



The HuT

Co-developing DRR solutions with communities

Deliverable D2.4

DEVELOPED WITHIN
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1.1. Document history

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3. Summary

Global Network of Civil Society Organisations for Disaster Reduction (GNDR) is a network of 1,965 organisations in 131 countries. Our primary activities are advocating for risk-informed development and localisation, and capacity strengthening for civil society organisations.

Public Engagement is crucial to ensure locally-led and sustainable disaster risk reduction (DRR). GNDR conducted a global survey across its membership to understand the components of effective public engagement in DRR. The qualitative survey was conducted in English, Spanish and French where 104 respondents from 31 countries participated to give their perspectives on public engagement. The survey analysis was conducted by GNDR through thematic and qualitative analysis and consultation on survey findings was conducted with UCL as Work Package 2 lead.

Findings from the survey showed that there are **five key principles for effective public engagement** for DRR, they are: **people-centered approaches, inclusion, transparency, collaboration and continuous engagement**. The survey also reported **five key challenges for effective public engagement by the Government** for DRR, they are: **government's lack of resources** (71.43%), **lack of information and outreach** (70.48%), **weak policy framework** (53.33%), **low risk awareness** (48.57%) as well as **lack of political will and leadership** (31.43%). The majority of respondents identified the following **enabling factors for effective public engagement** for DRR: **good disaster risk governance** (60.95%), **collaboration and partnership** (25.71%) and **local leadership and partnership** (18.10%). Half of the respondents (50%) stated that **public consultations** such as: community meeting, town hall meeting, stakeholders meeting, focus group discussion (FGD) with community representatives, as **effective modes of public engagement** for DRR. Based on GNDR members' experiences, **reaching specific vulnerable populations**—such as women, refugees and persons with disabilities—**requires thoughtful, inclusive approaches tailored to their unique needs and challenges**. Some good practices by members are: use diverse communication formats, conduct targeted outreach sessions, collect disaggregated data and develop tailored approaches that address unique needs, circumstances and barriers to participation of vulnerable groups, and collaboration with grassroots organizations.

Technology can be used to complement traditional practices in DRR public engagement. **Technology has limitations to reach communities in remote areas or vulnerable groups that have low digital literacy or lack of infrastructures, but still plays a crucial role in enabling effective public engagement in disaster risk reduction since technology can facilitate communication between policy makers and communities at the frontline of disasters**. Top three ways of using technology for effective public engagement according to the respondents are for risk information and outreach (90.48%), community consultation and co-creation (74.29%) and public awareness and education (56.19%). Five case studies that facilitate public engagement are also presented in this report. Lastly, five **key recommendations** are provided for The HuT demonstrators for effective public engagement for DRR - **include all groups, strengthen local leadership and community ownership, inclusive information and outreach, use technology to facilitate co-creation and build partnership and collaboration for resource mobilisation**.



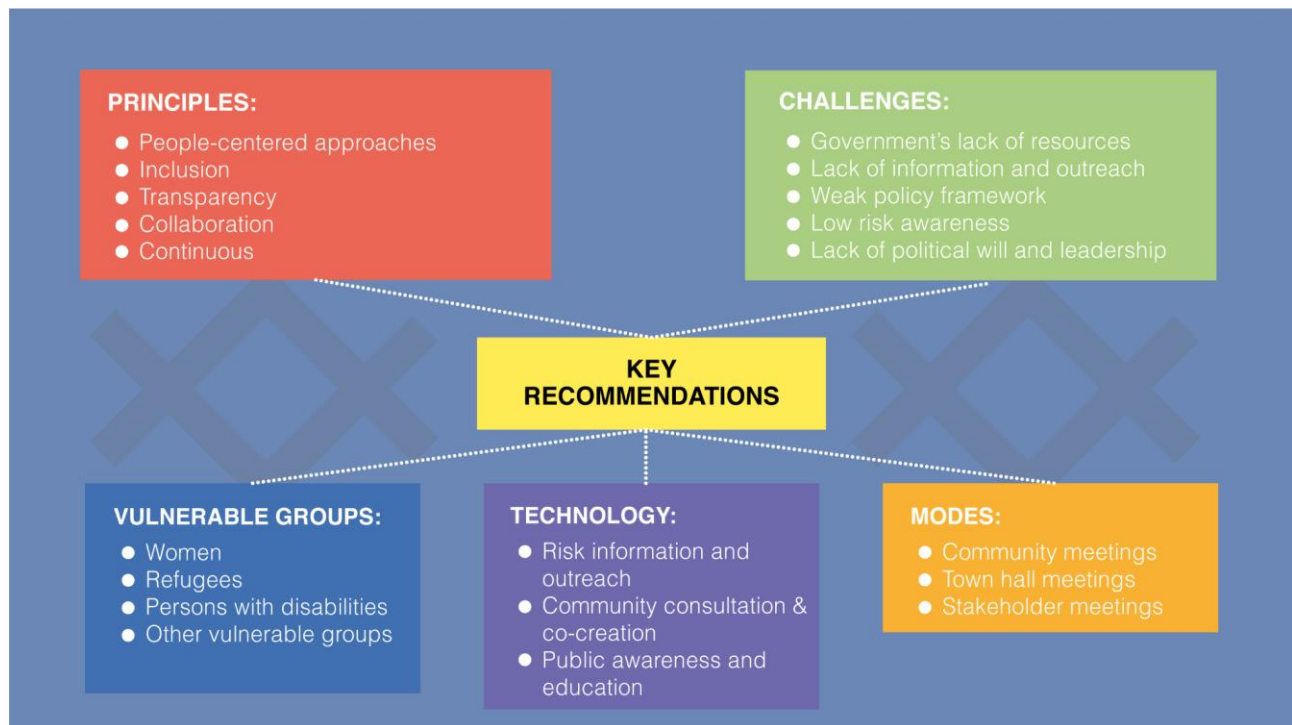


Figure 1: Summary of Survey Findings.

4. Introduction

GNDR is the largest international network of civil society organizations, with members from 131 countries. The network is dedicated to preventing hazards such as floods, droughts, earthquakes and infectious diseases from escalating into disasters that result in loss of lives, incomes, and assets. The overarching goal is to enhance the resilience of communities most at risk by ensuring they have the necessary resources, power, and capacities to adapt to potential hazards and mitigate risks.

In 2018, GNDR's Cookbook on Institutionalizing Sustainable CBDRM identified the following success factors in designing, planning and implementing sustainable Community Based Disaster Risk Management (CBDRM) measures:

1. **Permanence:** When CBDRM activities occur through the **mobilization of the community**, they continue even after significant external support has ended.
2. **Effectiveness:** CBDRM activities are successful when efforts are made to **build local capacities** to cope with disasters.
3. **Ownership:** Ensuring **community's buy-in** through coordination processes, government support and use of local knowledge is key for sustainable CBDRM.
4. **Adaptiveness:** CBDRM plans and activities need to be **flexible to respond to changes in the conditions**, this could refer to hazard patterns, emergence of new important actors, political or economic changes, etc.
5. **Inclusion:** CBDRM plans and activities need to **engage all societal groups**, to ensure that all perspectives (including those of minorities or marginalized groups) are taken into consideration.

Public Engagement is crucial to ensure disaster risk reduction (DRR) measures are people-centred, inclusive and effective. The Sendai Framework for Disaster Risk Reduction 2015-2030 explicitly mentioned that Governments should engage with relevant stakeholders, including women, children and youth, persons with disabilities, poor people, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards. It mentions that disaster risk reduction requires an all-of-society engagement, partnerships and collaborations. It also requires empowerment and inclusive, accessible and non-discriminatory participation, paying special attention to people disproportionately affected by disasters, especially the most marginalised groups of the communities. A gender, age, disability and cultural perspective should be integrated in all policies and practices, and women and youth leadership should be promoted. At national and local levels, Sendai Framework's Priority 2 'Strengthening disaster risk governance to manage disaster risk', encourages governments to assign, as appropriate, clear roles and tasks to community representatives within disaster risk management institutions, processes and decision-making through relevant legal frameworks, and undertake comprehensive public and community consultations during the development of such laws and regulations to support their implementation. Even though community-based approaches are recognised by national policies and practices, it lacks an enabling environment to facilitate the inclusion of community in the decision making processes. The communities at the frontline of disaster who have critical knowledge, experience and capacities to build resilience must be recognised as key decision makers.

In 2019, we published our *Views from the Frontline* global report based on the responses we received from the surveys with 118,000 survey respondents across people in 50 countries. Our research shows that 84% of local actors – civil society organizations, local governments and



community members – are not included in assessing threats, preparing policies and plans, and taking action to reduce threats. Communities are still being excluded from decision making and we are facing a significant information gap on risk at the local level and lack of local funding for disaster risk reduction. 62% of community members cannot easily access any information about the risks they face, or plans by their local government to build resilience. Moreover, communities at risk of disasters are not able to directly access funds to build their own resilience. The survey revealed that 8 out of 10 community members say they cannot access funds or that access is extremely limited.

Drawing from the extensive field experience of GNDR members, this report attempts to define what effective public engagement in DRR would look like, and unpacks the barriers and enabling factors of effective public engagement in DRR. The report also provides case studies from global south countries to provide better understanding of how effective public engagement in DRR is conducted. Recommendations are provided for The HuT project's demonstration sites on the key principles of public engagement in DRR which enables co-development of innovative DRR solutions for coping with climate extremes.



5. Methodology

GNDR conducted a global survey across its membership to understand comprehensively what it means to have "effective public engagement" in disaster risk reduction (DRR). This was a qualitative survey, in which 104 respondents from 31 countries participated to contribute to defining: what effective public engagement in DRR means; what are the barriers and enabling factors of public engagement in DRR; what is role of technology for effective public engagement in DRR; and, what are the best practices of effective public engagement in DRR? The survey was administered for GNDR members only and represents the perspectives of Civil Society Organisations (CSOs). Data was not collected from non-GNDR members, and other stakeholders which could be a potential limitation of the study.

The survey was conducted in English, Spanish and French with 104 respondents, of whom 47.1% were female and 52.9 % were male respondents and nearly half the respondents (49%) have more than 10 years of experience in DRR and more than half of respondents are (61.3%) senior level staff in their respective organisations.

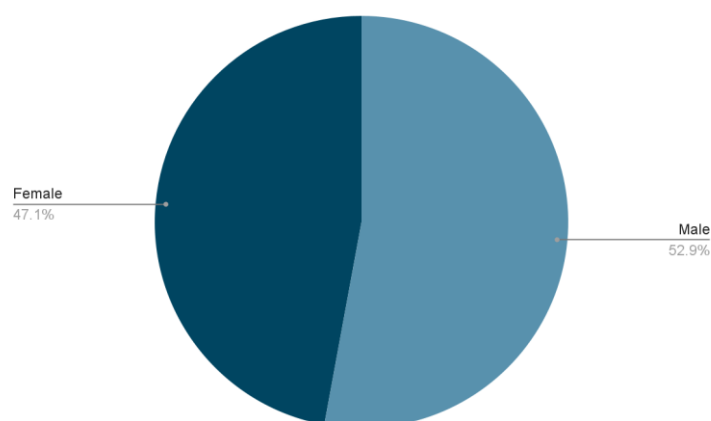


Figure 2: Number of Respondents by gender.

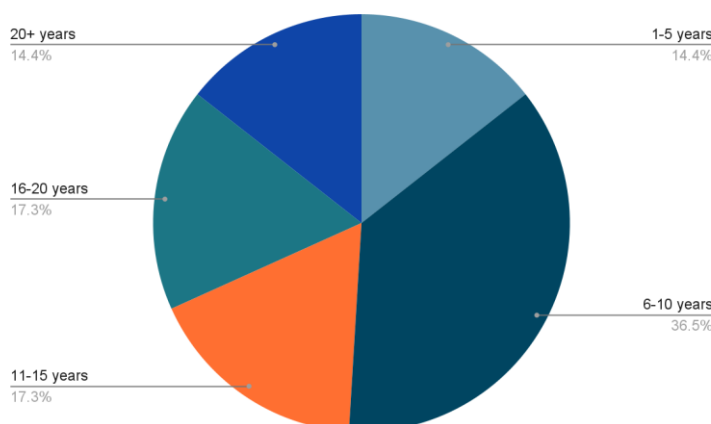


Figure 3: Respondents' years of experience in DRR.



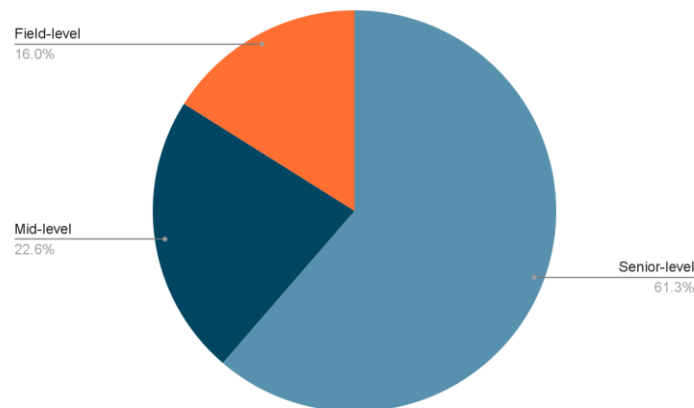


Figure 4: Respondents' organisational roles.

Table 1: Countries participation by Region.

Regions	Countries
Africa	Ethiopia, Ghana, Kenya, Nigeria, Somalia, South Sudan, Tanzania, Zimbabwe.
Asia Pacific	Bangladesh, Cambodia, India, Indonesia, Kiribati, Myanmar, New Zealand, Pakistan, Philippines, Solomon Islands, Sri Lanka, Tonga, Vietnam
Europe and Central Asia	Azerbaijan, Georgia, Kyrgyzstan, Italy, Moldova, United Kingdom
Americas and the Caribbean	Chile, Colombia, Peru
Arab States	Lebanon

6. Components of Effective Public Engagement in Disaster Risk Reduction

6.1. Defining effective public engagement by government in disaster risk reduction

In the survey, respondents are asked how they define effective public engagement in DRR by the Government. The following statements from GNDR members provide insight into how effective public engagement in DRR (by governments') can be defined:

Effective public engagement by the government for disaster risk reduction means genuinely connecting with people, listening to their concerns, and involving them in decision-making processes.

- Abdul-Mumin Yussif, Executive Director of United Force for Development International, Ghana.

Effective public engagement by the government for disaster risk reduction involves actively involving communities in planning, decision-making, and implementation of disaster preparedness strategies. It includes clear communication, raising awareness, promoting risk-reducing behaviors, and encouraging collaboration between government agencies, local organizations, and citizens.

- GNDR member.

"Actively involving citizens and communities in understanding and reducing the risks they are exposed to through transparent risk communication, participation in decision making, and wide collaboration among all sectors in the society"

- Anna Rita Gentile, AIVEM, Italy.

Effective public engagement by the government for disaster risk reduction (DRR) involves active, continuous, and meaningful involvement of individuals, communities, and organizations in disaster preparedness, response, and recovery efforts.

- Ngoc Phuoc Duong, Centre for community research and development, Vietnam.

Effective public engagement by the government for disaster risk reduction (DRR) means creating inclusive, transparent, and sustained partnerships with communities—especially those most vulnerable to disasters. It involves actively listening to local voices, co-designing risk reduction strategies with affected populations, and ensuring timely access to information, resources, and decision-making platforms. Engagement must be culturally responsive, equity-driven, and grounded in trust, enabling people not only to survive disasters, but to lead in building long-term resilience.

- Dr. Khurram Malik, Chief Executive Officer of Hope Worldwide-Pakistan, New Zealand.



Effective public engagement by the Government in disaster risk reduction means ensuring that all members of society - including marginalized, remote, and vulnerable groups — have equal access to information, participation, and decision-making related to disaster preparedness, prevention, and recovery.

- Murat Karypov, Executive Director of Bir Duino, Kyrgyzstan.

Effective public engagement by the government for disaster risk reduction means ensuring inclusive, participatory, and human right-based approaches that empower communities—especially women, youth, and marginalized groups. It involves transparent communication, accessible early warning systems, and sustained collaboration with civil society organizations. Engagement should be continuous, not just during emergencies, and rooted in local knowledge, enabling communities to lead resilience-building efforts that reflect their specific risks, needs, and capacities.

- Tanzia Anjum, Deputy Manager, Resilience and Climate Justice of ActionAid Bangladesh.

Based on the statements above, it can be concluded that effective public engagement for disaster risk reduction have the following key principles:

1. People-Centred

Governments must listen to the community, take into account the local context, culture, and address different needs of the community. They should empower communities to play an active role in DRR planning and implementation through public awareness, education, engagement, capacity building, decision making and leadership.

2. Inclusive

Community members that are most-at-risk, under-represented, marginalized, must be identified and supported to meaningfully participate in planning, decision making, monitoring and evaluation of disaster risk reduction initiatives. This includes addressing the barriers of participation by using participatory methods that are culturally acceptable, using local language, using different engagement channels, etc.

3. Transparent

Government mechanisms for public engagement must be transparent where the community can understand the process to participate and raise their concerns. This also includes clear and regular updates on key DRR information and resources available at the community level.

4. Collaborative

Governments must work together with the community, civil society and other stakeholders to be able to identify and address complex risks and build resilience. This includes co-creation of knowledge by combining traditional knowledge with scientific evidence.

5. Continuous process

Public engagement should not be a one time event, but a continuous process adopted throughout the cycle of disaster risk management. Over time, key moments for public engagement can be identified in a calendar year, to reiterate public awareness and capacity building.



It can be summarized that **effective public engagement in DRR is a people-centred, inclusive, transparent, collaborative and continuous process, through which government institutions actively involve communities in planning, decision making, implementation, monitoring and evaluation of DRR initiatives.**

6.2. Challenges for effective public engagement in disaster risk reduction

When asked on the challenges that faced for ensuring effective public engagement in disaster risk reduction, a majority of respondents reported lack resources (71.43%), lack of information and outreach (70.48%), weak political will and policy frameworks (53.33%), lack of risk awareness (48.57%) as key limiting factors.

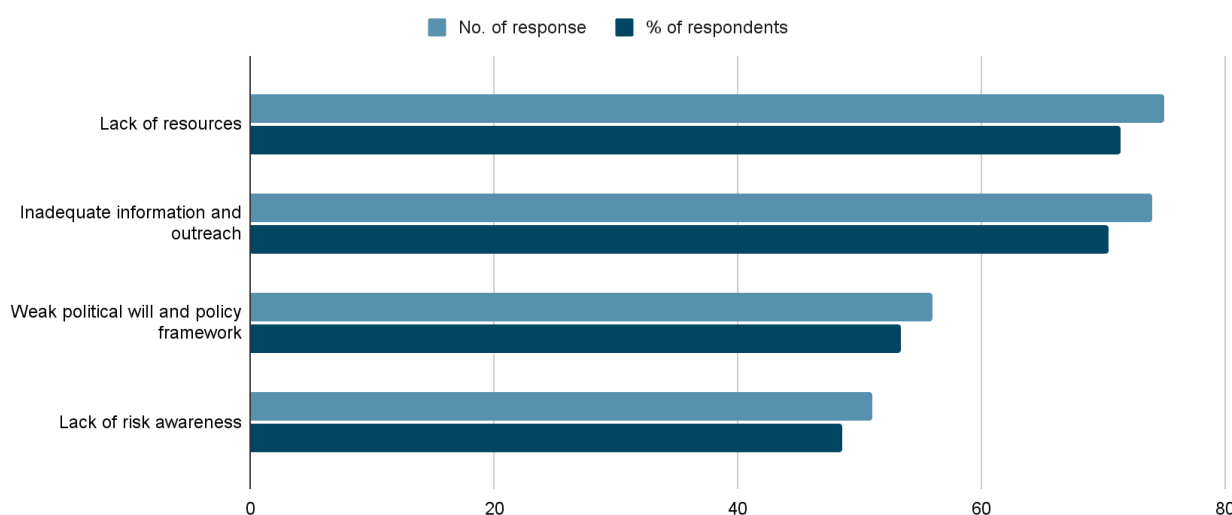


Figure 5: Key challenges in public engagement based on number of responses and percentage of respondents.

To further elaborate, GNDR members shared the following insights and examples of how the abovementioned limiting factors look like in reality.

Lack of Resources (Staff, Technical Expertise and Finance)

72.12% of respondents reported lack of resources, which includes lack of staff, lack of technical expertise and lack of funds or financial resources as a key factor limiting effective public engagement. DRR is not prioritized for funding because the government feels there are other more important programs to be funded, such as economic development or infrastructure projects. Lack of resources limit governments' capacities to engage marginalized groups or to sustain engagement efforts, to identify complex risks, implement policy, deliver services and identify sustainable solutions.

Inadequate resources such as limited financial and technical resources often stall the implementation of inclusive and participatory DRR strategies. In many cases, funds allocated for disaster risk reduction are insufficient or misdirected, affecting the quality and reach of public engagement initiatives.

- Gul Buledi, Executive Director of SHIFA Welfare Association, Pakistan.

Insufficient internal resources and dependence on international funding make DRR efforts vulnerable to the cessation or change of priorities by donors.

- Kabiné Doumbia, Appui Solidaire pour le Renforcement de l'Aide au Développement (ASRAD), Mali.

At AFRD, we also recognize that resource constraints present a significant challenge. Governments often face financial limitations that hinder their ability to implement long-term, sustainable DRR programs. For farmers, this often means limited access to the resources they need to implement disaster risk reduction strategies, such as access to agricultural insurance, drought-resistant seeds, or flood barriers. As an organization advocating for farmers' rights, we stress the importance of providing sufficient funding for programs that support rural communities in disaster-prone areas.

- Dr. Kakha Nadiradze, President of Association for Farmers Rights Defense (AFRD), Georgia.

Inadequate information and outreach

70.48% of respondents said inadequate information and communication is one of the key factors limiting effective public engagement. Use of complex and technical language and insufficient outreach can alienate certain segments of the population in accessing and understanding disaster information, particularly those with low literacy, low access to technology and infrastructure, those who communicate in a different language or have different and cultural contexts or those in remote/geographically challenged areas.

The challenges for effective public engagement by the Kenyan Government in disaster risk reduction include limited public awareness and education on disaster risks, which makes it difficult for communities to participate meaningfully. There's also a lack of inclusive platforms that consistently engage marginalized groups such as youth, women, persons with disabilities, and indigenous communities. In many cases, communication is top-down, with little room for dialogue or local input. Additionally, resource constraints, political interference, and fragmented coordination between government agencies often weaken the continuity and effectiveness of engagement efforts. Finally, trust deficits between communities and authorities can hinder collaboration, especially where past experiences have involved unfulfilled promises or exclusion. Some of the challenges are lack of cooperation by community members due maybe poor mobilization, language barrier or even lack of adequate resources to do the engagement.

- Claudius Mbuya, Executive Director of Cloudton Hamp Ventures Sustainability Group, Kenya.

One of the biggest challenges to effective public engagement in disaster risk reduction is that people often feel left out or unheard. Many communities have seen government officials show up only during or after a crisis, not before. So, they lose trust. There's also too much politics and talking, and not enough listening and doing. Information, when shared, can be too technical or



come too late—people need clear, honest communication in their own language and context. Often, those who are most affected—like women, youth, elders, people with disabilities, and people in rural or remote areas—aren't included in planning or decisions. Another challenge is that government systems can be slow and disconnected, making it hard to respond quickly or work hand in hand with communities. But people want to be involved. They have knowledge, solutions, and a deep care for their communities. What they need is for the government to meet them where they are—with humility, respect, and a willingness to walk together.

- Yonas Mamo, Executive Director of Align Africa, Ethiopia.

Differences in language, values, and social norms can make it difficult to reach all segments of the population. Inadequate or unclear communication can lead to misinformation, confusion, or lack of action among the public.

- GNDR member.

Weak Political Will and Policy Framework

DRR efforts involve multiple agencies who have varying mandates, as a result bureaucracy and complex coordination mechanisms between different government agencies at different levels lead to fragmented approaches to DRR. This fragmentation typically looks like government agencies preferring to work in silos (to navigate complex coordination mechanisms) which leads to confusion in addressing the specific needs of the communities and overlapping responsibilities and inefficient resource allocation - all of which undermining the effectiveness of public engagement initiatives. DRR efforts require a whole-of society approach and cross-sectoral collaboration is needed when prioritizing financing for DRR. Additionally, a lack of trust amongst community members for government representatives and policies/programmes, further undermine the effectiveness of public engagement measures.

In Indonesia, one of the main challenges for effective public engagement in disaster risk reduction (DRR) lies in the disconnect between policy and practice. While government agencies may have strong DRR frameworks and plans on paper, their implementation often falls short due to fragmented coordination, limited local capacity, and lack of sustained commitment. Public engagement efforts are frequently top-down, with limited inclusion of community voices during the planning stages. As a result, initiatives may not reflect local needs, contexts, or knowledge. In many cases, public consultations are treated as formalities rather than meaningful dialogues. Another critical challenge is weak inter-agency coordination and insufficient collaboration with media and civil society. This hinders the flow of accurate, timely information during both preparedness and response phases. Moreover, the role of the media is often underutilized in raising awareness and promoting early warning systems, especially in remote and high-risk areas.

Budget constraints, frequent turnover of government staff, and competing political priorities also affect continuity and consistency in public engagement. Additionally, trust in government institutions can be low, particularly in disaster-prone regions where previous interventions were perceived as ineffective or politically motivated. Finally, while digital platforms offer potential for wider outreach, gaps in digital literacy and internet access continue to exclude many vulnerable populations from participating fully in DRR efforts. To move from theory to effective practice, the



government must focus on building inclusive partnerships, strengthening local leadership, and investing in ongoing two-way communication with all stakeholders.

- Bebi Sutomo, Bangun Indonesia Foundation, Indonesia.

A lack of trust often stems from previous failures, leading to public skepticism about government initiatives. Reaching diverse populations requires customized strategies to effectively engage marginalized communities. Resource constraints, such as limited funding and personnel, can impede engagement efforts, while the dynamic nature of disasters necessitates evolving strategies to address changing circumstances.

- Tendai Gracious Moyo, Director of Lets Green the Future Trust, Zimbabwe.

The reliance on top-down approaches, insufficient political commitment, and the absence of sustained community engagement mechanisms reduce public trust and limit the effectiveness of disaster risk reduction efforts.

- Gul Buledi, Executive Director of SHIFA Welfare Association, Pakistan.

The bureaucratic attitude of the Government is like red tape violence, and undervaluing the people and creating a negative mindset among them.

- Habibur Rahman Talukder, Executive Director of Social Economic Development Society (SEDS), Bangladesh.

Barriers include unclear provision and mandates especially on leading the program, poor coordination, poor monitoring system and insufficient human resources.

- GNDR member.

Coordination between different levels of government and agencies can be complex, leading to fragmented or inconsistent efforts. People may be disengaged or resistant to participating due to lack of trust in authorities or disbelief that disasters will occur.

- GNDR member.

Lack of Risk Awareness

48.57% of respondents reported lack of risk awareness as one of the challenges in effective public engagement in DRR that limit their participation in disaster risk reduction measures.

Absence of local-level risk knowledge makes it difficult for communities to understand and participate in disaster preparedness efforts.

- Jay Anand, Director of Reduxcarb, India.

Effective public engagement for disaster risk reduction faces several challenges that can hinder its success: Limited Awareness and Understanding: Many communities lack awareness about disaster risks and the importance of preparedness, making it difficult for governments to engage



effectively. Cultural and Social Barriers: In diverse societies, cultural norms, traditions, and language differences can impede communication and inclusion in disaster risk strategies. Mistrust of Authorities: In regions where there is distrust toward the government, public engagement efforts can be met with skepticism, reducing participation. Inadequate Infrastructure: Poor communication systems, such as lack of access to internet or mobile networks in rural areas, limit the reach of disaster-related information.

- Abu Ibrahim, Executive Director of Centre for Communities Education and Youth Development, Ghana.

Many people may not fully understand the risks they face or the importance of preparedness.

- GNDR member, Lebanon.

6.3. Enabling factors in effective public engagement in disaster risk reduction

A majority of respondents identified the following enabling factors for effective public engagement in DRR: good disaster risk governance (60.95%), collaboration and partnership (25.71%) and local leadership and partnership (18.10%), see figure 6.

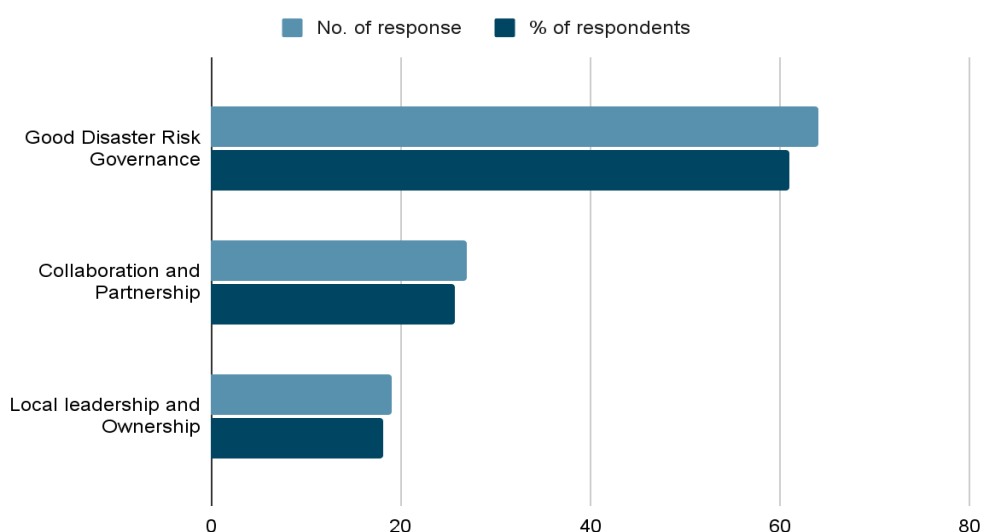


Figure 6: Key enabling factors in public engagement based on number of responses and percentage of respondents.

Good Disaster Risk Governance

UNDRR's The Sendai Framework Terminology on Disaster Risk Reduction defines disaster risk governance as "the system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy" (UNDRR, 2017). GNDR members participating in this survey reported good disaster risk governance as a key enabling factor in effective public engagement. This includes policy framework, transparency and accountability and institutional capacities (resources, coordination,

communication, technical expertise), and political will or commitments to prioritize and integrate DRR in development planning.

What facilitates effective public participation is that the government understands that governing is not about deciding for others, but with others. It is not enough to ‘open the door’, but to ask who can walk through it, under what conditions, with what voice, and whether that voice will really be heard and taken into account. Disaster risk reduction cannot remain a desktop policy: it has to be a collective, just and profoundly human process. And that is only possible if the state stops talking about people, and starts talking to them.

- Diana Carolina Caicedo Enriquez, Coordinator of Inter-Institutional Relations, Nariño Joven, Colombia.

Effective public participation by the government in disaster risk reduction is facilitated when there is sustained political will, committed institutional leadership and a culture of governance open to dialogue. It is key that local governments have sufficient technical and budgetary resources to convene and sustain participatory processes, and that there are active formal mechanisms, with diverse representation and inclusion of community actors. Access to clear and contextualised information, in local languages and accessible formats, as well as intersectoral articulation and the valorisation of traditional knowledge, are also essential. When these factors are combined, local ownership of risk management is strengthened and community resilience is enhanced through a territorial and preventive approach.

- GNDR member, Peru.

Local Leadership and Community Ownership

GNDR members reported that local leadership plays an important role in mobilising community and local resources to increase and sustain engagement. Informal leaders, such as: faith leaders, community elders, customary figures, well-respected/recognised individuals of the community can leverage their traditional knowledge and social capitals to mobilize communities to participate in DRR activities, like public awareness campaigns, trainings, mock-drills, planning meetings, etc. Additionally, informal leaders can inspire and promote community-led initiatives or local innovative solutions in DRR. When the governments engage informal leaders, it can also help build community trust in the Government.

Decentralized governance can be an advantage, when local governments are empowered and equipped to take the lead in context-specific DRR actions. Capacity building—both within government institutions and at the community level—is essential. This includes training for government staff on participatory methods, and support for local organizations that work directly with vulnerable groups. Local leadership and trusted community figures play a crucial role in mobilizing people and ensuring that DRR messages are understood and acted upon. Building trust through transparency and consistent follow-through on DRR commitments strengthens public participation. Enabling regular feedback loops—where community concerns are genuinely heard and addressed—also enhances engagement. This includes providing platforms where citizens can report risks or suggest improvements. Lastly, when DRR efforts are aligned with local priorities—such as livelihoods, health, and education—people are more likely to engage actively, seeing the relevance to their daily lives.

- Bebi Sutomo, Bangun Indonesia Foundation, Indonesia.



Effective leadership, both formal and informal, plays a pivotal role in mobilizing community action and sustaining engagement. Leaders with strong social networks can facilitate coordination, disseminate information, and motivate collective action, thereby strengthening community resilience.

- Grace Akumu Ojuang, Founder/Program Development Manager of Winam Chania Dada Community Based Organisation (CHADALA), Kenya.

When people feel informed, included, and empowered, they don't just wait for help — they become part of the solution. Governments that recognize this and actively invest in people-centered engagement will be better prepared to reduce disaster risks and build lasting resilience.

- Abdul-Mumin Yussif, Executive Director of United Force for Development International, Ghana.

Collaboration and Partnership

While governments have the primary responsibility for reducing disaster risk, non-state stakeholders play important roles as enablers in providing support in disaster risk reduction. GNDR members have identified the following key stakeholders for DRR: civil society organisations, community based organisations including youth groups, women groups, organisations of people with disabilities, academic institutions, private sectors, and media. Collaboration and partnership strengthen cross-sectoral synergies, break silos to enhance collaboration between different sectors and agencies, reduce duplication of effort and close the gaps between science-policy-practice. It also increases ownership to address complex risks by incorporating different perspectives and pooling resources and expertise for comprehensive and sustainable solutions.

Accessible information, sustained engagement platforms, and collaboration with civil society organizations further ensure that at-risk communities are not only informed but actively involved in shaping and implementing risk reduction strategies.

- Dr. Khurram Malik, Chief Executive Officer of Hope Worldwide-Pakistan, New Zealand.

The creation of operational 'ecosystems' that combine science-policy and civil society actors is key to ensure adequate implementation of DRR in the territory."

- Edison Andrés Calderón Parra, Red Ecuatoriana de Cambio Climático, Ecuador.

6.4. Effective modes of public engagement in disaster risk reduction

GNDR members were asked to choose one most effective mode of public engagement in disaster risk reduction. From the options provided, half of the respondents (59.6%) chose public consultations such as community meeting, town hall meeting, stakeholders meeting and focus group discussions with community representatives, as effective modes of public engagement in DRR. Policy dialogues (11.5%), (9.6%), creative communication and campaigns (8.7%), knowledge co-creation (8.7%) and use of social media (2.9%) ranked thereafter. Only 8.7% of respondents chose 'others', which they clarified to be: a combination of the aforementioned-



models, integration in school curriculum and collaboration with key stakeholders such as local CSOs, grassroots organisations, and private sectors.

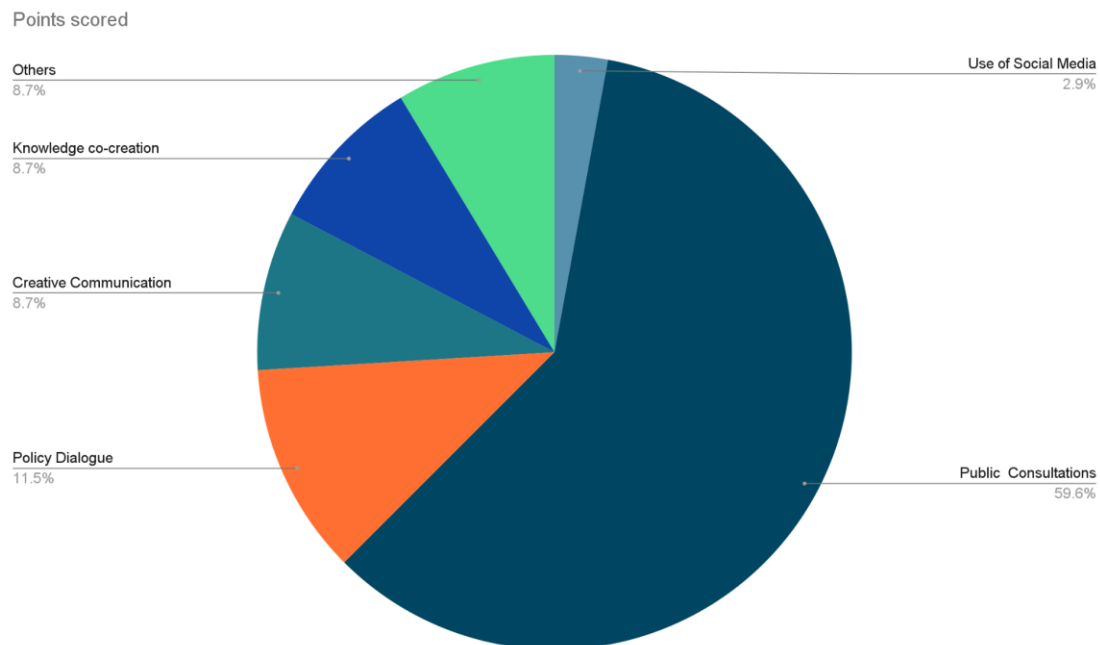


Figure 7: Effective modes of public engagement by Government in Disaster Risk Reduction.

7. Inclusive Engagement of Vulnerable Groups in Disaster Risk Reduction

Based on GNDR members' experiences, reaching specific vulnerable populations—such as women, refugees, and persons with disabilities—requires thoughtful, inclusive approaches tailored to their unique needs and challenges. Some good practices by members are listed below:

1. **Use diverse communication formats**, like sign language, braille, translated materials, simplified language, visual tools (infographics, videos), storytelling, easy-to-understand texts and formats, **tailored for specific needs and audiences to ensure everyone can access information**.
2. **Conduct targeted outreach sessions in places frequently accessed by these populations**, such as refugee camps, community centers, health clinics, and schools. **Facilitate community forums, focus groups and workshops that are safe, culturally sensitive and inclusive**, where women, refugees and people from other vulnerable groups feel empowered to speak, contribute and co-create solutions.
3. **Collect disaggregated data and develop tailored approaches that address people's unique needs, circumstances and barriers to participation**. It is important to build trust by **engaging directly with the vulnerable group and listening to their specific concerns**. This may include provision of reasonable accommodation; support skill development and empowerment activities that strengthen their resilience — for example, training women as local DRR facilitators or equipping young people with tools for emergency communication and response; and creating safe spaces—such as women-only focus groups or disability-inclusive forums which encourage open dialogue and authentic engagement.
4. **Collaboration with organisations who already have an established relationships of trust** with people from vulnerable groups such as grassroots organizations, women's groups, organizations of persons with disabilities (OPDs) and community leaders ensures better outreach and representation in planning and decision-making processes as they have the capacity to deliver information in local language while respecting existing norms, values and traditions.



8. Roles of Technology in Public Engagement in Disaster Risk Reduction

The survey asked for examples of how technology can be used to enable effective public engagement in DRR. Overall, the respondents felt that technology plays a crucial role in enabling effective public engagement as it facilitates communication between government representatives and communities at the frontline of disaster. Top three usages of technology for effective public engagement to be identified were for risk information and outreach (90.48%), community consultation and accountability (74.29%) and public awareness and education (56.19%).

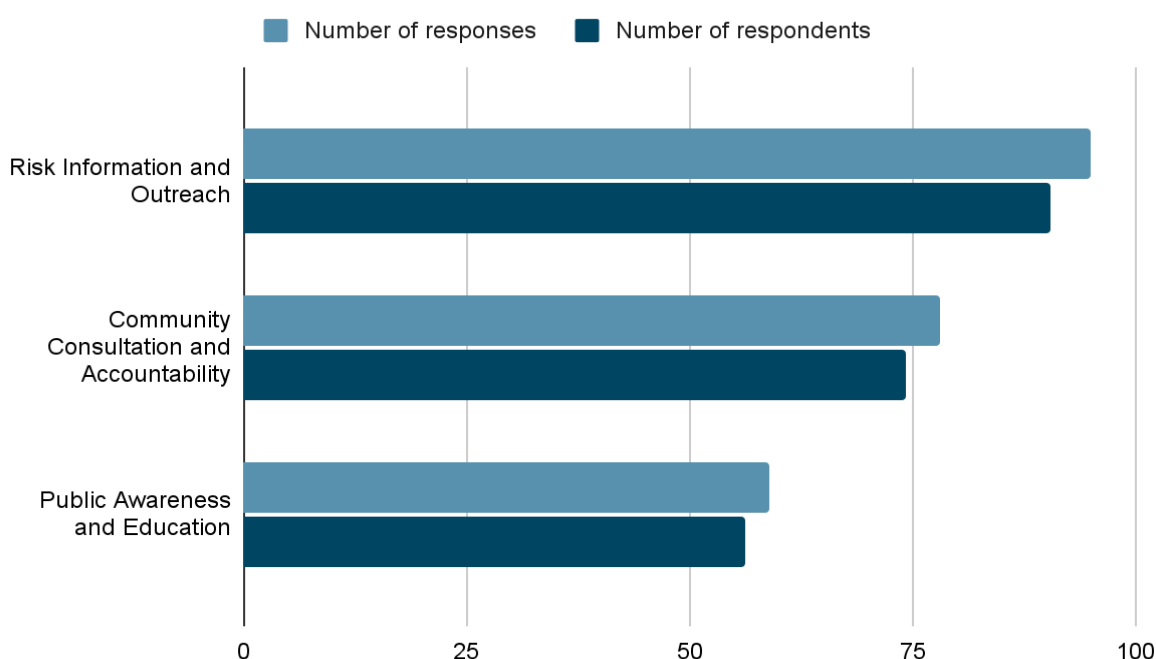


Figure 8: Three ways of using technology for effective public engagement by government in disaster risk reduction.

Below are some examples provided by members on how technology can be leveraged to enhance public engagement in DRR.

Risk Information and Outreach

GNDR members reported that technology can enhance speed and outreach in risk information and provide interactive and engaging risk communication. Mobile technology (SMS, Call Centers, WhatsApp, Telegram, Chatbot, Interactive Voice Response Systems), social media platforms (Facebook, Instagram, TikTok) and web portals can be used to share early warnings, risk information, advisory messages and disaster updates to the community in real time where communities can also provide feedback, ask questions or comment on the information provided by the government.

Technology can be a powerful tool to promote more effective public participation in disaster risk management. For example, the use of participatory digital platforms allows for the collection of community input on risk maps or early warnings through mobile phones, even in rural areas with limited connectivity. In urban contexts, social networks have been useful for disseminating preventive information, convening drills and visualising local needs in real time. There are also positive experiences with mobile community reporting applications, where citizens report landslides, floods or specific needs during an emergency. Likewise, community SMS or WhatsApp messaging systems have proven to be effective in transmitting alerts and coordinating rapid actions with local actors, especially in areas that do not have traditional means. Finally, more advanced technologies such as the use of drones for participatory mapping or interactive platforms for co-creation of emergency plans are starting to be implemented with good results when combined with inclusive methodologies.

- GNDR member.

Community Consultation and Accountability

GNDR members shared that technology offers powerful tools to enhance community participation and accountability. Through online meeting platforms (Zoom, Microsoft Teams) the government can conduct virtual community consultations while formulating policies, planning programmes and undertaking budgeting exercises to complement physical meetings. There are also practices where Governments can use online survey tools (Kobo toolbox, google-form, survey monkey, etc) for assessment or feedback mechanism. Technology such as drones, GIS, open street maps have been used for co-creation of risk mapping and monitoring, creating interactive maps and visualising risk; and communities have contributed to data collection and verification.

Technology can greatly improve public engagement in Benin by facilitating citizen participation and transparency. For example, digital platforms allow citizens to follow government projects and give their opinions in real time. Mobile applications and social networks are powerful tools for raising awareness and mobilising citizens, while early warning systems and digital mapping help plan targeted responses to disasters. Artificial intelligence can analyse large amounts of data to provide valuable insights, and open data portals promote transparency and accountability. Together, these technologies create an inclusive and resilient environment, strengthening communities' ability to cope with disaster risk."

- Mauro Barbosa Machado, Engineer of Engesus - Engenharia Sustentavel, Brazil.

We cannot ignore the advances that the world is making in the development of technology, but the most important thing has been the ease with which people in the most remote corners of the planet are making use of it, this gives us to understand that technology is already the most effective vehicle to promote participation and even to reduce mobility costs, while reaching the greatest number of people.

- Roberto Tecú, Project Design and Monitoring of Fundación para el Desarrollo Integral (FUDI), Guatemala.

Public Awareness and Education

GNDR members also mentioned various benefits of technology in public awareness and education. Social media posts, radio and TV broadcasts, as well as webinars are the common platform for



public awareness and education. Immersive training using serious gaming, virtual reality (VR), augmented reality (AR), or mixed reality (MR) create engaging, realistic, fun learning environments, especially for youth. E-learning or web-based learning platforms allow self-paced learning. Podcasts, e-petitions and other social media campaigns can be used for campaigns and influence public policy.

Aside from highlighting the roles of technology that can enhance community outreach, participation, accountability and awareness, GNDR members also emphasize the importance of people-centered approaches in using technology in public engagement.

Technology made it possible to reduce physical distance, but more importantly, it built bridges of trust and representation. Technology, when placed at the service of life and territory, can be a powerful ally in democratising participation. But for it to be truly effective - and not a simulation of inclusion - it must be used with purpose, with a differential approach and with a genuine listening to communities. Technology alone does not transform. But in the hands of organised communities, accompanied by sensitive governments and emancipatory pedagogical processes, it can open up unthinkable paths. The important thing is that it does not replace the voice of the people, but amplifies it. That it does not standardise, but respects diversity. That it does not exclude those who do not have connectivity, but seeks other ways of being present. Ultimately, the best technology for participation remains the human encounter mediated by trust. Everything else - apps, maps, platforms - makes sense only if it starts from that principle.

- Diana Carolina Caicedo Enriquez, Coordinator of Inter-Institutional Relations, Nariño Joven, Colombia.



9. Case studies

Below are five case studies from GNDR members in different countries and regions which are presented to give an overview of how public engagement is applied in disaster risk reduction activities.

9.1. Participatory Rainfall Monitoring in Peru, South America

Heavy rainfall, floods and debris flows in the Rímac river watershed are recurring events that impact people in vulnerable situations. These impacts are compounded by rapid land use change and climate change. Forecasting these events is difficult because rainfall varies considerably – even from community to community – and remote communities lack weather information. These factors limit the potential benefits of EWS in the watershed; weak or inaccurate forecasts do not allow communities to make informed, real-time decisions to reduce their risk. Because forecasts are weak, there is a lot of distrust from the public towards the National Weather Service and its communications and alerts.

Participatory Rain Monitoring Network of the Rímac River Basin (The MOP Rímac Network) is formed by around 60 volunteers from 11 districts across the Rímac watershed who receive ongoing training by Peru's National Weather Service and Practical Action's specialists on meteorology, tools for measuring weather, and key concepts around climate change. These volunteers use low-cost manual rain gauges to measure the level of precipitation twice a day and record it systematically. They also register and share information on weather observations and key weather information using photos and videos through a group chat on WhatsApp, which contributes to the effectiveness of the local Early Warning System and promotes inter-community communication and collaboration. This group chat is also used to disseminate official weather warnings and alerts emitted by the National Weather Service and other key communications. It is a space for validating facts during emergencies to avoid misinformation.

The WhatsApp chat information is processed and contrasted with data from the different monitoring stations of the Rímac EWS: the official stations of the National Weather Service, the monitoring stations installed by the Korean cooperation agency KOICA, and the monitoring stations based on free technologies installed by Practical Action (NGO). This information helps build a detailed data record, providing a better understanding of the link between precipitation and the triggering of flash floods. With timely and reliable information local authorities can make informed decisions to activate response protocols that prevent the loss of lives and resources.

The MOP Rímac Network also strengthens social and human capital by promoting community collaboration, connecting people from different parts of the watershed facing common challenges through an alternative communication channel. EWS is improved through community buy-in and ownership of EWS, thus increasing trust in the data. Collaboration between communities and technical- scientific entities through dialogue and shared learning resulted not only in strengthening risk awareness and warning, but also increasing community's confidence in external organisations and strengthening governance as communities become key stakeholders in disaster risk management at local level and participate in decision-making.



9.2. Disability-Inclusive DRR in Pakistan, South Asia

In the wake of the 2022 devastating floods in Sindh, persons with disabilities (PWDs) were disproportionately affected. Many were left without access to shelters, health services, food, and mobility support. Recognizing this, NDF Pakistan initiated a community-based, disability-inclusive DRR initiative in Nawabshah District, with the aim of enhancing preparedness, accessibility, and participation of persons with disabilities in disaster response. Community-Based Vulnerability Mapping was conducted which identified 400+ households with persons with disabilities. Special needs were also identified, such as: accessible shelters, assistive devices, medicine, and psychosocial support. Inclusive training sessions were conducted on DRR, First Aid & Emergency Preparedness for persons with disabilities, women caregivers, disabled-people organisation representatives, and local disaster management staff using local Sindhi language, sign language interpreters and visual learning aids. For information dissemination pictorial DRR guides for children with intellectual disabilities were created and inclusive flood alerts and preparedness tips were broadcasted on community radio and WhatsApp.

NDF worked with the Department of Empowerment of Persons with Disabilities (DEPD), Government of Sindh, to present policy briefs to the National Disaster Management Agency (NDMA) advocating for disability-inclusive early warning systems, accessible disaster shelters, priority access to relief goods and transport. As a result, persons with disabilities are included in the local DRR committee plans.

For the first time, someone asked how I would escape in a flood. Now my village has a plan that includes me.

— Reena, wheelchair user from Qazi Ahmed, Nawabshah

After NDF's training, I joined the DRR team as a volunteer. I'm proud I can now help others, not just be helped.

— Imran Ali, hearing impaired youth from Daur Town

This initiative by NDF Pakistan stands as a model for disability-inclusive disaster risk reduction—where public engagement is genuine, practical, and led by those most affected. Community ownership grows when persons with disabilities see themselves as leaders and decision-makers. Additionally, simple low-tech solutions (visual aids, SMS alerts) can go a long way in inclusive communication. Most importantly, government partnerships are essential to scale and sustain impact.





Figure 9: Mr. Imran Ali seen receiving assistance from NDF and IUCN during flood response 2022 (Source: NDF-Pakistan Documentation).

9.3. Inclusive Early Warning System in India, South Asia

Under the Flood Resilient Environmentally Enhanced Disaster Management (FREEDM) project, an inclusive and community-centric early warning system has been established by SEEDS in low-lying areas of Bihar to ensure that all community members, including the most vulnerable, are prepared and can respond effectively during emergencies. The system includes water gauges strategically installed in key locations, with the placement guided by GPS for accuracy. These gauges are marked with three colours: a white pole indicating water levels up to 120 meters, and a yellow/red pole marking levels up to 190 meters. The flag system is used to communicate the necessary actions: the white flag (Level 01) signals an alert, the yellow flag (Level 02) prompts the community to gather essential belongings and prepare for evacuation, and the red flag (Level 03) calls for immediate evacuation to safer, higher ground. A full evacuation drill was conducted for the first time after the July 2014 alert, where community members, including women, children, and elderly people, evacuated together with their belongings, livestock, and essential items. Early warning boards have been installed at prominent locations in ten hamlets and outside the Panchayat office, ensuring that the system remains visible and ingrained in the community's daily life, keeping preparedness at the forefront of everyone's mind, even during peaceful times. This system fosters local ownership, participation, and collective responsibility, ensuring that every individual, regardless of age, gender, or ability, can take the necessary action when needed.



Figure 10: River gauge showcasing water level (Source: © SEEDS/ Siddharth Behl).



Figure 11: Red flag alert for immediate evacuation (Source: © SEEDS/ Siddharth Behl).

9.4. National reforestation and human rights education camp in Mali, West Africa

Faced with environmental degradation and the increased risks of desertification, flooding and food insecurity in the Kangaba region, Mali, the NGO ASRAD organised a national reforestation camp from 1 to 15 August 2023, bringing together 250 young people from all regions of Mali under the theme: 'The environment at the service of peace and social cohesion'. The camp was organised in partnership with local authorities, forestry services, community radio stations, schools and technical partners (UNESCO clubs, Youth Climate Network, etc.). The initiative aims to promote civic commitment to restoring ecosystems in order to prevent climate-related disasters, build young people's capacity in human rights, governance and risk management and create a concrete link between environmental action and conflict prevention. Young girl leaders, students with disabilities and representatives from marginalised rural areas took part in the activities. Young people were trained beforehand in their localities and then selected to take part in the camp, creating a multiplier effect on their return.

Practical reforestation activities were conducted involving more than 3,000 seedlings around schools, rivers and at-risk agricultural areas, combined with workshops on sustainable resource management. Collective awareness-raising and participatory communication were done through public conferences, documentary screenings, radio debates and local broadcasts in the Bamana language have enabled communities to become more involved. In addition to thousands of trees planted in drought-prone regions, a national youth-RRC dynamic around environmental issues was created, emergence of young DRR ambassadors in their home communities and strengthened social cohesion through the common goal of protecting the environment.

Lessons learned of the projects are: active involvement of young people creates a powerful lever for social change; linking governance, environment and peace issues strengthens the effectiveness of DRR policies, and participatory campaigns in rural areas must combine traditional knowledge with modern tools (GPS, photos, radio) to have a lasting impact.



Figure 12: Tree planting with school children (Source: ASRAD documentation).

9.5. Engaging Asylum Seekers in New Zealand, Pacific

The displaced community in Auckland comprises individuals and families who have fled their home countries due to conflict, persecution, or other forms of violence. They come from diverse regions, including but not limited to the Middle East, Africa and Southeast Asia. Asylum seekers may experience social isolation, which can result from language barriers, limited social networks, and a lack of familiarity with local customs and social norms. The sense of isolation can make it difficult for them to form connections and engage with the wider community.

Hope Worldwide-Pakistan organizes cultural events, marae visits, Treaty of Waitangi workshops, and social gatherings to promote inclusion and strengthen the resilience of individuals and communities. Marae visits and cultural events create spaces for intercultural dialogue and communication. By facilitating interactions between individuals from different cultural backgrounds, these activities promote cross-cultural learning, exchange of ideas, and the development of relationships. Improved communication and understanding between diverse communities contribute to social cohesion and resilience. Understanding the principles and historical context of the Treaty fosters a sense of shared history, partnership, and reconciliation between Māori and non-Māori communities. This understanding promotes social cohesion, cultural integration, and a deeper appreciation for the indigenous culture of New Zealand.

HOPE Worldwide Pakistan also actively promoted public engagement in disaster risk reduction by empowering vulnerable communities—particularly former refugees, asylum seekers, and ethnic minorities in Aotearoa New Zealand. One notable initiative involved community workshops and multilingual training sessions on emergency preparedness and fire safety, co-designed with local residents. By partnering with local leaders and using culturally appropriate communication tools—including translated materials, storytelling, and visual aids—HOPE ensured inclusive participation. Feedback from these sessions was compiled and shared with local authorities, influencing the design of more accessible and community-responsive DRR strategies. This approach not only built trust but also enabled at-risk populations to contribute directly to shaping safer, more resilient communities. Collaboration and partnerships with various stakeholders, including local communities, government entities, NGOs, and other relevant organizations, play a vital role. Working together allows for pooling of resources, expertise, and diverse perspectives, leading to more comprehensive and effective solutions.



Figure 13: A community session led by New Zealand Police to build trust and share essential safety information with asylum seekers and refugees (Source: HOPE Media Support Team).

10. Conclusions: Key Insights and Recommendations

10.1. Key insights

Weak policy frameworks and lack of institutional capacities (limited funding, staffing, technical capacity) is what limits governments' capacities to engage in and sustain effective public engagement. To address this, governments need to commit to adopting and institutionalising people centered approaches and good risk governance. Governments must shift their top-down approach to tailored approaches that account for the unique needs and local contexts of communities. Governments should reorient themselves from instructing and/or sharing information with communities, to listening to the communities, valuing their perspectives and experience and leveraging their local knowledge and capacities to co-create solutions. Good risk governance increases public trust and participation. Therefore, governments must adopt open and transparent communication to build trust and effectively engage communities. When communication and information is clear, it will increase community understanding of risk and their rights and responsibilities. When people feel valued, it will increase their interest and ownership in DRR.

Inadequate information (i.e. risk information, warning information, disaster risk reduction information) and **outreach** is identified as one of key challenges in public engagement. Additionally, there are five respondents saying misinformation and disinformation as challenges in public engagement. To ensure everyone in a community has equal access to risk and public awareness information, community outreach must be delivered using diverse communication formats and in multiple locations, with special emphasis in locations where most-at-risk community members are known to gather such as refugee camps, community centers, health clinics and schools. Further, it should be ensured that community forums, focus groups and workshops are safe spaces which are culturally sensitive, and inclusive such that women, refugees, and other vulnerable groups feel empowered to speak, contribute, and co-create solutions.

Alongside scientific evidence, disaster risk information should incorporate local knowledge, contexts, needs and priorities; and use diverse communication platforms for wider public outreach. Technology can be useful to reach the wider community, but it is important to combine it with offline engagement and traditional knowledge and practices to ensure accessibility and understanding that will drive community actions. However, despite its benefits for potential wider outreach, gaps in digital infrastructure, digital literacy and limited/lack of internet access still exist in some local communities.

Local leadership plays an important role in mobilising community and local resources to increase and sustain engagement. Integrating traditional knowledge, and ensuring participation of marginalized groups enhance relevance and ownership. It is important to recognise and mobilize local knowledge, expertise, and experience which are often ignored. Sharing and combining expertise, decision-making and commitment at all levels is vital. Communities most at risk and frontline organizations must have space to influence, along with the capacity and power to make decisions.



Lastly, a whole-society approach is needed to include a range of state and non-state actors such as communities most at risk, CSOs, CBOs, different community groups, government departments, international agencies, faith groups, the private sector, media, academia, and more.

10.2. Recommendations

Below are five key recommendations for The HuT Project Demonstrators for effective public engagement in disaster risk reduction:

1. Identify and Include all most -at risk groups.

Identify most-at risk groups and existing mechanisms for their engagement, whether these are formally established or informally created. Identify barriers to inclusion, ensure representation of most-at risk groups and address their specific needs in DRR activities (examples: access to information, participation, decision making).

2. Strengthen local leadership and community ownership through mapping capacities

Identify local leaders and ensure their buy-in in DRR activities. Map and utilize local capacities (including local resources, materials, knowledge). Special emphasis should also be given to empowering women leaders, youth and other most-at-risk groups to meaningfully engage in disaster risk reduction at all levels.

3. Use Diverse and Inclusive information and outreach

Use diverse communication formats, like sign language, braille, translated materials, simplified language, visual tools (infographics, videos), storytelling, easy-to-understand texts and formats, tailored for specific needs and audiences to ensure everyone can access information. Also ensure to conduct targeted outreach sessions in places frequently accessed by most-at risk groups.

4. Use technology and traditional approaches to facilitate knowledge co-creation

Combine the use of technology with traditional approaches, such as face-to-face community meetings, community-based early warning systems, especially for vulnerable populations with limited digital access.

5. Resource mobilisation through partnership and collaboration

Work with and across all groups and levels to pursue the interests of people at risk. Partnering with organizations within and across different regions and sectors on shared actions increases the opportunity to secure political space and enhances impact. To address resource scarcity, various funding channels and expertise can be mobilized, ranging from institutional sources such as international donors, bilateral cooperation agencies, UN and INGOs, to individual-based sources.



Figure 14: Recommendations for The HuT Demonstrator.

11. References

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12. Annex

Survey on Effective Public Engagement in Disaster Risk Reduction

This survey aims to understand how GNDR members define effective public engagement in disaster risk reduction, the challenges and enabling factors as well as their good practices and lessons learnt, to identify common approaches that could be adopted and used extensively across Europe. This initiative is part of The Human-Tech Nexus Building a Safe Haven to Cope with Climate Extremes (The HuT) Project. The HuT is a Horizon Europe Innovation Action project funded by the European Union.

This survey will take approximately 10 minutes to complete. Thank you for contributing your valuable insights to this important initiative!

Informed Consent: By filling up this survey, you consent to take part in this survey and you understand that the information submitted will be published as a report. Please indicate your preference for the use of quotation:

- I do not wish to be quoted.
- I agree to the use of quotations in research outputs if I am not identifiable.
- I agree to the use of direct quotations, attributed to my name, in research outputs.

Section 1: Respondents Information

- A. Name
- B. Organisation
- C. Designation
- D. Country
- E. Years of experience working in Disaster Risk Reduction (select from 1-30 years or more than 30 years)

Section 2: Questions

1. How do you define effective public engagement by the Government for disaster risk reduction?
2. What are the challenges for effective public engagement by the Government for disaster risk reduction?
3. What are the enabling factors for effective public engagement by the Government for disaster risk reduction?
4. What modes of Government's public engagement work well according to your experience?
 - Public consultation (e.g: community meeting, town hall meeting, stakeholders meeting, Focus Group Discussion with community representatives)



- Policy dialogues (e.g: bilateral meeting with DRR authorities, lobbying, roundtable discussions)
 - Knowledge Co-creation (e.g: jointly created publication or good practices or guideline)
 - Involvement in decision making
 - Use of social media
 - Creative communication or campaign (for example: "stop, drop and roll in fire safety technique", street plays, mob dance, music, dance, art performance or media)
 - Other (please mention)
5. In your opinion, what are some good practices to reach specific vulnerable populations, i.e. women, refugees, disabled, etc.?
 6. Please provide examples as much as possible how technology can be used for effective public engagement.
 7. If any, please share your case study in promoting effective public engagement in DRR policies and actions.

