on 22 April 2024, involving CPAs from RiskPACC and European Forum for Urban Security (Efus)[18] cities. The objective was twofold:

1. To evaluate how well participants could empathise with a chosen target group[19] regarding disaster risk reduction in the context of the RiskPACC framework.
2. To assess to what extent participants recognised the potential input and contributions from their target group to DRR, beyond looking after themselves.

These factors act as indicators of participants' experience with and/or aptitude for participatory approaches to DRR. For the exercise, participants were divided into small groups. Each group was tasked with identifying a specific hazard and a group of people affected by that hazard. They had the freedom to choose any hazard or group. The participants then considered the questions their target group might have in four areas of the RiskPACC framework: understanding, sharing, relating, and building.

In total, 12 small groups were formed. The following hazards were selected:

1. long-term blackouts (1x)
2. floods (6x)
3. technological accidents (1x)
4. heatwaves (2x)
5. forest/wildfires (2x)

In addition, the following groups of people were selected:

1. grocers / business owners (2x)
2. local CPA units (1x)
3. older people (4x)
4. tourists (1x)
5. blind people (1x)
6. Gen X and Gen Y (1x)
7. foreigners (1x)
8. volunteers (1x)

Participants' responses were rated as 'beginner', advanced beginner', 'intermediate' or 'advanced' following the following assessment criteria:

Beginner	Advanced Beginner	Intermediate	Advanced

[18] European Forum for Urban Security (Efus) https://efus.eu/

[19] We have used 'target group' instead of 'vulnerable group' because CPAs may have specific reasons for targeting particular groups for their risk communications and because the word vulnerable often carries connotations of passivity and helplessness which are often misleading.

25 points or below	26-50 points	51-75 points	Over 75 points

- Each question left blank – minus 20 points
- Each question with only one item – minus 10 points
- Potential input of target group to DRR not mentioned anywhere (beyond how they can look after themselves) – minus 60 points
- Potential input of target group to DRR only mentioned once across all questions (beyond how they can look after themselves) – minus 40 points

The specific scenarios discussed by the participants are described below.

SCENARIOS DISCUSSED BY PARTICIPANTS

SCENARIO 1: LONG-TERM BLACKOUTS & GROCERS

Municipality staff (firefighters) picked long-term power blackouts as their main hazard of concern. They chose to focus on the implications for grocers.

When asked to think of questions grocers might ask regarding local risks related to the hazard, the participants came up with the following list:

- For how long is the power gone?
- What's the reason for the blackout?
- Can I get a refund for damage or losses?
- How can I sell products without a cash register?
- Will there be protection against looting?

When asked to think of questions grocers might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- How am I going to store the food?
- How am I going to sell the food?
- How will I receive new deliveries?
- Will there be rations in place and how can we as a business comply?

When asked think of questions grocers might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following item:

- How do we communicate in the case of a blackout?

When asked to think of questions grocers might ask regarding building risk reduction relationships, the participants came up with the following item:

- Can we establish information channels beforehand?

When asked to think of questions grocers might ask regarding co-creation in risk communication the participants did not provide an answer.

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-20	-20	-60	BEGINNER

SCENARIO 2: FLOODS & BUSINESS OWNERS

Researchers and technological tool providers picked floods as their main hazard of concern. They chose to focus on the implications for business owners.

When asked to think of questions business owners might ask regarding local risks related to the hazard, the participants came up with the following list:

- How often does a flood event affect the area where my business is located?
- How severe…?
- Are there any flood protection works (structural / non-structural measures) foreseen to be implemented in this area?

They indicated that the questions they came up with for the local people context (next) also apply here.

When asked to think of questions business owners might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Is there any compensation foreseen in case of a hazard?
- Under which conditions?
- Whom should I address to learn more about
    - compensation procedure
    - events
    - store protection measures
    - what to do in case of an emergency?

When asked think of questions business owners might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- How can info about an upcoming flood / storm be shared among owners of adjacent stores?
- How can we be properly informed in advance in case of the upcoming storm in this area?
- How to react in case of a flood? (e.g., when to evacuate the building)
- Who is responsible to run evacuation plan?
- How can I validate info received for an upcoming storm?

When asked to think of questions business owners might ask regarding building risk reduction relationships, the participants came up with the following list:

- Who can provide valid info / accurate warnings for an upcoming hazard?
- Who are the CPAs responsible to manage flood in my area (Local CPA & national CPA)

When asked to think of questions business owners might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Is there a flood EWS operating in my area?
- Is there training material in place to be better prepared against a flood event?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-0	-60	ADVANCED BEGINNER

SCENARIO 3: TECHNOLOGICAL ACCIDENTS & LOCAL CPA UNITS

Firefighters (CPA) picked technological accidents as their main hazard of concern. They chose to focus on the implications for local CPA units.

When asked to think of questions local CPA units might ask regarding local risks related to the hazard, the participants came up with the following list:

- What are the risks? Can they affect me?
- What accidents have happened? What are the consequences to people? To infrastructure? To local communities?
- How can I protect myself? And my community?
- Are there trainings available on identified risks? Where?

When asked to think of questions their chosen social group might ask regarding local social context to prepare for the hazard, the participants gave the following response. [*This response doesn't answer the question and, therefore, has been treated as a blank response in rating*].

- We didn't choose any social groups.
- Local units for civil protection can integrate doctors, construction workers, police officers, any person with different social context.
- People with different social backgrounds and culture have different knowledge and interpretations

When asked think of questions local CPA units might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- If an accident happens, how can I be informed?
- How can I help? Where do I go?

When asked to think of questions local CPA units might ask regarding building risk reduction relationships, the participants came up with the following list:

- To be a participatory group influencing risk management authorities and to integrate groups' perception in risk management.

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Is there a siren to warn citizens of an accident?
- What platforms of communication and warning exist?
- Do I need to have a mobile phone?
- Do I need to install an app for communication among group users?
- Do we participate in exercises? How? How regularly? Test evacuation routes? Know existence of shelters?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-20	-10	-0	INTERMEDIATE

SCENARIO 4: HEATWAVES & OLDER PEOPLE

Participants picked heatwaves as their main hazard of concern. They chose to focus on the implications for older people.

When asked to think of questions older people might ask regarding local risks related to the hazard, the participants came up with the following list:

- Is there a plan in place to give assistance to elderly people during a heatwave?
- What behaviours should I make to minimise the risk?
- What are the possible consequences on my health if I don't follow guidance?
- How will I be warned during the event?

When asked to think of questions might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- How many volunteers are deployed in my area during such events?
- How many subjects to this risk live in my area?

When asked think of questions might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- Will this dialogue be [illegible]?
- Will it be accessible for the hard of hearing?
- If in person will it be accessible for PRM?

When asked to think of questions might ask regarding building risk reduction relationships, the participants came up with the following list:

- Should healthcare providers be involved in risk mitigation?

- Should our concerns be heard from policy makers?

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- How do you engage people who are not tech savvy?
- How do you plan to ensure a high accessibility of the info considering the differences linked to physical limitations?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-0	-40	INTERMEDIATE

SCENARIO 5: FLOODING & OLDER PEOPLE

Participants picked as flooding their main hazard of concern. They chose to focus on the implications for older people.

When asked to think of questions might ask regarding local risks related to the hazard, the participants came up with the following list:

- How and where to get support when mobility is restricted / limited?
- Which problems for elderly have been detected in the past?
- Are there ideas to overcome this problem in the future?
- Are elderly people considered in evacuation plans?

When asked to think of questions older people might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Where to receive help in the neighbourhood?
- Social structure in the neighbourhood?
- Where can I get information?
- Civil S.O. in the area?

When asked think of questions might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- How to communicate with 'limited digitalisation'?
- One-way / receive information. - Two-way / send information.

When asked to think of questions might ask regarding building risk reduction relationships, the participants came up with the following list:

- Do CPAs or volunteers have information about areas where a lot of elderly people live?

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Is special communication material developed for elderly people?
- How are elderly involved?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-10	0	ADVANCED

SCENARIO 6: FLOODING & TOURISTS

Participants picked floods as their main hazard of concern. They chose to focus on the implications for tourists.

When asked to think of questions tourists might ask regarding local risks related to the hazard, the participants came up with the following list:

- Is this hiking path at risk of flooding?
- Is it safe for hiking?
- Which authorities can I contact in case of emergency in this region?
- Does the CPA ask the language?
- How to interpret warning signs?
- Do I need a guide / preparation by ranger?

When asked to think of questions tourists might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Available resources
- Language support
- Tourist info centre

When asked think of questions tourists might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- Language barriers
- Helpline in English / my language
- Collaboration between country of origin and host country (e.g., in case of hospitalisation)

- Right of translation for unique languages
- Is there even an embassy?

When asked to think of questions tourists might ask regarding building risk reduction relationships, the participants came up with the following list:

- Asking the hotel - Manager
- Tourist Office
- Embassy / Consulate

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Honest answer: tourists wouldn't participate

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-10	-60	ADVANCED BEGINNER

SCENARIO 7: FLOODING & OLDER PEOPLE

Firefighters picked flooding as their main hazard of concern. They chose to focus on the implications for older people.

When asked to think of questions older people might ask regarding local risks related to the hazard, the participants came up with the following list:

- In case of flooding, who will provide me with necessary provisions? (Food, Medicine).
- In case of evacuation, who's responsible for it? Where will I be evacuated?
- How do I get the information?
- Who will take care of my pet?

When asked to think of questions older people might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Who is responsible for notifying my family?
- Will I be separated from my neighbours / family?
- What if I don't want to move? Will the authorities make me?

- Do I have to prepare? What should I take?
- Who will protect my property once I'm evacuated?

When asked think of questions might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- If I'd lost my hearing aid, will I be able to communicate with CPA?
- I don't have a smartphone; how can I get basic information?
- How do I know that my concerns are heard by CPA? Will they be dismissed?
- How will I know that it's safe to return?

When asked to think of questions might ask regarding building risk reduction relationships, the participants came up with the following list:

- Are there any training or meetings for myself to learn basic information on risks in my area?
- Does my church group / local activity group is/can be a part of risk reduction effort?
- Should I prepare my property for leaving? Sign on the door that I'm evacuated already, or will the CPA do it?

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Are there materials and instructions in formats suitable for elder citizens? (e.g., Big Fonts, Audio Formats, Other cues?)

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-10	-40	ADVANCED BEGINNER

SCENARIO 8: FLOODING & BLIND PEOPLE

Participants picked floods as their main hazard of concern. They chose to focus on the implications for blind people.

When asked to think of questions blind people might ask regarding local risks related to the hazard, the participants came up with the following list:

- Where blind people went during previous floods?
- What they take with themselves?
- Where they called for informations?
- Who helped them with everything? Emergency, dog, evacuation, etc.

When asked to think of questions blind people might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Who is responsible for social service for the blind?
- How CPAs will help me in this situation?
- Is there any possibility to get financial support?
- Is there any place for evacuation? (Me and my dog).

When asked think of questions blind people might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- Do you have any plans in braille (informations, brochure, - in case of flood)
- How you will solving problems with community of blind people?
- Do you have any phone numbers on the local blind services?
- Do you realise any practicals /trainings How to behave in case of flood?

When asked to think of questions might ask regarding building risk reduction relationships, the participants came up with the following list:

- How to build better connection with local social services?
- Volunteers organisation?

When asked to think of questions blind people might ask regarding co-creation in risk communication the participants came up with the following list:

- Blind people might ask what the communication materials say about keeping the dog in evacuation centre?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-10	-60	ADVANCED BEGINNER

SCENARIO 9: HEATWAVES & OLDER PEOPLE

Municipality staff picked heatwaves as their main hazard of concern. They chose to focus on the implications for older people.

When asked to think of questions older people might ask regarding local risks related to the hazard, the participants came up with the following list:

- Areas mostly affected
- Which specific problems can be caused by heat waves and how many people have been affected by heat in the past years.
- What does the CPAs do to protect citizens
- Which are the best behaviours to be safe.

When asked to think of questions older people might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- Is there any economic support to help citizens (example: AC at home).
- Is there any association that may help me face this problem?

When asked think of questions older people might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- How can I be informed?
- Are there events?
- Can I ask the neighbourhood councils to keep me updated?
- Which means/tools can I use that are technology free?
- Can my son / daughter be considered as contact person for news directed to me in case of technological means?
- Who should I contact in case of need?

When asked to think of questions older people might ask regarding building risk reduction relationships, the participants came up with the following list:

- Can I involve my son/daughter as contact with the CPAs or other stakeholders?
- Is there any tools (to use at home or [illegible]) that provides an alarm to the CPAs in case of need?

When asked to think of questions older people might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Is it possible to have printed [illegible] flood climatic risks and corrected behaviours? Maybe brochures send directly at home.
- Is it possible to receive information by radio or with a call center?

- Is there an office where I can go to have information about climatic risks?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-0	-60	ADVANCED BEGINNER

SCENARIO 10: FOREST FIRES & GEX X + GEN Y

Participants picked forest fires as their main hazard of concern. They chose to focus on the implications for Gen X + Gen Y.

When asked to think of questions Gen X + Gen Y might ask regarding local risks related to the hazard, the participants came up with the following list:

- How many man-made forest fires have there been in [location redacted].
- Who is allowed to use facilities in the forest (e.g., public fireplaces, trails, hiking routes, etc.)
- Aren't European / [nation redacted] forests becoming more and more dry due to heatwaves / droughts?

When asked to think of questions Gen X + Gen Y might ask regarding local social context to prepare for the hazard, the participants came up with the following list:

- What (kind of) people are living near our forests?
- What (kind of) organisations are installed to protect our forests?
- Is my group aware of this hazard?
- Is my group more or less aware of rules and regulations?
- Are there disturbances like general heatwaves, droughts, or deforestation?
- Are people environmentally aware and willing to protect the forests?
- Isn't there a trend to be in use forest facilities (e.g., fireplaces) more often / differently?
- Is there a plan / handbook / rulebook? Is there a targeted offer to Gen X and Gen Y about this topic?

When asked think of questions Gen X + Gen Y might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- Who is the responsible authority for this forest?
- How can I be part of the governance, for example, in case I would like to change the rules on how the forest is allowed to be used?

- Are there existing communication channels we could already use? Are they known to the interested parties?

When asked to think of questions Gen X + Gen Y might ask regarding building risk reduction relationships, the participants came up with the following list:

- What do I need to offer to the authorities in order to get more rights (e.g., camping in the forests?)
- Are there any information events (e.g., fire departments, local governments) that I can take part in?
- Are the authorities aware of my group's interest in climatic risks, climate change, etc.?
- Where could my group of people hand in our vision for future usage of our forests?

When asked to think of questions Gen X + Gen Y might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Do we have shared ~ ?
- Does the group know about the other group's ~?
- Do the authorities know how to reach us?
- Can we establish an ongoing exchange?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-0	-0	ADVANCED

SCENARIO 11: FLOODING & FOREIGNERS

Participants picked floods as their main hazard of concern. They chose to focus on the implications for foreigners.

When asked to think of questions foreigners might ask regarding local risks related to the hazard, the participants came up with the following list:

- Do I live in a flood prone area?
- Where can I find that information?
- Will I find information in my language?
- Where can I get help and how? (in case of flood)
- Will they understand me? (Can we communicate in common language?)

When asked to think of questions foreigners might ask regarding local social context to prepare for the hazard, the participants came up with the following item:

- Is there a community of people from my country? Will they help me?

When asked think of questions foreigners might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following list:

- Both examples apply [refers to examples listed on the question sheet - marginalised groups and immigrants].
- Who do I contact for help / information?
- Will I get special info as a foreigner?
- Will the CPAs understand my culture?
- What if I am expected to do something that is in conflict with my cultural / religious beliefs?

When asked to think of questions might ask regarding building risk reduction relationships, the participants came up with the following list:

- Who is engaged? (which groups, CPAs…?)
- Who are the right persons to contact?
- Where do I go if I want to help my community?
- Where can I live while my house is cleaned / restored?
- Do I get money for the damage?
- How can I contact the different players / actors involved?

When asked to think of questions might ask regarding co-creation in risk communication the participants the participants came up with the following list:

- Will communication materials be developed in multiple languages?
- With clear symbols / visualisation?
- Will the communication be disseminated through different channels, so I can easily find information?

ASSESSMENT:

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-10	-40	ADVANCED BEGINNER

SCENARIO 12: WILDFIRES & VOLUNTEERS

Municipality staff picked wildfires as their main hazard of concern. They chose to focus on the implications for volunteers.

When asked to think of questions volunteers might ask regarding local risks related to the hazard, the participants came up with the following item:

- A volunteer might ask how to help elderly people in his neighbourhood prepare in case of fire.

When asked to think of questions volunteers might ask regarding local social context to prepare for the hazard, the participants came up with the following item:

- A volunteer would be able to see from the areas where the homes of elderly people have been mapped and could help evacuate them.

When asked think of questions volunteers might ask regarding engaging in two-way dialogue with authorities and other citizens, the participants came up with the following item:

- A volunteer will wonder whether they can alert the authorities and be credible.

When asked to think of questions volunteers might ask regarding building risk reduction relationships, the participants came up with the following item:

- A volunteer might ask engage people in his neighbourhood to train in case of fire

When asked to think of questions volunteers might ask regarding co-creation in risk communication the participants the participants came up with the following item:

- A volunteer might ask how he can get trained to help people with special needs

Assessment

Number of questions left blank	Number of questions with only one item	Mention of target group's potential to contribute	Total score
-0	-50	-0	ADVANCED BEGINNER

CONCLUSION

The main finding from this exercise during the 2nd RiskPACC Knowledge Exchange Event is the significant variation in participants' scores regarding their ability to empathise with and recognise the potential contributions of different target groups in disaster risk reduction (DRR). Scores ranged from beginner (8%) to advanced beginner (58%) to intermediate (17%) to advanced (17%) highlighting the differing levels of experience with or aptitude for participatory approaches to DRR. This variability demonstrates that a one-size-fits-all approach to implementing the RiskPACC framework is ineffective. Given the different starting positions of CPAs, this deliverable proposes a staged approach, described in Section 6, with levels tailored to beginners, advanced beginners, intermediate, advanced intermediates, and advanced participants.

ANNEX 3: THE DIFFERENT STARTING POINTS OF CPAS

INTRODUCTION

On the 7th of March 2024, an interactive webinar was organised in the context of the European Forum for Urban Security (EFUS). The findings of this webinar are indicative of how DRR professionals engage residents in DRR communications, broadly reflecting the experiences European CPAs shared with the authors during discussions and presentations. Forty participants registered for the event. All worked in areas (related to) disaster risk management (see Figure X). Participants were asked to share their experiences and views on a range of topics related to stakeholder engagement in DRR communications. Participants were invited to speak in either English or French - or write in any language they felt most comfortable with. Multiple options were given to provide input, i.e., speaking, writing in the Zoom message app, and responding to questions via Mentimeter. These three options combined elicited feedback and input from the majority of participants. However, some participants opted to simply listen and not share their views. They had been informed that that was fine too.

THE RESULTS OF THE KNOWLEDGE EXCHANGE

FIGURE 7: RESPONSES (19) TO THE QUESTION, 'WHAT IS YOUR AREA OF PRACTICE?'

There was variation in the extent to which participants currently engaged citizens in their work (see Figure X), but most had limited experience in this area, only engaging citizens through infrequent presentations and consultations.

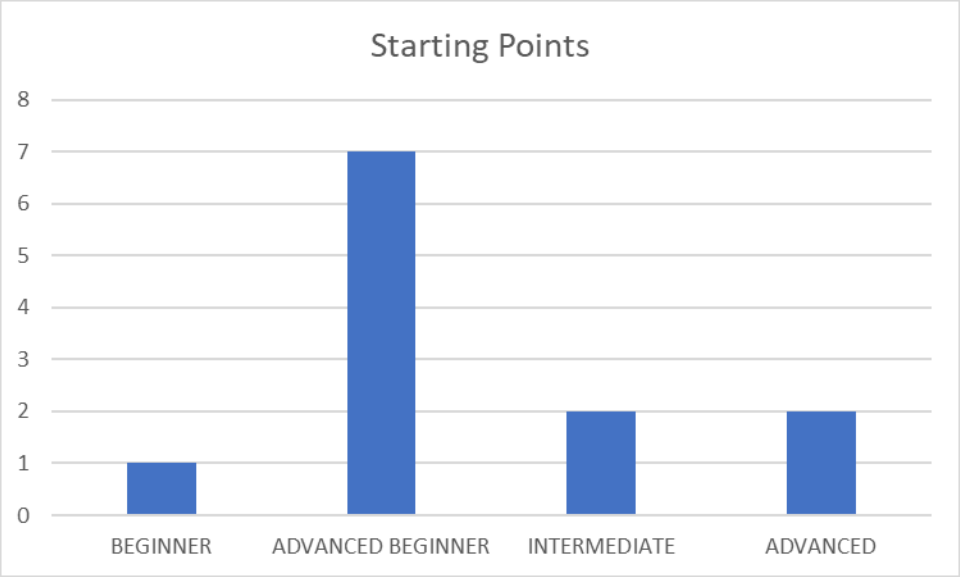

FIGURE 8: STARTING POINTS

DRR professionals vary in the extent to which they engage residents in DRR communications

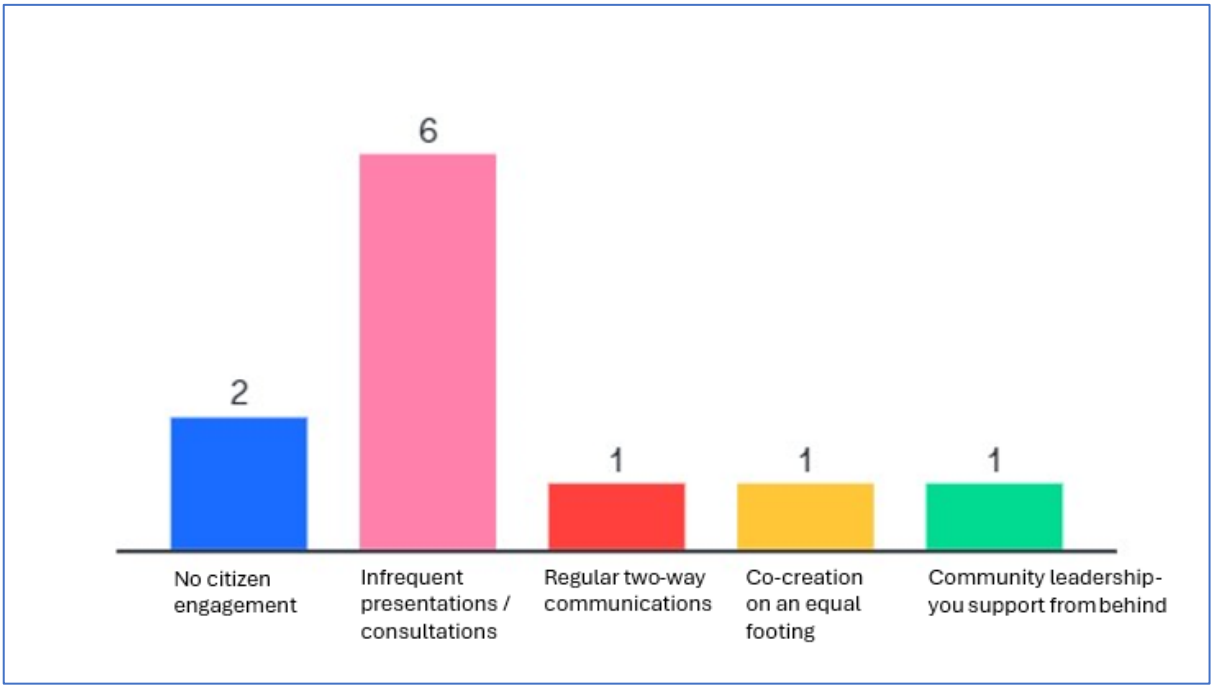

FIGURE 9: RESPONSES (19) TO THE QUESTION, 'WHAT IS YOUR AREA OF PRACTICE?'

Figure 10 depicts examples that participants mentioned of ways in which they engaged with citizens in their work. These have been plotted against a horizontal axis to show the extent to which the action is 'top-down' or 'bottom-up'. While some activities were straightforward to plot (e.g., 'surveys' being top-down), most were not, as their nature

depends entirely on how they were organised in practice, such as 'workshops'. What this highlights is that the terminology used to describe citizen engagement can obscure more than it reveals. For example, not all activities called ‘co-creation labs’ facilitate co-creation on an equal footing. Indeed, many start with top-down imposed problems and solutions. A helpful guide to facilitating genuine dialogue around DRR, therefore, needs to specify how activities should be organised and what issues should be considered, regardless of what those activities are called.

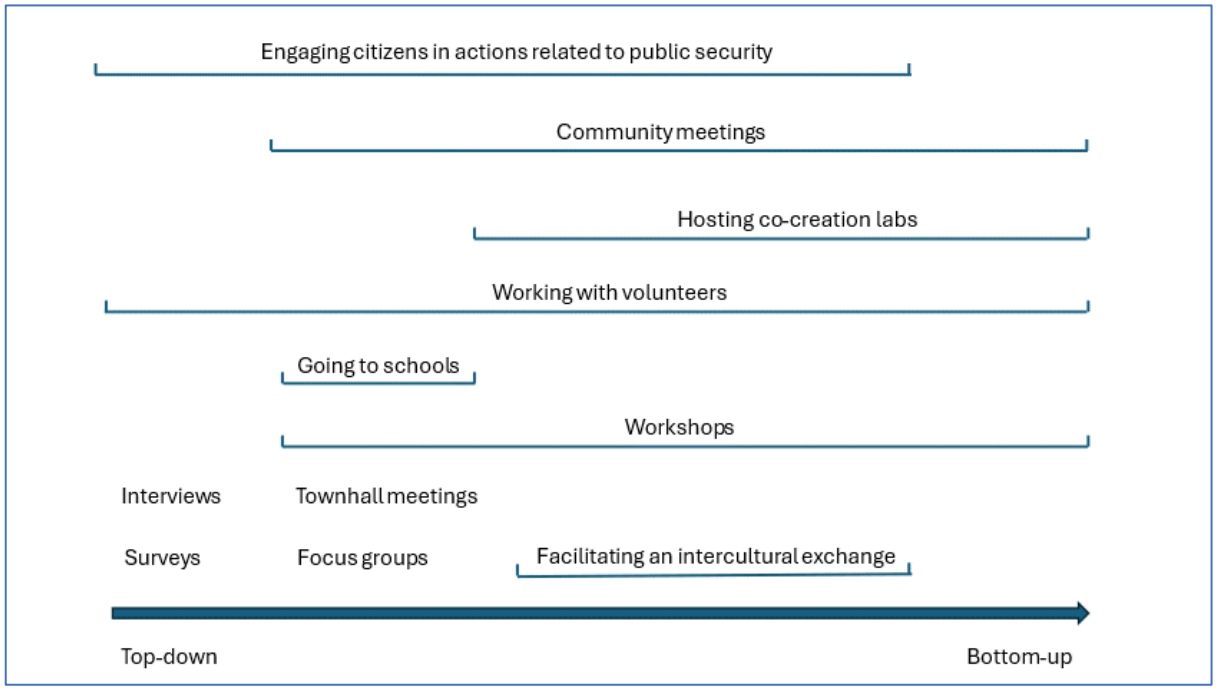

FIGURE 10: RESPONSES (11) TO THE QUESTION, ‘IN WHAT WAYS HAVE YOU ENGAGED CITIZENS IN YOUR WORK?'

PLOTTED AGAINST A HORIZONTAL AXIS INDICATING TO WHAT EXTENT THE ACTION IS 'TOP-DOWN' OR 'BOTTOM-UP'.

When asked what level of citizen engagement they aimed for next in their work, the majority stated that they aimed for ‘co-creation on an equal footing’ (see Figure X). Given their current level of citizen engagement, this indicates that some disaster management authorities want to learn to run before they can walk. Also, it highlights a lack of recognition of the value of regular two-way communication with citizens, a category no participant selected.

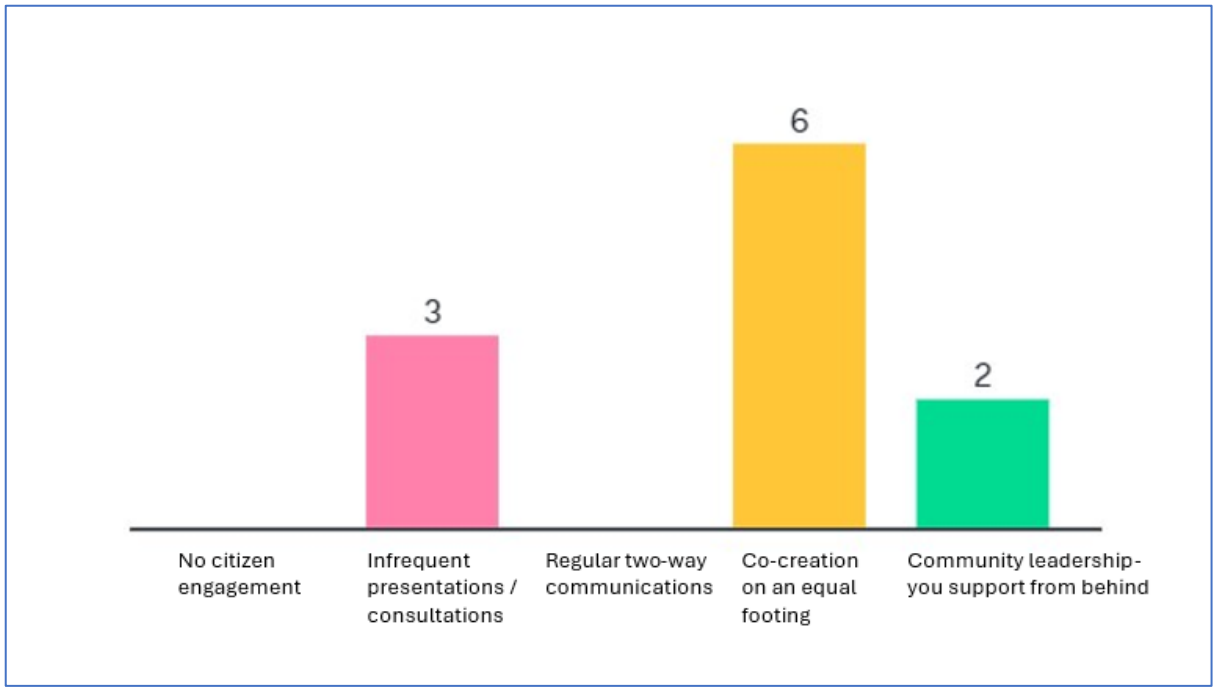

FIGURE 11: RESPONSES (11) TO THE QUESTION, 'WHAT LEVEL OF CITIZEN ENGAGEMENT DO YOU AIM FOR NEXT?'

Participants were asked to put themselves in the shoes of citizens and give examples of factors that prevent citizens from engaging with their work. The main issues they identified were a lack of trust, a lack of time, and a lack of interest (see Figure X).

FIGURE 12: RESPONSES (20) TO THE QUESTION, 'WHAT FACTORS PREVENT CITIZENS FROM ENGAGING WITH YOUR WORK?'

Participants were also asked to name factors that enabled citizens to engage with their work. Their answers have been categorised in table 20.

TABLE 20: RESPONSES (23) TO THE QUESTION, 'WHAT FACTORS ENABLE CITIZENS TO ENGAGE WITH YOUR WORK?'

Clarity	Positive relationships	Empowerment	Good communication	Access	Supportive environment
Clear goal	Prior collaboration	Sense of involvement	Good communication	Multi-channel alternative	Friendly staff or public
Know decision making process	Prior communication	Giving them ownership	Listen before talking	Easy access	Safe-neutral space
	Trust		Communication	Nearby	Support
	Continuous consulting		Spend time understanding	Low threshold	
	Commitment from consultant		Information		

Participants were also asked to name factors that prevented them from engaging with citizens in their work. Their answers have been categorised in table 21.

TABLE 21: RESPONSES (19) TO THE QUESTION, 'WHAT FACTORS PREVENT YOU FROM ENGAGING WITH CITIZENS IN YOUR WORK?'.

Influential actors not interested	No control over project	No time or money	Need more support	Methodological challenges
Authorities listen to scientists	They are no formal partner	Time consuming	Not enough support	Methodology
	ToR doesn't require it	Time and economic constraints	Lack of experience	Lack of a scientific framework
	I am not the organiser	Budget	Positionality or doubt	Research design
		Costly and time consuming	High expectations	They don' t follow the rules
		Availability		
		Too much other work		

Finally, participants were asked what factors enabled them to engage with citizens in their work. The main issue identified was the desire to know (see Figure 15).

FIGURE 13: RESPONSES (13) TO THE QUESTION, 'WHAT FACTORS ENABLE YOU TO ENGAGE WITH CITIZENS IN YOUR WORK?'

CONCLUSION

The interactive webinar showed that DRR professionals vary in the extent to which they currently engage citizens in their work. The results from the Mentimeter quiz showing participants' current level of citizen engagement is provided below in Figure 14.

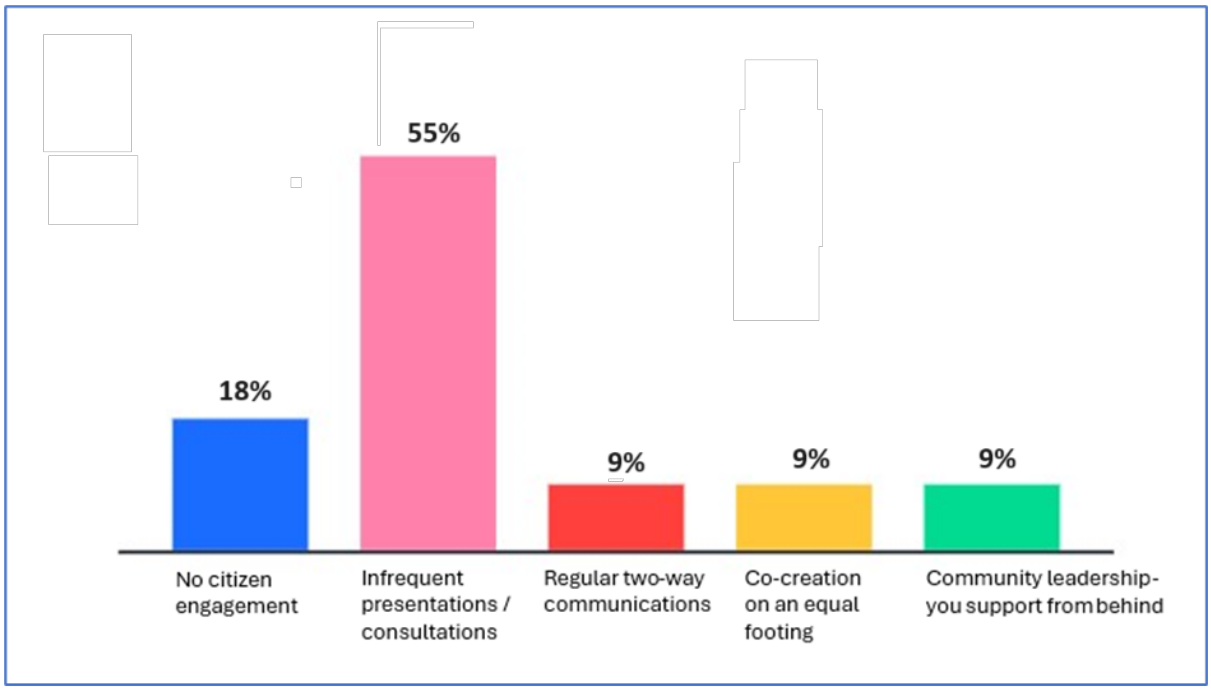

FIGURE 14 PARTICIPANTS' CURRENT LEVEL OF CITIZEN ENGAGEMENT

While some professionals only engage with citizens through infrequent presentations and consultations, others are beginning to explore more collaborative methods. This variation highlights that professionals have different starting points when it comes to citizen engagement. It underscores the necessity for tailored advice and guidance that

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meets each professional at their current level of engagement. This deliverable provides a staged approach to implementing the RiskPACC framework (see section 6) to address this need.

ANNEX 4: WORKING WITH DIFFERENT COMMUNITIES

8.1 For beginners: what does the framework mean for different social groups?

This section is intended for readers, such as CPAs, who are new to engaging with different communities in risk communication. It provides nine examples illustrating how the four RiskPACC framework modules could be used by specific social groups: CPAs, volunteers, business owners, women and girls, older people, children, disabled people, immigrants, and hard-to-reach groups. Each example is presented briefly within the context of a different emergency management sector related to the UN clusters (see https://emergency.unhcr.org/coordination-and-communication/cluster-system/cluster-approach).

The purpose of this section is to show that that different groups of people have different perspectives, needs, capabilities, and constraints related to risk communications (and DRR in general) and that it is, therefore, ineffective to approach "citizens" as a homogeneous group.

This section covers the following EM sectors and social groups

1. Civil protection authorities & emergency communications
2. Volunteers & DRR in education
3. Business owners & logistics in disaster situations
4. Women and girls & protection in disaster situations
5. Older people & emergency shelter
6. Children & early recovery
7. People with disabilities & livelihoods in disaster situations
8. Immigrants & nutrition in disaster situations
9. Hard to reach groups & water, sanitation, and hygiene (WASH)

It is followed by a section describing a more advanced, intersectional, approach that looks at the following:

1. Gender + pregnancy & health in disaster situations
2. Gender + ethnicity & health in disaster situations
3. Gender + religion & health in disaster situations
4. Gender + social class & health in disaster situations

8.1.1 APPLYING THE FRAMEWORK TO CPAS AND EMERGENCY COMMUNICATIONS

The UN's EM telecommunications cluster is led by the World Food Programme (WFP) https://etcluster.org. It aims to establish and maintain vital communication networks and IT infrastructure necessary for effective disaster response. Telecommunications play a crucial role in disaster risk communication by facilitating information exchange before, during, and after disasters. Civil protection authorities can utilise telecommunications for DRR by setting up early warning systems, real-time communication channels, advanced monitoring systems, and data sharing networks. Additionally, they can establish two-way communication channels between citizens and authorities to collaboratively identify and mitigate potential risks, coordinating "all of society" DRR efforts.

TABLE 22: FOCUS ON CPAS: APPLYING THE FRAMEWORK TO DRR AROUND EMERGENCY COMMUNICATIONS

UNDERSTAND
Understanding the local context enables CPAs to make effective use of telecommunications in DRR because it enables tailored approaches that address local challenges and build on local strengths.

- **Preferred communication channels**: Understanding which communication channels (e.g., SMS, social media, radio) are most commonly used and trusted by local people enables CPAs to pick effective communication channels for different target groups.
- **Increase engagement**: Knowledge of the local people context helps CPAs deploy telecommunications in ways that are accessible, inclusive, and locally appropriate, which increases the likelihood of community engagement.
- **Increase relevance**: Understanding how local communities perceive risks and past experiences with disasters can help CPAs deploy telecommunications in a manner that is more compelling and actionable.
- **Target at risk groups**: Understanding the local context helps CPAs identify specific at-risk groups (e.g., elderly, disabled, isolated communities) and areas that might be more affected by disasters, ensuring that telecommunications are deployed in a manner that is targeted and inclusive.
- **Existing telecommunications and power infrastructure**: Understanding the condition of local telecommunications and power infrastructure helps CPAs in plan for redundancies, backups, and enhancements.
- **Historical patterns**: Awareness of local hazard histories, patterns, and seasonal variations helps CPAs plan the timing, nature, and urgency of disaster-related communications.
- **Alignment with local DRR policies**: Understanding local governance structures and policies helps CPAs ensure that telecommunications strategies are aligned with existing plans and regulations.
- **Coordination with local actors**: Understanding which other local actors have in-depth local knowledge and networks that could be deployed for DRR enables CPAs to deploy telecommunications in a more coordinated and effective manner.

- **Two-Way communication**: Understanding the local people context can help CPAs deploy two-way communication systems, facilitating a dialogue between CPAs and citizens.

SHARE

CPAs can use telecommunications to enable two-way information sharing (and sometimes even dialogue) with communities in various ways.

- **SMS and Text Messaging**: CPAs can send alerts and updates about the disaster situation, safety instructions, and available resources. They can set up a toll-free number, allowing communities to respond with their needs, concerns, and feedback.
- **Social Media Platforms**: CPAs can use platforms like Facebook, Twitter, and Instagram to share information and updates. They can engage with the community through comments, messages, and live Q&A sessions to understand their needs and provide immediate responses.
- **Mobile Applications**: CPAs can develop or use existing disaster management apps that provide information and allow users to report their status and needs.
- **Community Radio and TV Broadcasts**: CPAs can broadcast regular updates and information through local radio and TV stations. They can host live call-in shows where community members can ask questions, report issues, and get immediate responses.
- **Hotlines and Call Centres**: CPAs can establish hotlines that individuals can call for information, assistance, or to report their situation. They can train operators to provide support and relay information back to disaster managers for better situational awareness.
- **Online Forums and Community Groups**: CPAs can set up online forums or community groups where people can discuss their situations, share information, and seek assistance.
- **Geospatial Technology**: CPAs and community volunteers can use GIS and mapping tools to visualise reports from the community about hazards, vulnerabilities, impacts, and needs, and to inform DRM efforts. They can also collect crowdsourced data from individuals to update maps and improve situational awareness.
- **Satellite Communications**: During a disaster, CPAs can use satellite phones and internet to communicate with communities in remote or severely affected areas where traditional telecom infrastructure is damaged. They can use this to support coordination between disaster response teams and affected communities when terrestrial networks are unavailable.
- **Community Networks:** To reach people who are unable to use telecommunications for whatever reason, CPAs can engage with local leaders and community representatives who can use telecommunications to relay information and gather feedback from their communities. They can encourage peer-to-peer communication within the community to ensure information

reaches everyone, especially those who may not have direct access to telecom technologies.

RELATE

CPAs can use telecommunications to build constructive relationships between DRR stakeholders in several ways.

- **Regular Communication Channels**: CPAs can send regular updates, bulletins, and newsletters to keep stakeholders informed about ongoing DRR activities, upcoming events, and recent developments. They can connect citizen groups, civil society organisations, service providers, and other organisational DRR stakeholders using platforms like WhatsApp, Slack, or Microsoft Teams for two-way communication and the dissemination of information.
- **Stakeholder Engagement Platforms**: CPAs can create online engagement portals where stakeholders can participate in discussions, contribute to planning processes, and stay updated on DRR initiatives. These portals can include interactive dashboards that provide real-time updates, visualisations, and analytics on DRR activities, enabling stakeholders to stay informed and engaged.
- **Online Networking Events**: CPAs can host virtual conferences and symposiums that bring together DRR stakeholders to network and share knowledge, discussing problems and solutions. They can facilitate peer learning and exchange sessions where stakeholders can learn from each other's experiences and expertise.
- **Social Media and Online Communities**: CPAs can create and manage dedicated groups on social media platforms for DRR stakeholders to share insights, discuss challenges, and network. They can establish online forums or community boards where stakeholders can post queries, share experiences, and engage in discussions.

BUILD

CPAs can use telecommunications to support the co-creation of risk communication tools and strategies in several ways:

- **Community Engagement Platforms**: CPAs can create and use online platforms or mobile apps where community members can share their experiences, suggest ideas, and discuss risk communication strategies. These platforms can facilitate continuous dialogue and feedback loops.
- **Collaborative Platforms and Tools:** CPAs can use online platforms for collaborative project management with DRR stakeholders, task tracking, and information sharing. They can maintain shared repositories for easy access to important documents, maps, and recordings.
- **Virtual Meetings and Workshops**: CPAs can arrange regular virtual meetings using platforms such as Zoom, Microsoft Teams, or Google Meet to

discuss plans, share updates, and collaborate with DRR stakeholders on risk communications. Additionally, they can hold online training sessions to enhance skills and share good practices in co-creation and risk communications.

- **Feedback and Evaluation Mechanisms:** CPAs can set up online feedback systems for stakeholders to provide input on the ongoing co-creation projects they are involved in. In addition, CPAs can conduct regular surveys and polls via email or mobile apps to gather feedback from communities on the risk communication initiatives that have been rolled out.
- **Gamification and Interactive Tools**: CPAs can develop gamified applications and interactive tools to collect input and suggestions from community members about disaster risks and preparedness to include in risk communications.
- **Participatory GIS Mapping**: CPAs can engage community members in creating and updating GIS maps using mobile apps. This participatory approach ensures that local knowledge is incorporated into risk assessments and communication tools.
- **Interactive Voice Response** (IVR) Systems: CPAs can use IVR systems to allow community members to provide input and receive information via phone calls. IVR systems can be designed to offer multiple language options and cater to different literacy levels.
- **Mobile Messaging Services**: CPAs can establish dedicated messaging services (e.g., SMS alerts, WhatsApp groups) to send regular updates and receive community input.
- **Crowdsourcing Information**: CPAs can implement crowdsourcing initiatives where community members can report local hazards, share emergency information, and contribute to the development of risk maps and other communication tools.

8.1.2 APPLYING THE FRAMEWORK TO VOLUNTEERS AND EDUCATION

The UN's EM education cluster is led by UNICEF and Save the Children www.educationcluster.net/global-education-cluster. Volunteers in the education sector can play significant roles in disaster risk communications. For example, by integrating disaster risk reduction into school curricula, volunteers can help disseminate crucial information about potential hazards, emergency procedures, and risk mitigation strategies to students, staff, and the broader community (Tuladhar et al., 2013). This educational approach empowers students to become agents of change by bringing disaster risk awareness home, encouraging families to develop emergency plans, and fostering a culture of preparedness within communities (Wisner et al., 2018). The potential contribution of volunteers centres on the following key activities: community engagement, dissemination of information, feedback collection, training, and capacity building, supporting behavioural change, monitoring, and reporting. See Table 23 for how the RiskPACC framework can guide their efforts.

TABLE 23: FOCUS ON VOLUNTEERS: APPLYING THE FRAMEWORK TO DRR AROUND EDUCATION

UNDERSTAND

Understanding the local context, as it relates to education, enables volunteers to effectively carry out their roles in risk communication and community engagement.

- **Tailoring messages**: knowledge of local issues, challenges, and needs enables volunteers to support the development of risk communication messages that address specific local concerns and contexts, making the messages more relevant and impactful.
- **Anticipating barriers**: volunteers with knowledge of the local context can anticipate potential barriers to communication and address them proactively. This includes understanding local customs, beliefs, social norms, and perspectives on risk (and education) and making sure that risk communication messages engage with these views.
- **Identifying key actors**: Understanding the local social structure and education system helps volunteers identify and collaborate with key actors who can help foster dialogue around risk
- **Supporting at risk groups**: an understanding of the local context helps volunteers identify teachers and students who are especially at risk and support them in contributing to – and engaging with – risk communications in an education setting.
- **Responding to feedback**: Understanding local dynamics allows volunteers to interpret feedback accurately and make necessary adjustments to communication strategies, ensuring that they remain effective and responsive to local needs.

SHARE

Volunteers can play a key role in facilitating dialogue between professional disaster management authorities, teachers, and students.

- **Own concerns**: volunteers can engage in dialogue with CPAs and other societal stakeholders about factors that affect their own wellbeing and ability to volunteer, such as training, safety concerns, support and recognition, resources, feedback, and coordination with formal DRR initiatives.
- **Organise regular meetings**: volunteers can organise (school) meetings and forums where disaster management authorities, teachers and students can interact.
- **Organise workshops**: volunteers can facilitate interactive workshops, drills, and DRR training sessions in schools centred on dialogue between disaster management authorities, teachers, and students.
- **Facilitate discussions**: volunteers can act as mediators during these meetings and workshops to ensure that discussions remain productive and that all voices are heard. They can facilitate conflict resolution processes when disputes arise, ensuring that all parties feel heard and respected.
- **Create safe spaces for dialogue**: volunteers can establish online forums or in-person committees where teachers and students can safely discuss their concerns and experiences related to disaster preparedness and response – through facilitation (described above) or anonymity (online).

- **Plan / advocate for inclusion**: volunteers can ensure that meetings and workshops are inclusive and consider the specific needs and perspectives of the teachers and students who are especially at risk.
- **Act as a communication bridge**: volunteers can conduct surveys and focus group discussions in schools to gather feedback from teachers and students about their DRR needs, concerns, and suggestions - compile and present the collected feedback to disaster management authorities - and then report the authorities' comments back to the schools.
- **Create communication channels**: volunteers can establish clear and accessible communication channels for ongoing dialogue between authorities and the community. This could include hotlines, suggestion boxes, or community bulletin boards.

RELATE

- **Act as a trusted liaison**: volunteers who are regularly present at the schools and who are familiar with the local context are more likely to be trusted by teachers and students. This enables them to act as trusted liaisons between schools and disaster management authorities, building relationships based on mutual respect and understanding. Trust is essential for effective communication, especially in crisis situations where misinformation can spread rapidly.
- **Coordination with local school efforts**: volunteers can help ensure that risk communication initiatives coordinate their efforts with existing local school initiatives, ensuring that the work complements and strengthens ongoing community efforts rather than duplicating or undermining them.
- **Identify and support leaders**: volunteers can identify local school leaders who are respected and trusted by teachers and students and who can act as school representatives in two-way discussions with disaster management authorities.
- **Engage local school talent**: volunteers can encourage the involvement of local schoolteachers and students in wider DRR activities, leveraging their knowledge and skills.
- **Connect school-led initiatives**: volunteers can identify and support school-led DRR initiatives and projects, linking them up to wider DRR efforts and initiatives.
- **Inclusive engagement**: volunteers can ensure that teachers and students from all segments of the community, including at-risk groups, are included in discussions with disaster management authorities.

BUILD

- **Organise school workshops**: volunteers can conduct workshops where students and teachers can contribute ideas and content for risk communication materials.
- **Facilitate focus groups**: volunteers can use focus groups to gather detailed input from teachers and students belonging to different segments of the local community. This helps ensure that the materials address diverse perspectives and concerns.

- **Organise collaborative platforms**: volunteers can set up community boards or online platforms to facilitate collaborative creation of materials. Teachers, students, and disaster management professionals can contribute ideas, vote on designs, and provide feedback.
- **Training and capacity building**: volunteers can provide training for community members on how to create and disseminate risk communication materials. This could include workshops on basic design principles, messaging, and the use of digital tools.
- **Work with 'local champions'**: volunteers can identify and 'local champions' who can lead the creation and dissemination of risk communication materials within their schools.
- **Work with teachers**: volunteers can work with local teachers to develop DRR educational materials that are integrated into the school curriculum. Teachers can help adapt the materials to suit the learning levels and needs of students.
- **Support student projects**: volunteers can encourage students to participate in projects that create risk communication materials, such as posters, pamphlets, videos, and social media content. This not only educates the students but also enables them to be active participants in risk communication.
- **Leverage local culture**: volunteers can work with teachers and students to integrate local traditions, stories, symbols, and dialects into the communication materials to make them more relatable and impactful.
- **Organise testing and feedback**: volunteers can work with teachers and students to develop prototypes of the communication materials and test them with small groups from the community to gather feedback. They can then use the feedback to refine and improve the materials, ensuring they are clear, engaging, and effective.

8.1.3 APPLYING THE FRAMEWORK TO BUSINESS OWNERS AND LOGISTICS

Logistics is crucial during a disaster because it ensures the delivery of essential supplies, resources, and services to affected areas. The UN logistics cluster is led by the World Food Programme (WFP) https://logcluster.org/en Business owners can provide essential logistics services and support risk communications, for example, by actively participating in cross-sector collaborations within disaster management supply networks (Medel et al., 2020). This involvement goes beyond ad-hoc contributions and includes sharing information, resources, and expertise during all phases of disaster management. They can contribute their perceptions of risk (Han & Nigg, 2011) as well as their core business skills and competencies (Dobie et al., 2018). Their potential contribution regarding risk communications (for logistics) centres on the following key activities: sharing industry knowledge and insights; collaborating to create effective communication plans; facilitating information flow; and enhancing coordination and response efforts through active participation. See Table 24 for how the RiskPACC framework can guide their efforts.

TABLE 24: FOCUS ON BUSINESS OWNERS: APPLYING THE FRAMEWORK TO DRR AROUND LOGISTICS

UNDERSTAND

An understanding of the local context can significantly aid business owners in supporting logistics and risk communications.

- **Identifying key risks**: Knowledge of local hazards, vulnerabilities, and socio-political dynamics helps business owners in identifying potential risks and the implications for logistics.
- **Optimising logistics operations**: Knowledge of local infrastructure, routes, and regulations enables local business owners to help ensure efficient transportation and storage of aid supplies during a disaster.
- **Effective messaging**: Familiarity with local communities and preferred communication channels enables local business owners to work with disaster management organisations to create effective communication plans for emergencies – and facilitate dialogue with communicate stakeholders.

SHARE

Local business owners can facilitate dialogue between local communities and disaster management authorities, ensuring more effective logistics and risk management during crises, in the following ways:

- **Own concerns**: local business owners can engage in dialogue with CPAs and other societal stakeholders about factors that affect the resilience of their supply chain during a crisis, such as infrastructure restoration, resource sharing, communication channels, and economic Hosting meetings: local business owners can provide venues and resources for two-way discussions between community members and authorities about risk and logistics (e.g., a meeting room in an office building).
- **Providing tools and platforms**: local business owners can use their tools and platforms to facilitate the two-way sharing of critical information and updates about risk and logistics between disaster management authorities and citizens (e.g., a local radio station doing interactive shows).

RELATE

- **Acting as intermediaries**: Local business owners can leverage their established trust and networks within the community to link up communities and authorities and facilitate two-way dialogue about risk and logistics.
- **Provide resources**: local businesses can provide the resources needed to make DRR collaborations effective, such as transportation, warehousing, and a local workforce. By making collaborations effective, local businesses can strengthen relationships and improve attitudes

BUILD

- **Providing local insights**: Local business owners can contribute to the development of risk communications by offering detailed knowledge of local logistics, infrastructure, and potential risks to supply chains of critical infrastructures.
- **Resource sharing**: Local business owners can offer resources like meeting spaces, communication tools, and personnel to facilitate the development and dissemination of risk communications.
- **Hosting co-creation workshops**: Local business owners can host workshops with disaster management authorities and other societal stakeholders to co-create risk communications that address both logistical needs and community concerns.
- **Feedback mechanisms**: Local business owners can act as channels to gather and relay community feedback and concerns regarding risk communications to disaster management authorities.
- **Network utilisation**: Local business owners can leverage their established networks to ensure that risk communications reach intended audiences.

8.1.4 APPLYING THE FRAMEWORK TO WOMEN, GIRLS, AND PROTECTION

The UN's EM Protection Cluster is coordinated by the United Nations High Commissioner for Refugees (UNHCR) www.globalprotectioncluster.org/ Its primary goal is to ensure the safety and dignity of people affected by humanitarian crises. The cluster includes 'areas of responsibilities' that are attributed to UNFPA for gender-based violence (GBV), to UNICEF for child protection, to UNMAS for mine action, and to NRC and UN-Habitat for housing, land and property (HLP). The cluster includes preventing and responding to violence, exploitation, and abuse. Women and girls in disaster situations are at risk of gender-based violence, including 1) intimate partner violence, 2) physical violence (by someone other than an intimate partner), 3) sexual violence and rape (by someone other than an intimate partner) (Stark & Ager 2011). Men and boys also experience sexual violence in disaster settings as do gender minorities and these are increasingly included in programmes and interventions once solely focused on women. Protection also encompasses promoting and advocating for the rights of affected populations. This involves ensuring access to essential services, legal assistance, and upholding legal rights, for example in the areas of sexual and reproductive health (Radhakrishnan, et al., 2017). Women's groups can play a crucial role in this this area by leveraging their unique perspectives, networks, and expertise to enhance protection efforts for affected populations.

TABLE 25: FOCUS ON WOMEN AND GIRLS: APPLYING THE FRAMEWORK TO DRR AROUND PROTECTION

UNDERSTAND

- **Local knowledge**: Local women's groups often have deep knowledge of the community dynamics, local practices, and local power structures, enabling them to identify protection risks and needs more accurately.

- **Gender responsive plans**: Applying a gender analysis in the review of emergency plans can ensure there is sufficient coverage of core protection issues and that response actions will be fit for purpose e.g. emergency shelters provide safe refuge for abused women and children, separate from their abusers; reproductive health supplies and knowledge is available; consult widely when updating plans. Regular updating is important because localities are not static and the social-demographic constitution can change, resulting in changing needs.
- **Partnership rather than control**: Look for opportunities to support others' work in the community rather than importing externally designed interventions.
- **Don't forget the men and boys**: Although the focus may be on protection issues for women and girls, they live alongside men and boys who can be allies and enablers. Ensure men and boys are not excluded from information to explain what is being done and why in the interests of women's and girls' protection.

SHARE

- **Needs assessments**: Local women's groups can participate in or lead discussions to gather information on the protection risks and needs of women and girls, ensuring that discussions are gender-sensitive and inclusive.
- **Inclusive M&E**: Women's groups can be valuable partners in regular Monitoring and Evaluation of the plans and actions of CPAs.
- **Psychosocial support**: Local women's groups can provide women and girls who are affected by violence and trauma and who want to share their perspectives and expectations regarding protection with psychosocial support.

RELATE

- **Trust and Access**: Local women's groups can reach and gain the trust of women and girls who might be reluctant to speak with outsiders, ensuring that their voices and concerns are heard and addressed.
- **Safe Spaces**: Establishing women-friendly spaces where women and girls can participate in dialogue around protection and co-creation around risk communications related to protection.
- **Inclusion training**: CPAs can benefit from training in gender- and child-sensitive approaches to engagement activities of all kinds which encourage two-way communication.
- **Accessible opportunities**: women may want to contribute but be unable to because of constraints on their time and freedom of movement. Find out what can help women to be active in shaping plans and actions (e.g. flexible days or times for any meetings, or creches or other support for occupying children while women can contribute).

BUILD

- **Monitoring and evaluation**: Local women's groups can lead on the participatory monitoring of risk communications with women and girls, evaluating their impact on protection, and providing feedback to improve them and ensure they are effective and locally appropriate.
- **GBV programmes**: Local women's groups can lead on co-designing and implementing risk communications around GBV during disasters, including awareness campaigns, survivor support services, and referral mechanisms to health, legal, and social services.
- **Rights programmes**: Local women's groups can lead on co-designing and implementing risk communications centred on people's rights, available services, and how to access them, enabling individuals to seek protection and support during disasters.
- **Advocacy**: During co-design, local women's groups can be advocates for content that addresses women's and girls' rights at local, national, and international levels. They can also use the resulting risk communications to influence decision-makers and stakeholders.

8.1.5 APPLYING THE FRAMEWORK TO OLDER PEOPLE AND SHELTER

The UN's EM Shelter Cluster is coordinated by the United Nations High Commissioner for Refugees (UNHCR) and the International Federation of Red Cross and Red Crescent Societies (IFRC) www.sheltercluster.org. The primary goal of the UN Shelter Cluster is to ensure that people affected by disasters have access to safe, dignified, and appropriate shelter solutions. This involves providing temporary and permanent housing, ensuring that shelter interventions meet the basic needs of affected populations, and supporting their recovery and resilience.

Older people possess significant strengths that can greatly contribute to the design and construction of emergency shelters. Their extensive life experience and vital roles in community building and family resilience make them invaluable assets. Additionally, they often have in-depth knowledge of the local area and can enhance the skills of younger people through teaching and mentorship. Furthermore, Older People's Associations (OPAs) provide platforms for older adults to engage in shelter advocacy, learn new skills, and participate in community decision-making regarding shelters (www.helpage.org.uk).

However, some older people also face challenges related to shelter during disasters. Older people are described as 'frail' when their age intersects with serious physical, cognitive, economic, and psycho-social problems. Frail older people are at especially high risk in a disaster context (Fernandez et la., 2002). Shelters often lack accessibility features such as ramps, handrails, and elevators, making it difficult for older people with mobility issues to enter and move around. Furthermore, some older people have chronic health conditions that require medication, medical equipment, or regular care. Shelters may not be adequately equipped to address these needs. In addition, overcrowded shelters can lack private spaces, which can be particularly distressing

for older people who may need privacy for personal care or medical reasons. The unfamiliar environment of a shelter is a significant stress factor for older people who have dementia or depression (Holle et al., 2018). Also, older people are more susceptible to temperature extremes. Shelters that lack adequate heating or cooling can pose serious health risks. Furthermore, transportation services are often insufficient or inaccessible making it challenging for older people with mobility issues to reach evacuation points or shelters. Therefore, appropriate shelter planning is essential to reduce morbidity and mortality rates among the older population (Johnson et al., 2014).

The table below outlines how older people can contribute to *understanding, sharing, relating, and building* in the context of EM shelter.

TABLE 26: FOCUS ON OLDER PEOPLE: APPLYING THE FRAMEWORK TO DRR AROUND SHELTER

UNDERSTAND
• **Historical local knowledge**: older residents have often lived through previous disasters and can provide insights into historical data on past events, including frequencies, intensities, and impacts of past events. They also know areas that have historically been safer or less affected - and shelter related strategies that have worked or failed in previous disaster responses. • **Identifying vulnerable areas and populations**: older residents often have a deep familiarity with the local context, which allows them to identify high-risk zones, e.g., areas prone to flooding, landslides, or other hazards, and groups that may need special attention, such as people with disabilities, children, or isolated individuals. • **Knowledge of the people context**: older residents are often deeply familiar with (and custodians of) local customs and norms, which can be crucial in ensuring that shelter solutions are locally acceptable. Their knowledge can inform shelter designs that are well-suited to the local context. • **Knowledge of local resources**: Older residents' experience and knowledge can help identify and manage human and physical resources for building shelters. They can help identify local materials and skilled labour that can be quickly mobilised - and use their local knowledge to connect with suppliers, craftspeople, and volunteers.
SHARE
• **Supporting two-way communication:** Older people can facilitate two-way communication by leveraging their personal networks and trusted local channels to foster dialogue about shelter. These methods may be more effective in reaching groups that CPAs struggle to engage. • **Acting as liaisons and advocates:** Older people can serve as effective liaisons between CPAs and some groups that are difficult for CPAs to engage. They can communicate these groups' shelter needs, preferences, and

concerns, ensuring their perspectives are addressed in planning and decision-making processes.

RELATE

- **Leveraging community trust and respect**: Many older people hold positions of trust and respect within their communities. They can use their influence to start dialogues with community members to understand their needs and preferences regarding shelter solutions - and act as mediators to resolve conflicts or misunderstandings between CPAs and the local community.
- **Fostering community participation and trust**. Older people who are trusted and respected in their community can organise meetings and forums where community members and CPAs can discuss shelter needs and solutions. They can also use their personal connections to motivate community members to actively participate in planning and decision-making processes around shelter.

BUILD

- **Utilising Older People's Associations (OPAs)**: Through OPAs, older people can collectively advocate for specific shelter needs and preferences, ensuring that these are incorporated into risk communication and shelter planning.
- **Ensuring inclusivity and accessibility**. Older people can advocate for inclusive and accessible shelter solutions by ensuring that the needs of older adults and other vulnerablised groups are considered in shelter design and location, for example, by advocating for shelters that are accessible to people with disabilities and those with mobility issues.
- **Mentoring and educating**: Older adults can mentor younger community members and disaster professionals, providing guidance on effective communication techniques and the importance of inclusive shelter planning.
- **Developing tailored messages**: Collaborating with disaster professionals, older people can help create tailored risk communication messages around shelter that resonate with different segments of the population, particularly older people.
- **Supporting continuous improvement**. To ensure that shelter solutions remain effective, older people can assist in the participatory monitoring and evaluation of the effectiveness of shelter solutions - and provide feedback for improvement.

8.1.6 APPLYING THE FRAMEWORK TO CHILDREN AND EARLY RECOVERY

The main goal of the UN Early Recovery Cluster is to restore and improve the socio-economic conditions of communities affected by crises www.undp.org/geneva/global-cluster-early-recovery-gcer. The cluster is primarily coordinated by the United Nations Development Programme (UNDP). In the early recovery phase of an emergency, it works to provide quality learning opportunities and educational support for children, as well as psychosocial support, protection, health and nutrition support, community

engagement involving children and youth, and economic support for their caregivers. Emergencies can disrupt children's education – including when their schools are used as emergency shelters – which not only interrupts their learning but can break their contacts with friends and support networks. It is important to try and maintain support networks – which may include online ones – as far as possible. This may mean reducing geographical distance in the recovery period, providing sufficient safe travel options, and also providing internet and mobile phone access and charging. Education also includes opportunities for play, and this may be neglected in emergencies. In addition to supporting education continuity and social networks, there is also a role for children and youth to take active roles in all emergency phases. The Sendai Framework for Disaster Risk Reduction 2015-2030 includes many guides to turn words into action.

TABLE 27: FOCUS ON CHILDREN: APPLYING THE FRAMEWORK TO DRR AROUND EARLY RECOVERY

UNDERSTAND
• **Child sensitive risk maps:** CPAs can aim to include children in participatory risk mapping. • **Support education continuity:** Emergencies disrupt children's education and social networks so work with education and other partners to identify what CPAs can do to help, especially in the crisis period before formal education provision takes over. Plan for needs from early years/kindergarten up to high school. • **Active inclusion:** Understand what children may already be doing to take an active role in DRR and what CPAs can do to encourage age-appropriate activities they can be involved in locally. • **Learn from the experts:** Do not assume that children are just 'little adults' but understand the diversity of children's needs by identifying experts, local groups and local schools who can provide input into plans and interventions ahead of time.
SHARE
• **Recovery is for everyone:** Children are often very observant and can provide valuable insights into how the disaster impacted their lives and their community. This can help shape recovery efforts to better meet the needs of everyone. Often children and young people are left out of the discussions and planning in the recovery period. Plan for ways to effectively involve children and youth in this phase. • **2-way communication plans:** Effective risk communication with children and youth goes beyond simply telling them what to do. It's a two-way street that acknowledges their understanding and encourages their participation. Identify safe spaces and appropriate communication forms to communicate with children. Local schools, youth and sports clubs may be where children and youth feel able to share some of their thoughts, worries or ideas. Many of them

may be sharing online in social network spaces to which CPAs have little or no access and where rumour and misinformation may be circulating and so finding appropriate ways to provide information and hear directly from children and youth needs to be planned for early.

RELATE

- **Respect:** Treat children and youth with respect. Acknowledge their unique experiences, perspectives, and potential contributions to DRR efforts.
- **Recognize children and youth agency:** Empower them by highlighting their ability to learn, prepare, and contribute to a safer community.
- **Transparency in decision-making:** When possible, explain the reasoning behind DRR strategies and involve them in discussions (probably through vetted third parties) where appropriate. This fosters trust and a sense of ownership.

BUILD

- **Child/youth-responsive solutions:** Ensure there are meaningful (not token) opportunities for children and youth to build risk communication processes, tools and solutions in and for recovery.
- **Activities over lectures:** Lectures can be boring. Ensure learning about risk also includes opportunities for games, simulations, or role-playing exercises.
- **Visual aids:** Use pictures, videos, or age-appropriate infographics to explain risks and safety measures. Visuals are particularly helpful for younger audiences.

8.1.7 APPLYING THE FRAMEWORK TO PEOPLE WITH DISABILITIES AND LIVELIHOODS

The primary purpose of the UN Food Security Cluster is to support and coordinate efforts to restore and improve the livelihoods of people affected by crises https://fscluster.org. The cluster is typically coordinated by the Food and Agriculture Organization (FAO) and the United Nations Development Programme (UNDP). People with disabilities face various challenges during disasters that can affect their livelihoods. These challenges vary depending on the type of disability, which can be categorised into physical (e.g., mobility issues), sensory (e.g., blindness, deafness), cognitive (e.g., mental illness), and medical (e.g., dependence on life-support systems) (Alexander et al., 2011). The age-related disabilities of frail elderly people have been discussed above. People with disabilities often encounter difficulties accessing emergency shelters, evacuation routes, and relief services due to physical barriers. These barriers can also hinder their ability to reach their workplaces during a disaster. Disabilities can impede effective communication during emergencies, making it harder to receive timely warnings and instructions. Additionally, these

communication barriers can complicate remote work during a disaster, especially when normal communication channels are disrupted (e.g., due to damaged telecommunications infrastructure or power outages). Post-disaster, there may be systematic exclusion of people with disabilities from recovery and aid efforts. This systemic discrimination can make it harder for people with disabilities to return to work. Consequently, people with disabilities are often disproportionately affected by disasters due to reduced earning capacity and higher levels of poverty (Alexander et al., 2011).

Disasters frequently increase the marginalisation of people with disabilities. Emergency services and recovery efforts often fail to consider their specific needs, leading to further exclusion and economic hardship. Therefore, it is important to enable the agency of people with disabilities. Participatory approaches, such as focus group discussions and community mapping, can help involve them in DRR. In addition, associations of people with disabilities play a vital role in advocating for their needs and ensuring their inclusion in emergency preparedness, response plans, and efforts to support and restore livelihoods. The livelihood needs of people with disabilities in emergencies can be diverse, depending on the specific disability, pre-existing circumstances, and the nature of the disaster and its context.

TABLE 28: FOCUS ON PEOPLE WITH DISABILITIES: APPLYING THE FRAMEWORK TO DRR AROUND LIVELIHOODS

UNDERSTAND
• **Disability Disaggregated Data:** Collect and analyse data on the local disabled population, disaggregated by disability type, age, socioeconomic status, geographic location and livelihoods. This helps identify areas with higher concentrations of at-risk individuals. • **Needs Assessments:** Conduct regular needs assessments in partnership with Disabled People's Organizations (DPOs) and other disability advocacy groups. This provides firsthand information on the specific challenges faced by different disability groups in maintaining or creating livelihoods in and after emergencies. • **Community Mapping:** Collaborate with disabled people and their communities to map evacuation routes, shelters, and critical livelihood-related resources, identifying accessibility barriers and potential improvements.
SHARE
• **Safe Spaces for Dialogue:** Organise regular forums and meetings specifically for disabled people to discuss their concerns and experiences related to livelihoods and emergencies. Ensure these spaces are accessible and foster a sense of safety and confidentiality. • **Active Listening:** Disaster response personnel should actively listen to the needs and suggestions of disabled people without judgment or undue

interruption. This shows respect and creates an environment where open communication can flourish.

- **Feedback Mechanisms:** Develop clear and accessible feedback mechanisms for disabled people to provide feedback on existing policies and suggest improvements for future initiatives. This demonstrates a commitment to ongoing dialogue and improvement.

RELATE

- **Peer Support Networks:** Encourage the creation and support of peer support networks among disabled people. These networks can be a valuable space for sharing experiences, knowledge, and coping mechanisms related to livelihood issues.
- **Interactive training sessions:** Develop interactive training sessions where disabled people educate civil protection personnel on the specific challenges they face regarding livelihood security during emergencies. This raises awareness and builds empathy.
- **Collaborative planning committees:** Establish joint planning committees with representatives from Disabled People's Organizations (DPOs) to discuss livelihood risks and develop inclusive disaster preparedness strategies. This ensures the voices of disabled people are heard from the beginning.

BUILD

- **Focus Groups with Diverse Disabilities:** Conduct focus groups with people representing various disabilities to understand their preferred communication formats and information needs.
- **Co-create workshops:** Organize workshops specifically designed for CPAs and disabled people to discuss livelihood risks together. This fosters a two-way dialogue where both parties can contribute their perspectives and expectations.
- **Scenario planning exercises:** Conduct scenario planning exercises where both groups work together to simulate disaster situations and brainstorm solutions for livelihood risk management. This collaborative approach fosters a sense of shared ownership.

8.1.8 APPLYING THE FRAMEWORK TO IMMIGRANTS AND NUTRITION

The primary goal of the EM Nutrition Cluster is to coordinate and improve the effectiveness of nutrition interventions during crises www.nutritioncluster.net. This involves ensuring that populations affected by crises receive adequate and appropriate nutrition support. The Nutrition Cluster is coordinated by the United Nations Children's Fund (UNICEF). Immigrants can face various challenges related to nutrition during emergencies and disasters. They are a diverse group, and while some are quite resilient (e.g., wealthy expats), others may face social and economic exclusion (e.g., undocumented migrants), limiting their ability to meet their nutritional

needs. Immigrants may have cultural, philosophical, and/or religious dietary restrictions, which food assistance programmes and emergency relief may not accommodate. Emergency managers may not understand these dietary requirements and may perceive individuals as 'being picky' for rejecting certain foods, inadvertently forcing them to choose between eating an adequate diet or violating their moral codes. This can cause stress and lead to feelings of alienation. In addition, eating an inadequate diet can negatively impact immigrants' mental and physical wellbeing, even in the short term.

Immigrants may also be unfamiliar with the types of food provided in shelters or emergency rations and therefore unable to determine which foods fit their moral code and which ones don't. When foods are not labelled as 'halal' (Muslim), 'kosher' (Jewish), or 'vegetarian' (Hindu/Buddhist), or when ingredient lists are not in a language they can read, people may err on the side of caution and avoid them. This can lead to reduced food intake, negatively affecting their physical and mental health. Language barriers can further complicate communication of dietary needs and access to proper nutritional guidance. Additionally, concerns about immigration status may prevent some immigrants from drawing attention to themselves by asking questions about the food provided in shelters or emergency rations, even in a disaster situation. Well-connected, wealthy immigrants who are fluent in the local language are unlikely to be significantly affected by these issues as they are likely to be able to organise food that meets their dietary needs. However, less fortunate immigrants may face mental and physical health issues because they cannot access nutrition that is culturally, religiously, or philosophically appropriate. This situation is exacerbated if they are unfamiliar with the emergency management or healthcare systems in the host country, making it difficult to access services even when available to them. It should be noted, however, that some vulnerable immigrants may see improvements in their health and nutrition status in their new country, such as people fleeing war.

Because immigrants are very diverse in terms of age, gender, abilities, and other aspects, each with specific implications for health and nutrition (e.g., infant feeding, elder nutrition needs, lactating women's health and nutrition needs), it is important to engage directly with immigrants or their representatives to understand the breadth of issues faced in context.

TABLE 29: FOCUS ON IMMIGRANTS: APPLYING THE FRAMEWORK TO DRR AROUND HEALTH AND NUTRITION

UNDERSTAND
• **Disaggregated data:** Plan by seeking, or collecting, relevant disaggregated data on migrants' health and nutrition needs in emergencies from relevant representative organisations and agencies. • **Dietary restrictions:** Consult representatives from immigrant groups or civil society organisations that represent immigrant groups to understand their religious or ethical dietary restrictions and cultural customs related to food.

- **Pre-disaster Needs Assessments:** Integrate questions about dietary needs during pre-disaster needs assessments in immigrant communities. This helps identify potential vulnerabilities before emergencies strike.
- **Multilingual Data Collection Tools:** Develop multilingual data collection tools to ensure participation from diverse immigrant communities. Use culturally appropriate symbols and visuals where language barriers exist.

SHARE

- **Leverage immigrants' experiences in their new country:** CPAs can invite immigrants to share their experiences with food in their new country, including common challenges and misunderstandings they face. CPAs can then explain their own capabilities and limitations regarding nutrition in a disaster context. Together, they can discuss potential issues and explore solutions.
- **Leverage immigrants' experiences in their old country:** Immigrants from countries frequently facing disasters often have valuable hands-on experience in local disaster management, including organising adequate and culturally appropriate nutrition. CPAs can invite these individuals to share their experiences, and together they can explore the potential roles immigrant groups could play in managing nutrition during a disaster.

RELATE

- **Acting a Mediators:** Immigrants can play a crucial role in building relationships between CPAs and various community groups around the issue of nutrition during disasters by bridging cultural gaps, ensuring that CPAs understand the dietary needs and preferences of diverse communities.
- **Facilitating Communication:** Immigrants can help communicate essential information in multiple languages, increasing trust and cooperation.
- **Mobilising Community Resources:** Immigrants can organise and mobilise community resources, ensuring culturally appropriate food is available during emergencies.

BUILD

- **Helping tailor messages:** Immigrants can play a significant role in designing and rolling out communications about nutrition during disasters by helping tailor messages to be culturally sensitive and relevant, ensuring that dietary guidelines and food distribution plans respect cultural norms, religious beliefs, and ethical requirements.
- **Translating Information:** Immigrants can assist in translating materials into various languages spoken by the community, enhancing understanding and accessibility.
- **Engaging Community Leaders:** They can facilitate connections with community leaders who can disseminate information effectively.

- **Feedback and Improvement:** Immigrants can offer feedback on communication strategies, helping to refine and improve them based on community responses and needs.

8.1.9 APPLYING THE FRAMEWORK TO HARD-TO-REACH GROUPS, WATER, HYGIENE, AND SANITATION

The main goal of the UN WASH (Water, Sanitation, and Hygiene) cluster is to ensure the coordination and effective delivery of water, sanitation, and hygiene services during disasters. This involves providing clean water, hygiene and sanitation services, coordination, capacity building, and monitoring and evaluation. The cluster is primarily coordinated by UNICEF (United Nations Children's Fund) and IFRC (International Federation of Red Cross and Red Crescent Societies). Hard to reach populations face various challenges in WASH during a disaster. "Hard to reach" refer to groups of people who are difficult to access and support to due to various challenges. These challenges can be logistical, geographical, social, or political.

- **Geographical isolation** can make it hard to provide communities with WASH. These communities may live on small islands, in remote mountain villages, or in other areas behind natural barriers, such as rivers and forests. They may also be physically hard to reach during a disaster due to inadequate horizontal infrastructure, such as roads and bridges, which got damaged during the disaster. If their local WASH infrastructure, such as water and sewage, is inadequate and/or damaged, they may be at risk of waterborne diseases.
- **Conflict and political barriers** can make it hard to provide communities with WASH. Areas affected by civil unrest or political instability may be subject to government restrictions due to security concerns, limiting the ability of emergency managers to operate. Moreover, bureaucratic hurdles and a lack of cooperation from authorities can impede the provision of WASH.
- **Marginalised groups** may be overlooked or discriminated against during WASH. Depending on context, this can include people living with disabilities (including chronic conditions), the frail elderly, some immigrants, people who are homeless, people who are drug users, and other socially stigmatised groups. The needs and challenges these different groups face in the area of WASH are diverse.

The frail elderly, people with disabilities, and immigrants are discussed separately above. This section focuses on homeless people and injecting drug users.

Starting with injecting drug users, disasters often disrupt ongoing treatment and support services, such as access to opioid substitution therapy and harm reduction programmes. The stress of coping with the disaster, combined with addiction challenges, can negatively impact the mental health and well-being of injecting drug users. This stress may lead to riskier behaviours, including increased drug use and unsafe injection practices. Injecting drug users need clean, sterile water to prepare drugs safely, but such resources can be scarce during a disaster. Without access to clean facilities, unsafe injection practices may increase, heightening the risk of infections. Moreover, disruptions in the distribution of clean needles and other injection

equipment can lead to sharing and reuse, spreading bloodborne diseases like HIV and hepatitis.

Both injecting drug users and homeless people are often overlooked during relief efforts, resulting in insufficient support and resources to meet their needs, including in the area of WASH. Homeless individuals may end up in overcrowded emergency shelters with inadequate sanitation facilities. Additionally, publicly available water sources may become contaminated due to the disaster, putting homeless groups at risk for communicable diseases such as cholera, typhoid, and skin infections. Limited access to clean water and sanitation can also lead to food contamination, increasing their risk of foodborne illnesses.

To overcome these challenges, it is important to enable the agency of hard-to-reach groups. Participatory approaches, such as focus group discussions and community mapping, can help involve them in DRR. In addition, civil society organisations or community groups that represent hard to reach communities can play a vital role in advocating for their needs and ensuring their inclusion in emergency preparedness, response plans, and efforts to support WASH during disasters.

TABLE 30: FOCUS ON HARD-TO-REACH GROUPS: APPLYING THE FRAMEWORK TO DRR AROUND WASH

UNDERSTAND
• **Leverage Local Knowledge**: CPAs can tap into the local knowledge of geographically isolated communities using participatory techniques to identify potential WASH problems during disasters and brainstorm solutions. This can include focus group discussions, community mapping, and transect walks. • **Understand Political Barriers**: CPAs can conduct desk research and consult experts about political and bureaucratic barriers to WASH, including local conflict and security concerns (where relevant), so as to develop strategies to address them. • **Mapping Exercises:** CPAs can work with organisations already established with marginalised groups, such as homelessness charities, social services, and local harm reduction centres, to create maps that identify the locations where hard-to-reach groups are concentrated and what WASH facilities they currently rely on to plan WASH for these groups during disasters.
SHARE
• **Community Workshops and Meetings**: CPAs can help organise regular community workshops and meetings in geographically isolated areas to discuss WASH issues, share information, and collaboratively develop solutions. • **Policy Engagement:** CPAs can engage local and national governments in dialogue to discuss security related challenges and/or bureaucratic and political barriers that hinder the delivery of WASH services in certain areas during a disaster in order to identify barriers and explore solutions. • **Community Outreach:** CPAs can organise outreach programs in collaboration with trusted community leaders and organisations to provide information and,

where possible, material resources to encourage marginalised groups to share their needs.

RELATE

- **Leverage Existing Community Networks:** CPAs can identify and work with local organisations, cooperatives, and informal networks that already play a role in managing water and sanitation resources in geographically isolated communities to help people with WASH during disasters.
- **Build Local Connections**: Working in areas facing conflict or political barriers requires CPAs to build relationships of trust with authorities at all levels, especially with those at the local level based in the affected areas. By developing relationships with locally based organisations and residents they can support and facilitate the implementation of WASH remotely.
- **Leverage Peer Support Networks**: Peer support networks offer emotional and practical support for marginalised groups, such as people with lived experience of homelessness and/or drug use. CPAs can engage these networks to help people with WASH during disasters.

BUILD

- **Build Capacity**: CPAs can strengthen the capacity of hard-to-reach communities through training and education programs to enhance their ability to design and deliver communications related to WASH.
- **Advocacy Groups:** CPAs could engage advocacy groups who work on policy change and support for the rights of marginalised groups, such as homeless people and drug users, in the co-creation of disaster risk communications about WASH to make sure that the information is relevant and targeted to their needs.
- **Participatory Monitoring and Evaluation**: CPAs can involve hard to reach communities in monitoring and evaluating the effectiveness of WASH communications to ensure they are meeting local needs and to gather feedback for continuous improvement.

8.2 For the more experienced: using an intersectional perspective to apply the framework – the example of gender and health

As outlined in the previous section, people have strengths and capabilities in DRR that are linked to their social identities. In addition, they also face challenges, such as unequal treatment. To safeguard against discrimination based on identity, the EU recognises the following protected grounds: sex, racial/ethnic origin, religion/belief, disability, age, and sexual orientation. Also, many disaster management organisations are specifically mandated to target these so-called “vulnerable groups”. However, individuals never have just one social identity. Instead, they possess multiple social identities at the same time that jointly shape their lived experiences, such as “business owner *and* woman *and* volunteer *and* older person”. One or more of these can confer

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either advantage or disadvantage depending on other co-factors. Therefore, individual social identity groups are not uniform or monolithic; there is significant diversity within and between each group. People's perspectives, needs, capabilities, and constraints around DRR do not align neatly with social identities.

People's lived experiences are influenced by a wide range of socio-economic and geographical factors. These include education, income, occupation, employment, and housing. The composition of the local population, the built and natural environment, and levels of social connectedness also play a role. Specific geographic features, such as whether an area is urban, rural, or coastal, further impact experiences. Additionally, experiences of homelessness, criminalisation, or discrimination on other grounds, such as being a gypsy, can significantly affect individuals. It is therefore important to recognise that analysing risk perception and response through the lens of the social group can be highly reductionist. While it offers a general overview of the local context, it fails to capture its nuanced reality. Furthermore, focusing solely on social identities in DRR can inadvertently reinforce the notion that certain groups are inherently vulnerable while others are inherently resilient. This changes the focus from seeing vulnerability and resilience as part of the whole social system to seeing them as part of specific social groups. This can make it harder to see what individuals can and cannot do in DRR. Therefore, this section will discuss a more advanced and nuanced approach intended for readers with some experience in engaging with diverse communities around DRR.

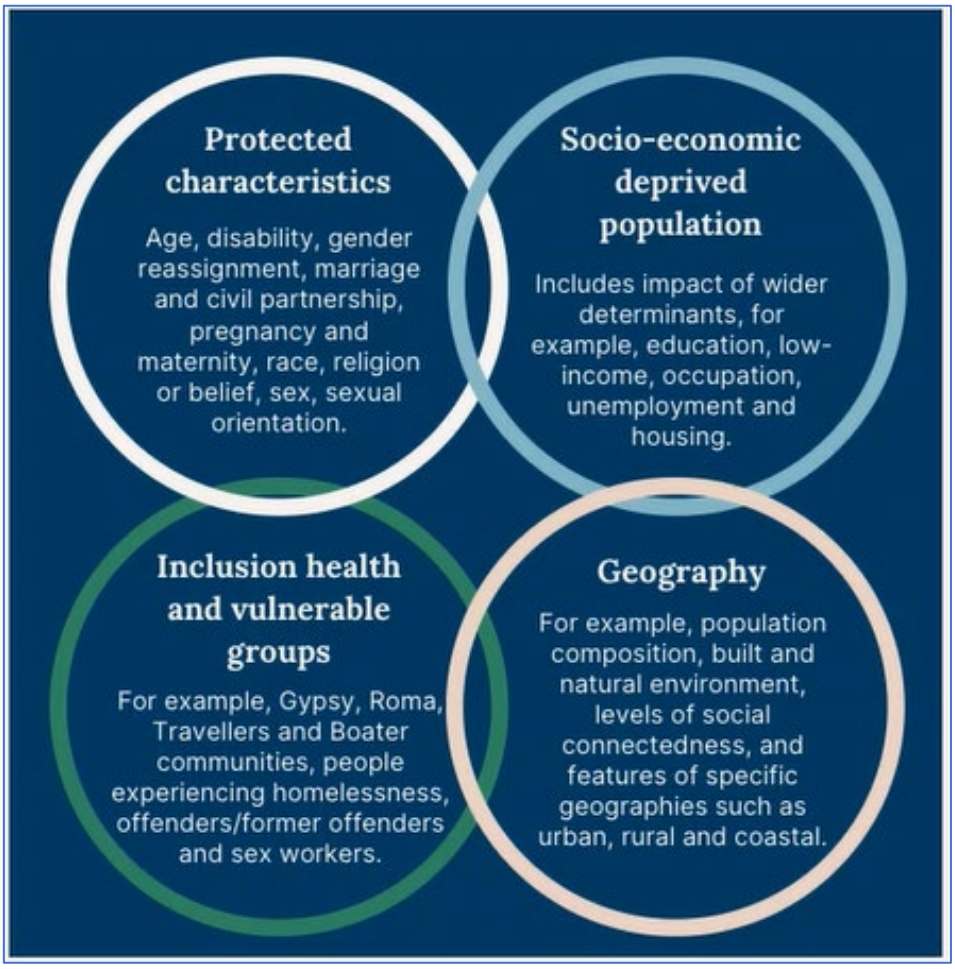

FIGURE 15: HOW PROTECTED CHARACTERISTICS INTERSECT WITH OTHER DIMENSIONS OF THE LOCAL PEOPLE CONTEXT AND THE LOCAL RISK CONTEXT

Source: NICE and health inequalities https://www.nice.org.uk/about/what-we-do/nice-and-health-inequalities (adapted from The King's Fund https://www.kingsfund.org.uk/insight-and-analysis/long-reads/what-are-health-inequalities)

What is intersectionality?

Intersectionality is a way to understand and study the complex mix of social identities that people have and what this means for DRR. It helps explain how different parts of a person's identity, like their race, gender, and social class, combine with a mix of other social, political, economic, cultural and environmental factors, to create unique experiences of both advantage and disadvantage in a disaster context. Intersectionality shows that these identity aspects interact and cannot be looked at separately from each other.

This section provides an example of how an intersectional approach can be used to apply the RiskPACC framework, focusing on gender and healthcare in disaster settings. It outlines how gender intersects with pregnancy, ethnicity, religion, and social class. It focuses specifically on how these factors affect access to emergency services, healthcare provision, mental health and psychosocial support. WHO

recognises that health outcomes have social determinants and that there is a social gradient (Wilkinson and Marmot 2003) in which those people lower on the social scale experience worse health and life expectancy compared to those higher up and that disadvantages are concentrated in the same people. The intersection of comorbidities, together with poor general socioeconomic conditions, and possible marginalisation because of social group identity can have significant impacts on a person's life chances and health outcomes – before, during and after disaster.

What is gender?

The previous section looks at the example of "women & girls". This section looks instead at "gender". In emergency management and disaster risk reduction, people often think of "gender" as just referring to women or the simple distinction between men and women. However, the term "gender" has expanded to include sexual orientation, gender identity, gender expression, and sex characteristics (SOGIESC)[20]. "Cisgender" refers to a person whose gender identity matches the sex they were assigned at birth. "Transgender" refers to a person whose gender identity differs from the sex they were assigned at birth. "Non-binary" refers to a gender identity that does not fit within the traditional categories of male or female. This broader understanding of gender shows the limitations of the old view. How a person's sex or gender is categorised can lead to very different outcomes and experiences during emergencies.

Although there is a lot of evidence showing that disasters affect people with different genders differently, it is important to consider these impacts within the broader context of social and political conditions, norms, and processes, as highlighted by intersectionality. Understanding the multifaceted nature of these impacts requires integrating gender perspectives into all aspects of disaster management. However, as Fordham points out,

> *'Gender mainstreaming and gender as a cross-cutting theme risk being everywhere and nowhere unless they are also supported by specific gender initiatives and a gendered' oversight of all activities' (Fordham 2012: 435).*

This underscores the need for targeted gender initiatives to ensure comprehensive and effective integration of gender considerations.

The EM context: healthcare

The goal of the UN Health Cluster https://healthcluster.who.int is to ensure a coordinated, effective, and efficient health response during crises. It aims to reduce morbidity and mortality, improve health outcomes, and protect human dignity by providing timely and appropriate health services to affected populations. The cluster is coordinated by the World Health Organization (WHO).

[20] Council of Europe 2024 Gender Matters https://www.coe.int/en/web/gender-matters/sex-and-gender; IOM 2021 SOGIESC Glossary of Terms. The International Organization for Migration (IOM) https://www.iom.int/resources/iom-sogiesc-glossary-terms.

8.2.1 HEALTHCARE PROVISION

Health services in disaster settings can be insensitive to people's biological and gender-based needs (Juram, 2012). It can significantly influence people's experiences with healthcare provision in disasters, impacting access to services, quality of care, and overall health outcomes. This section outlines how gender intersects with pregnancy, ethnicity, religion, and social class in shaping people's experiences.

- **Social Class**

In disaster situations, poor health outcomes are more prevalent in low-income areas due to pre-existing vulnerabilities, limited access to healthcare, and delayed response times. Healthcare facilities serving these communities are often under-resourced, and during disasters, they can become overwhelmed, leading to a reduced quality of care for all patients. Socio-economic status affects people's access to relief and recovery efforts (Horner & Downs, 2008). Individuals from low-income backgrounds may experience longer wait times and less attentive care compared to those from higher social classes. Poverty is associated with poor nutrition, inadequate housing, occupational hazards, limited access to healthcare, and chronic stress, leading to chronic health conditions. Disruptions in care during disasters can worsen these conditions. Additionally, health outcomes during disasters can vary significantly between genders. Men may be less likely to seek early medical intervention due to gender norms emphasising stoicism and self-reliance. Women may prioritise their family's wellbeing over their own due to gender norms emphasising selflessness and caregiving. Both behaviours can result in more severe health conditions by the time they receive care. Moreover, there can be gender-based biases in the healthcare system affecting how low-income individuals are treated. For example, low-income men might be perceived as less compliant or more likely to engage in risky behaviours, influencing the quality of care they receive. Women's symptoms are more likely to be attributed to stress or mental health issues rather than physical causes, leading to misdiagnosis or delayed diagnosis.

- **Ethnicity**

The intersection of gender and ethnicity affects people's experiences with healthcare in disaster settings in several ways. Ethnic minority groups tend to be more vulnerable to natural hazards (Davies et al., 2018). Health regulations, policies, and practices can unfairly disadvantage them. For instance, many Roma individuals lack necessary identification documents, which are often required to access healthcare services. Additionally, healthcare providers may hold implicit biases, leading to under-treatment of pain, misdiagnosis, and inadequate treatment for ethnic minority patients, ultimately contributing to poorer health outcomes. Gender norms also play a significant role. Women are often expected to be selfless and caring, which leads them to spend a considerable amount of time in unpaid caregiving roles. This limits their financial resources for healthcare. Conversely, gender norms dictate that men should be tough, self-reliant, and stoic, discouraging them from seeking medical help or showing vulnerability. This results in untreated conditions and worse health outcomes for men.

- **Religion**

Gender and religion intersect with healthcare provision in various ways, particularly in disaster contexts. Religion is a significant factor that influences all stages of disaster response (Erblich et al., 2020). Religious doctrines often define gender roles, impacting access to healthcare. For instance, some religions may have guidelines on modesty, dietary practices, and women's mobility, requiring female healthcare providers for women, and requiring male guardians' permission for women to seek healthcare. In disaster contexts, healthcare providers might not always be aware of or able to meet these requirements, which can create challenges for women in accessing healthcare.

- **Pregnancy**

The intersection of gender with pregnancy in healthcare provision affects a range of issues. Response systems are not always able to address the specific needs of pregnant and lactating women. (Giusti et al., 2020). Pregnancy is traditionally associated with cisgender women, but transgender men and non-binary individuals who have a uterus can also become pregnant. Many healthcare providers may lack training and awareness about the specific needs of transgender and non-binary pregnant individuals. Transgender and non-binary pregnant individuals may face significant stigma and discrimination in medical settings and society, leading to challenges in accessing appropriate and respectful healthcare, especially in a disaster context.

8.2.2 Access to Emergency Services

Gender plays a significant role in influencing access to emergency services in disaster contexts. These disparities are often attributed to factors such as childcare responsibilities, poverty, social networks, traditional roles, discrimination, and gender stratification (Fothergill, 1996). This section outlines how gender intersects with pregnancy, ethnicity, religion, and social class in shaping people's access.

- **Social Class**

People in low-income jobs often have limited resources for evacuation or immediate medical assistance. They may reside in vulnerable areas with poor public infrastructure and lack the financial means for private transportation, hindering their access to emergency services. Gender norms place additional burdens on these individuals. Men, seen as protectors and providers, may feel compelled to continue working despite the disaster, especially if they hold precarious or informal jobs. This can delay their access to emergency services and increase their exposure to hazards. Similarly, women, expected to be caregivers, may find themselves responsible for children, frail older people, or disabled family members. This responsibility can make it difficult for low-income women to arrange visits to emergency services.

- **Ethnicity**

Ethnic minority women face both racism and sexism, leading to pre-existing health disparities and chronic conditions that can worsen during a disaster, increasing their need for emergency care. However, they often struggle to access this care due to higher poverty rates, insecure housing, and lack of health insurance. They typically

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rely on community networks for support, but disasters can disrupt these networks, leaving them isolated and without critical assistance. This isolation can hinder their ability to access emergency services. Additionally, historical and ongoing discrimination fosters deep mistrust of authorities, including emergency services. Ethnic minority men often have more frequent interactions with law enforcement, which increases their mistrust and makes them hesitant to seek help from services they perceive as biased or untrustworthy. Moreover, some vulnerable men may not receive the health support they need because men are often perceived as more resilient and self-sufficient. This assumption can lead to inadequate assistance during disasters, even though they may still require significant support.

- **Religion**

In some religious contexts, women may need female emergency responders, which can delay treatment if such personnel are not available. Additionally, they may require that their religious attire and practices be respected during emergency care. Emergency responders may lack the necessary training to effectively communicate with and treat patients from diverse religious backgrounds. This can result in misunderstandings or insensitivity, leading to reluctance in seeking help. Women requiring emergency reproductive or maternal health care may encounter further barriers due to religious restrictions on certain medical procedures, including emergency contraception, abortion, and delivery practices.

- **Pregnancy**

Emergency service providers, including paramedics and emergency room staff, may lack training in gender diversity and the specific needs of transgender and non-binary pregnant individuals. They might not recognise a transgender man or non-binary person as pregnant due to their gender presentation, leading to delays or mismanagement of care. Furthermore, the fear of facing discrimination or being treated poorly may deter transgender and non-binary individuals from seeking emergency services when needed, potentially resulting in delayed care.

8.2.3 Mental Health and Psychosocial Support

Gender can significantly impact individuals' experiences with psychosocial support and mental health in disasters (Wen, 2018). This section outlines how gender intersects with pregnancy, ethnicity, religion, and social class in shaping people's experiences.

- **Social Class**

The mental health impacts of disasters are often more severe in low-income communities. The stress of managing disaster effects, combined with socio-economic strains and caregiving responsibilities, disproportionately affects low-income women, leading to higher rates of anxiety and depression. Limited access to mental health services during disasters further worsens the situation. For low-income men, economic stress, loss of livelihood, and the pressure to support their families and "be resilient" can lead to increased rates of depression and anxiety. Additionally, men may be less likely to seek mental health support due to stigma.

- **Ethnicity**

In some ethnic minority communities, mental health issues may be viewed as a weakness or personal failing. Traditional norms around masculinity often emphasize stoicism and self-reliance, making it difficult for ethnic minority men to admit they need help. Disasters can worsen mental health issues, and this reluctance to seek help can lead to deteriorating conditions. Ethnic minority women are at a higher risk of experiencing anxiety and depression during disasters due to the dual pressures of racism and sexism. In disaster situations, there is often a shortage of mental health providers trained to address the specific needs of ethnic minority women, including those related to trauma from discrimination or cultural stressors.

- **Religion**

Many religions have specific gender roles that influence how men and women perceive and seek mental health support. Men might avoid seeking help due to expectations of stoicism and self-reliance, while women might be expected to prioritise family needs over personal health. In many communities, religious institutions are the primary providers of psychosocial support. Women typically have more access to gender-sensitive mental health services within these settings, such as women's groups or counselling services focused on women's issues. However, men often lack equivalent resources, and services specifically for men may be less developed or entirely absent.

- **Pregnancy**

Pregnancy can exacerbate gender dysphoria in transgender men and non-binary individuals due to physical changes that are traditionally associated with femininity. Access to supportive communities and an affirming healthcare environment can be crucial for their mental health, but these are often lacking in a disaster context. Furthermore, there is likely to be a lack of mental health professionals who are trained in or sensitive to the specific needs of transgender and non-binary pregnant individuals.

8.2.4 APPLYING THE FRAMEWORK TO GENDER AND HEALTHCARE

The previous sections highlight the unique and complex experiences individuals face in disaster healthcare due to their intersecting social identities. An intersectional approach acknowledges these layered identities and incorporates participants' diverse perspectives and abilities, recognising their capacity to speak from multiple experiences simultaneously.

Using the RiskPACC framework in an intersectional manner means understanding that 1) all social groups are diverse and that 2) all individuals belong to multiple social groups. This means that one individual can speak to the experiences of various social groups. For example, if a person is both a business owner and a volunteer they can speak to both experiences. On the flipside, it also means that no single member of a social group can speak for all members of that group. For example, no single volunteer can speak for all volunteers and no single business owner can speak for all business owners.

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What this means in practical terms is that, when using the framework with a particular social group, it is important to try and engage a diverse range of people belonging to that social group. To identify and engage these individuals, it is helpful to collaborate with people who have strong local networks and are trusted by the community. Alternatively, working with an organisation that knows and can represent that groups' diverse perspectives, capacities, and constraints can be effective. Note that this approach carries the risk of inadvertently excluding isolated or marginalised sub-groups from the process as they are less likely to be (well) connected to the selected local representative or organisation. Therefore, it is important to cross-check the people who are included against demographic data to identify and remedy obvious gaps.

The fundamental point is that it is important to engage people in dialogue and get their perspectives on risk and risk communication. This helps disaster managers understand how different individuals within a social group perceive the main challenges they face and how they want their issues to be addressed. Talking to a diverse range of people within a social group enables disaster managers to assess if and how communications can be crafted to be suitable for the group as a whole or whether some messages need to be tailored to specific subgroups. It also helps them understand what language is more likely to be effective in risk communications directed at that group as a whole and what language to avoid. For example, if many individuals within a group are resistant to the term "climate change", it may be more effective to focus on the potential outcomes for that social group and use terms like "disruption" or "adaptation". Two-way dialogue makes it possible for disaster managers to understand the perspectives of different individuals within a social group and meet them where they are at. It also helps them develop messaging that allows people to take action. This can be done, for example, by focusing the discussion on what people care about, such as their loved ones, and the actions they can take to protect them. Changing minds through fear doesn't work; for some people it is more helpful to frame the discussion in terms of the positive change-makers that they can be within their communities. However, others may be put off if messages are framed this way. Again, by talking to a range of different people within a social group disaster managers can assess how to craft messages that land well with the majority, and if necessary, craft different messages for subgroups.

Social groups with low trust in authorities pose a particular challenge for disaster management. This includes groups that have historically been criminalised by the state, such as homeless communities, and groups that have been subject to prejudice by state employees and systemic forms of discrimination by the state. It is important to note that even well-intentioned emergency managers who aim to improve disaster management for all communities may have implicit biases. The language they use in dialogue with certain social groups may reflect these biases, further lowering trust within their relationships with those groups. Interactions between authorities and ordinary people are underpinned by an imbalance of power, especially if those people belong to a marginalised group. Describing communities as "disadvantaged" or "vulnerable" is an expression of this power imbalance. Additionally, these terms render

the skills and capabilities of these groups invisible and can, therefore, come across as disparaging, alienating some individuals within those groups.

To counter this, skilled facilitation that redresses power imbalances is important. Bringing in a facilitator from the relevant social group can help facilitate dialogue and build long-term constructive relationships. It is crucial that emergency managers avoid the pitfall of recruiting a facilitator who happens to agree with them but is not seen as credible by other members of the relevant social group. This person may be viewed as a "lock keeper": somebody who helps maintain the status quo but does not help improve things for their social group. It is vital to work with facilitators who are seen as credible by members of their social group. These facilitators will be able to explore with a diverse range of individuals from that social group how hazards have historically affected them, how they consequently see risk, and what their expectations are regarding disaster risk reduction going forward. These facilitators will also be able to draw out conflict within the social group – and between the group and emergency managers – to make it visible and resolve it. It is important to recognise (and reward) the labour performed by representatives and facilitators, both physical and emotional. Finally, when developing relationships around two-way dialogue with social groups using an intersectional approach, it is important to include the next generation to ensure that efforts will be carried forward.

The table below outlines how to apply the framework to gender and healthcare in disasters, using an intersectional approach.

TABLE 31: APPLYING THE FRAMEWORK USING AN INTERSECTIONAL APPROACH

UNDERSTAND

• **Understanding the local risk context**. The perspectives, capacities, and constraints of people with gender [x]
  ○ Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]
• **Understanding the local people context.** The perspectives, capacities, and constraints of people with gender [x]
  ○ Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]

SHARE

• **Facilitating dialogue**. The perspectives, capacities, and constraints of people with gender [x]
  ○ Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]
• **Acting as liaisons**. The perspectives, capacities, and constraints of people with gender [x]
  ○ Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x].

RELATE

- **Leveraging personal networks**. The perspectives, capacities, and constraints of people with gender [x]
    - Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]
- **Build community trust and networks**. The perspectives, capacities, and constraints of people with gender [x]
    - Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]

BUILD

- **Develop targeted messaging**. The perspectives, capacities, and constraints of people with gender [x]
    - Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]
- **Conduct advocacy**. The perspectives, capacities, and constraints of people with gender [x]
    - Other social identities of participants that affect their experience of healthcare in disasters: [x] [x] and [x]

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ANNEX 6: WREMO CASE STUDY

The following case study describes how local communities can take a leading role in DRR. It looks at the Community Emergency Hubs in Wellington, New Zealand: an initiative by the Wellington Region Emergency Management Office (WREMO). This case study is based on discussions with Dan Neely, emergency manager at WREMO as well as a visit to a Community Emergency Hub, facilitated by Amanda Scully, PhD researcher at Victoria University of Wellington.

INTRODUCTION

In the wake of the Christchurch earthquakes, the emergency management landscape in Wellington underwent a significant transformation. Recognising the need for a unified approach, all local councils in the region amalgamated to form a single emergency management office with a shared vision. This case study explores the journey and insights gained from integrating community resilience into emergency management practices in Wellington.

A UNIFIED VISION

The unification of emergency management in Wellington was driven by the need to build organisational capacity dedicated to community resilience. The then-new manager proposed an unprecedented approach, allocating a third of the organisation to community space. This strategic decision laid the foundation for a more proactive engagement with communities, moving beyond the traditional focus on response.

DEFINING COMMUNITY RESILIENCE

To effectively enhance community resilience, it was essential to first define what it entailed. The Wellington team identified key criteria for a resilient community:

- Connectedness: Communities working together towards shared goals.
- Empowerment: Individuals empowered to make a difference.
- Communication: Clear channels linking resources before, during, and after emergencies.
- Realistic Expectations: Understanding the levels of support available during events.
- Preparedness: Private, public, and community sectors ready to respond and recover quickly.
- Trust: Strong, trusting partnerships within the community.
- Disaster Risk Reduction: Ability to reduce disaster impacts.

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- Sense of Place: People feeling a sense of belonging and commitment to rebuild post-disaster.

These criteria provided a baseline for resilience goals but did not address the "how."

COMMUNITY ENGAGEMENT: A SHIFT IN POWER

The journey towards effective community engagement was influenced by a notable quote from Time magazine's Nancy Gibbs: "We are living through the most immense transfer of power from institutions to individuals in history." This shift highlighted the increasing capacity of communities to self-organise and respond to emergencies, often more swiftly and effectively than traditional structures.

CASE IN POINT: STUDENT VOLUNTEER ARMIES

A practical example of this shift was observed during the Christchurch earthquakes. Untrained students self-organised through Facebook to form volunteer armies, demonstrating the power of community-led initiatives.

LESSONS FROM THE PEACE CORPS

Dan Neely's experience as a Peace Corps volunteer in Honduras underscored the importance of engaging communities from the outset. An attempt to address a rubbish problem by providing bins failed because the community did not perceive it as a priority. This failure highlighted that understanding community needs and involving them in the solution is crucial for success.

IMPLEMENTING ASSET-BASED COMMUNITY DEVELOPMENT

The approach of asset-based community development focuses on leveraging existing community assets rather than imposing external solutions. This methodology led to the success of the "Donkey Polo" event during the community's mango festival in Honduras, showcasing how local resources and ideas can drive impactful initiatives.

STRATEGIES FOR BUILDING RESILIENT COMMUNITIES

Wellington's approach to building resilient communities includes:

- Listening First: Prioritising community voices and concerns.
- Supporting Local Ideas: Encouraging community-driven initiatives.
- Encouraging Ownership and Sustainability: Fostering a sense of responsibility within the community.
- Informing with Evidence: Using data to guide decision-making.

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- Fostering Cooperation and Trust: Building strong, collaborative relationships.
- These principles have been integrated into Wellington's strategies, resulting in remarkable diversity and community engagement.

TOOLS AND STRATEGIES FOR CAPACITY BUILDING

Wellington employs various tools to build community capacity, such as:

- Community Emergency Management Training: Educating residents on emergency preparedness.
- Private Sector Partnerships: Providing affordable emergency kits.
- Public Education Materials: Innovative resources to inform and engage the public.
- Social media: Leveraging platforms to connect and communicate with the community.

COMMUNITY EMERGENCY HUBS

A cornerstone of Wellington's community resilience strategy is the establishment of Community Emergency Hubs. These hubs serve as gathering points for community members to support each other during emergencies. Key features include:

- 128 Hubs Across the Region: Strategically located to ensure accessibility.
- Connection to EOC: Each hub is linked to the Emergency Operations Centre via radio and internet systems.
- Community-Driven: The hubs are managed by the community, not the official system.
- Hub Kits: Provision of job descriptions and basic tools to facilitate hub setup and operation.

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FIGURE 16: EXAMPLE OF A COMMUNITY EMERGENCY HUB: A SCHOOL

FIGURE 17: THE ROOM IN THE SCHOOL THAT WILL ACT AS THE HUB DURING A CRISIS

FIGURE 18: THE HUB WHEN THERE IS NO CRISIS: A SMALL ROOM IN THE SCHOOL THAT STORES THE HUB KIT

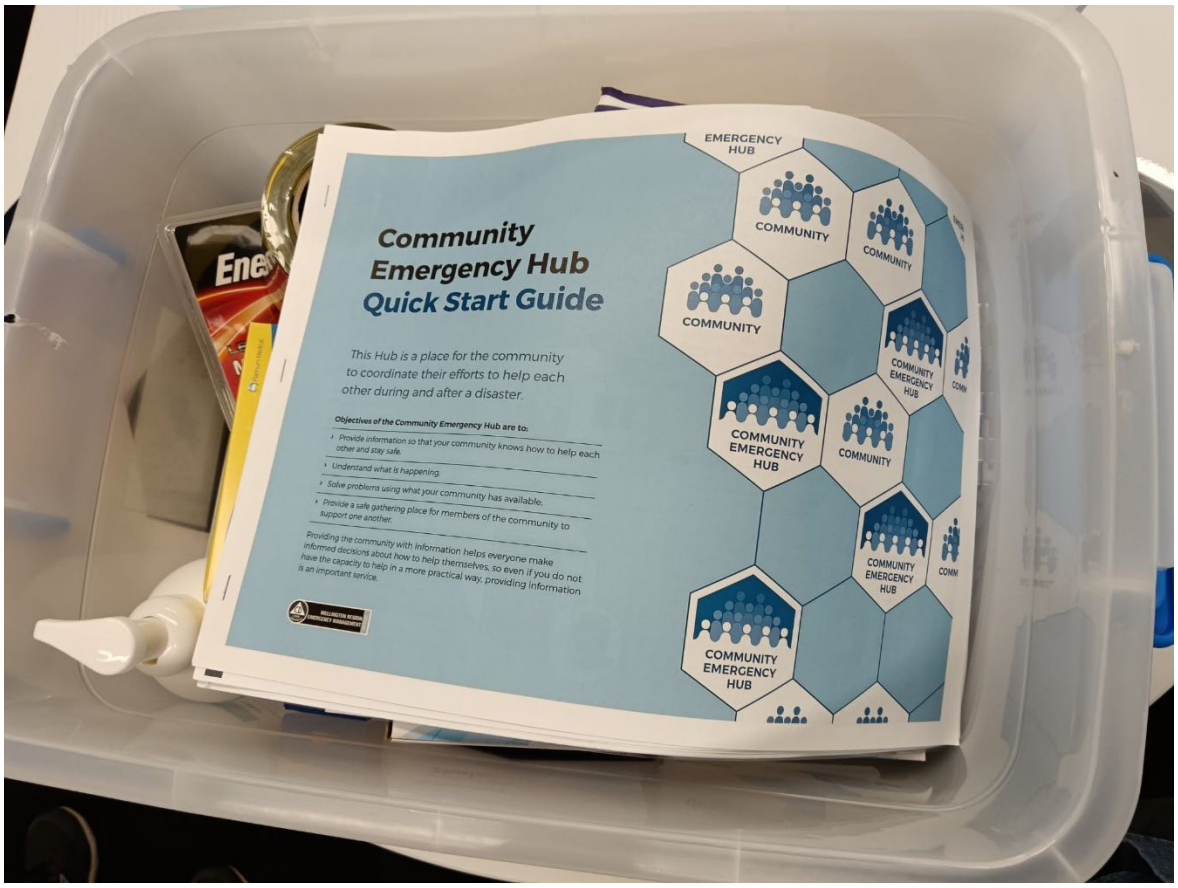

FIGURE 19: THE EMERGENCY HUB KIT: A BOX (OPENED)

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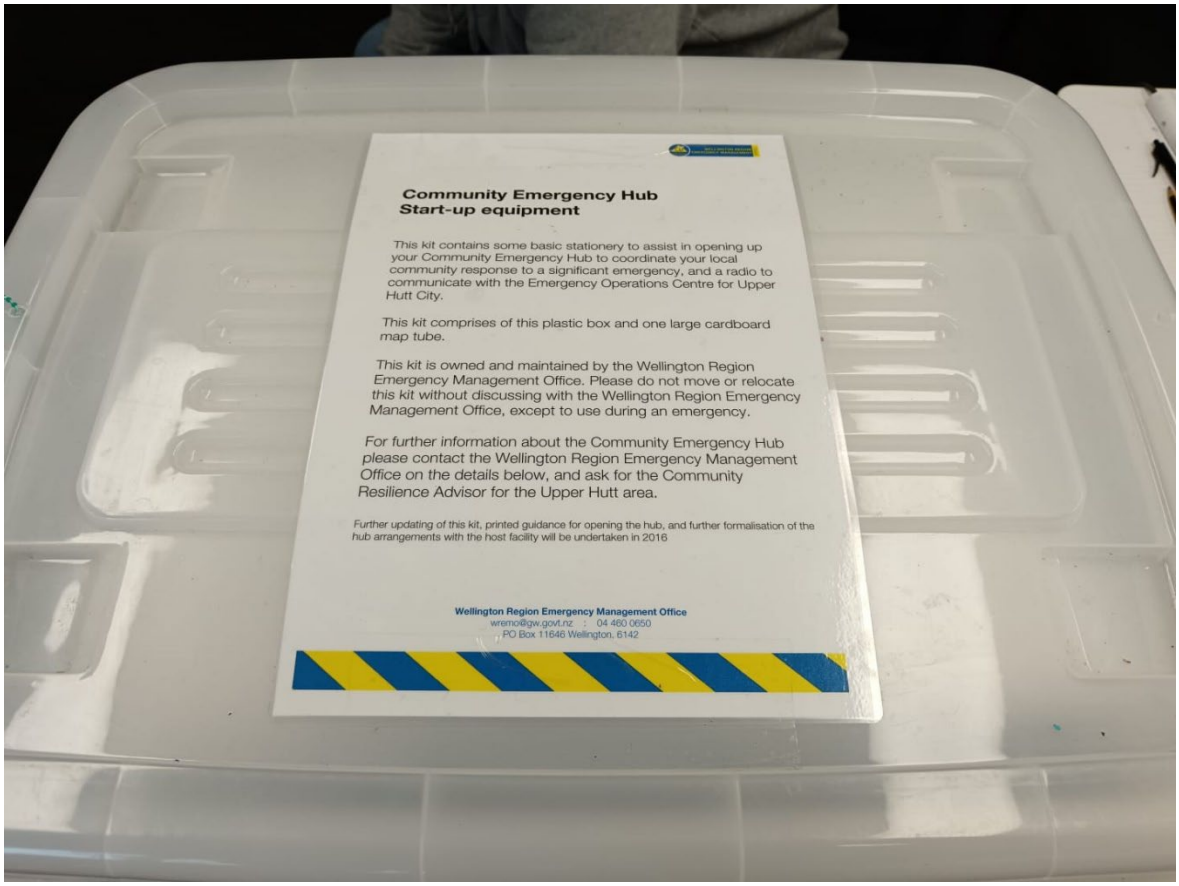

FIGURE 20: THE EMERGENCY HUB KIT (CLOSED)

FIGURE 21: THE CONTENT OF THE BOX

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COMMUNITY ENGAGEMENT AND EXERCISES

Engagement activities are designed to strengthen social capital and build relationships. Planning sessions are treated as social events, encouraging neighbours to collaborate on identifying resources and vulnerabilities and brainstorming solutions to challenges without government support.

IMPACT AND EXPANSION

The hub concept has successfully enabled communities to self-organise and respond more effectively, fostering higher engagement levels and stronger connections between official responses and the community. The model has been adopted in other parts of New Zealand and by cities in Australia, the United States, and Canada.

CONCLUSION

The journey of building community resilience in Wellington highlights the importance of proactive engagement, leveraging community assets, and fostering trust and cooperation. By continuing to learn and adapt, Wellington's emergency management practices serve as a model for integrating community resilience into emergency planning and response.

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FIGURE 22: THE RISKPACC CONSORTIUM