



Early action saves lives

Towards disability-inclusive early warning systems in Cameroon and Niger

Photo: CBM

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Cover image: Marcelline has mobility impairments and was displaced by an ongoing armed conflict in her village. She received a new tricycle as part of the Inclusive Emergency Response Project in Cameroon, run by CBM partner Presbyterian Community Rehabilitation Services. ©CBM

1. Executive summary

Christian Blind Mission (CBM) is an international Christian development organisation committed to improving the quality of life of persons with disabilities in low and middle-income countries. Multi-hazard disability-inclusive early warning systems (MDIEWS) are important components of disability-inclusive disaster risk reduction interventions in CBM, with the goal of preventing or minimising damage from hazards.

To facilitate designing MDIEWS, CBM commissioned a comprehensive needs assessment for drought and flood-prone areas of Niger and Cameroon. The geographical scope of the needs assessment spreads across selected areas in Niger (Diffa and Tillaberi) and Cameroon (Southwest and Far North).

A qualitative multi-method research design was employed, consisting of a literature review and key-informant interviews. Interviews were conducted with disaster risk management (DRM) and early warning management (EWM) agencies; CBM and partners; persons with disabilities and organisations of persons with disabilities (OPDs). The interviews focused on both existing and newly developing multi-hazard disability-inclusive early warning systems and were conducted mostly with DRM organisations and persons with disabilities. To ensure a people-centred approach, three data collection tools were developed for the three different groups of stakeholders according to their functions and needs. Data was gathered focusing on the systemic gaps, barriers and challenges faced by persons with disabilities in Niger and Cameroon, and on the ground situation of early warning systems (EWS) and disaster management protocols. There was also a focus on identifying interventions that would help to create inclusive and comprehensive EWS that can meet the needs of individuals with different types of disabilities.

The findings showed that persons with disabilities were never involved in the design of early warning systems, and that information was not in an accessible format to be useful for persons with different types of disabilities. All respondents with disabilities had a smartphone and access to various social media platforms, with WhatsApp and email being predominant. 60% of respondents from DRM organisations stated that persons with disabilities had not been included in community level disaster management planning across Cameroon and 87% stated that disability disaggregated data was not available with them. 73% of DRM agencies from Niger believed early warning mechanisms were not linked to response mechanisms. 80 % of the respondents from DRM/EWM entities in Niger stated that they were aware of inclusive needs even though only 33% had received any specialised training on inclusion of persons with disabilities in early warnings. 87% of

participants stated that disability disaggregated data was not available with the DRM organisations across Niger.

There is a dedicated focus by the governments of both countries on strengthening early warning systems. Cameroon has a National Emergency Response Centre in place which aims to establish a community monitoring and alert system, and developed a partnership with telecom service providers to facilitate the flow of information in times of crisis. Niger has a disaster risk reduction (DRR) strategy that includes a component of EWS; however, accessibility or inclusion is not highlighted in this strategy.

Some major barriers identified through the analysis included lack of disaggregated data, lack of participation of persons with disabilities in disaster management processes, lack of knowledge of inclusive tools or channels of communication, and inadequate policy in the countries to consider the specific needs of persons with disabilities. Finally, people with disabilities or their organisations were not adequately engaged at community levels, thus having no voice in the planning process.

From the analysis of the information provided and recommendations made by the stakeholders, the following four main areas for future multi-hazard disability-inclusive early warning system programmes are proposed for Cameroon and Niger:

- Ensure stakeholder engagement
- Gather disability disaggregated data
- Inclusive needs-based early warnings
- Pilot an inclusive early warning system

2. Key objective

The overall objective of this study is to facilitate the design of multi-hazard early warning systems that engage persons with disabilities and communities at risk of drought and floods on an equal level. Early warning systems in disaster risk reduction programming remain some of the most effective ways to save lives during or before a disaster. The earlier a person is warned of a hazard and the more prepared they are, the more time they have to make critical life-saving decisions.

Humanitarian actors should include OPDs representing the diversity of persons with disabilities in all phases of the humanitarian programme cycle. When no OPDs are present locally, humanitarian actors should engage peer-support groups, individuals with disabilities, and subject specialists to share their knowledge and expertise about disability inclusion, provide leadership, and ensure that persons with disabilities are fully included

in humanitarian action.¹ This requires their active involvement in all the steps of humanitarian response, ensuring a **rights-based, community-led approach**.

3. Methodology

A comprehensive qualitative people-centred research design was employed, consisting of a literature review followed by multi-layered consultations with key-informants using data collection tools as well as national consultative and validation workshops. As part of this study, a comprehensive needs assessment was conducted to review the systemic barriers and challenges faced by persons with disabilities in Niger and Cameroon during droughts and floods.

The literature review provided an examination of academic and non-academic research on disaster risk management (DRM) frameworks and project portfolios on disability-inclusive disaster risk reduction (DIDRR) for Niger and Cameroon. It looked at the disaster management functions within the respective countries including the legal framework, the available communication network, and the mechanisms of early warning currently deployed. Meanwhile, existing secondary data on the subject was provided by the CBM country offices and included details of the current portfolio of community based inclusive development (CBID) projects, engagement with relevant DRM stakeholders through their plans and internal DIDRR-related strategic documentation. Subsequently, national-level inception workshops were organised to validate facts extracted from the literature review.

To triangulate findings, it was agreed to collect primary data from the relevant stakeholders. These stakeholders were identified after the literature review and divided into three groups based on their functions and needs:

1. DRM/Early warning management agencies
2. CBM/partners
3. Persons with disabilities/OPDs

Participants from each stakeholder group were listed after internal consultation using snowball sampling. According to the methodology, it was initially intended that interviews with key stakeholders would be conducted face to face. Following this, they would have identified on ground personnel for the second phase of consultation. Due to the law-and-order situation, the methodology was revised and stakeholders were consulted virtually. Three data collection tools were designed tailored to each group of stakeholders. Based on these, comprehensive virtual training was provided to a data collection team. This training covered various topics around disability-inclusive data collection, inclusive communication protocols, data collection methods, and the content of the tools. The data

¹ IASC Guidelines on inclusion of persons with disabilities in humanitarian action, 2019

collection team collected information from identified stakeholders which was collated to develop this report.

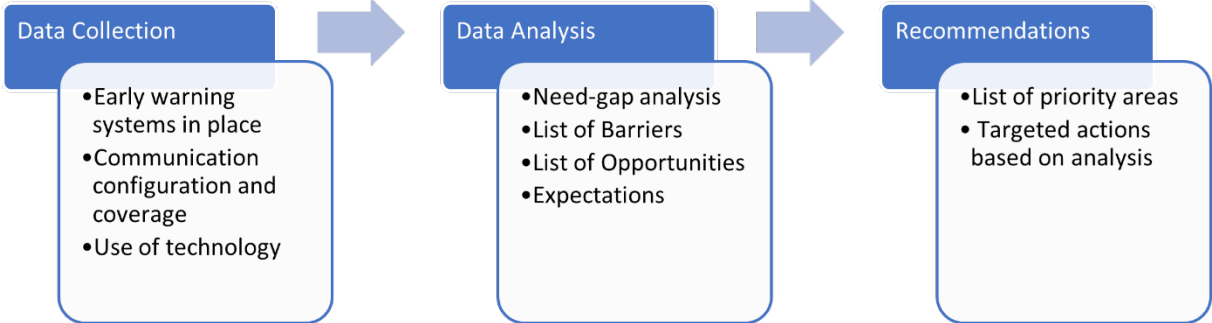


Figure 1: The process flow for the participatory needs assessment.

4. Stakeholders and their roles

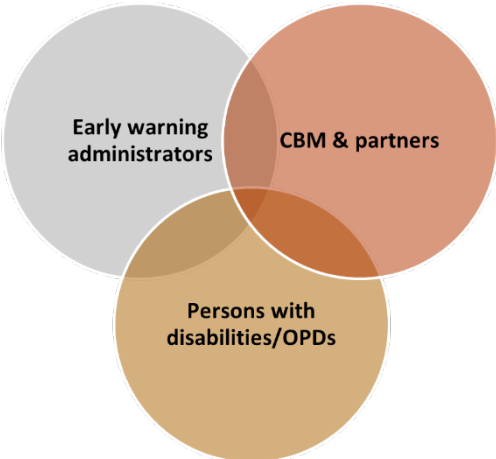


Figure 2: Stakeholder groups

The stakeholders were divided into three groups based on their roles and what they may need from an early warning system. The number of stakeholders who participated in this data collection is displayed in the table below:

Responses on tools:	Cameroon	Niger
DRM/EWM agencies	15	3
CBM/partners	5	4
Persons with disabilities/OPDs	11	10
Total	31	17

4.1 DRM/EWM organisations

Stakeholders for this group included information technology agencies, telecommunications sector, and other organisations working in EWS/DRM in target areas. Fifteen responses were received from Cameroon and four from Niger. These organisations were asked to provide inputs on the early warning systems currently in use and to explain limitations in those systems. DRM agencies were also asked about the current infrastructure of EWS and protocols in place.

4.2 CBM and partners

Stakeholders for this group included CBM country teams and partners working with CBM. Between six and eight responses were sought. Five responses were received from Cameroon and four from Niger. These stakeholders were requested to identify disability inclusion related needs, including barriers and challenges in early warning alerts circulation.

4.3 Persons with disabilities and OPDs

Stakeholders for this group included persons with disabilities and organisations of persons with disabilities working in the targeted areas vulnerable to flood and drought. Ten to sixteen responses were sought. Eleven responses were received from Cameroon and ten from Niger. The data collection tool for this group focused on challenges and barriers, expectations, and a future road map.

5. Findings from the field

5.1 Existing early warning/communication systems

Cameroon

The literature review provided insight into the DRM legislation, associated organisational setup, and communication infrastructure available within the country. Cameroon has a National Contingency Plan - a general common framework designed to guide the action of institutional partners, organisations, and other civil protection stakeholders in coordination with Ministry of Territorial Administration and Decentralisation (MINATD). This document serves as a guiding instrument for disaster management and was prepared in July 2002 with the assistance of the United Nations Development Programme (UNDP) and the support of the Office for Coordination of Humanitarian Affairs (OCHA).

From an administrative and legal point of view, civil protection and disaster management in Cameroon is governed by several national and international texts, in particular:

- Decree No. 2011/408 of 9 December 2011 on the organisation of the Government.
- Order No. 00120/A/MINATD/DPC/CEP/CEA2 of 17 September 2010 establishing, organising and operating the national platform for disaster risk reduction in Cameroon.
- Decree No. 2008/377 of 12 November 2008 establishing the powers of the heads of administrative districts and the organisation and functioning of their services.
- Decree No. 2005/104 of 13 April 2005 on the organisation of the Ministry of Territorial Administration and Decentralisation.
- Order No. 037/PM of 19 March 2003 on the creation, organisation, and operation of a National Risk Observatory (ONR).
- Decree No. 2001/184 of 25 July 2001 on the organisation of the National Fire Brigade.
- Framework Convention on Assistance in the Field of Civil Protection of 2000.
- Decree No. 98/031 of 9 March 1998 on the organisation of emergency plans and relief in the event of disasters or major risks.
- Decree No. 96/054 of 12 March 1996 establishing the composition and powers of the National Council for Civil Protection.
- Constitution of 18 January 1996.
- Law No. 86/016 of 6 December 1986 on the general reorganisation of Civil Protection in Cameroon.
- Decree No. 74/199 of 14 March 1974 regulating burial and transfer of bodies.
- Law No. 67 / LF / 9 of 12 June 1967 on the general organisation of defence.
- 1949 Geneva Convention for the Protection of Civilian Persons in Time of War, together with its subsequent Additional Protocols.

In 2003, the Government of Cameroon created a National Risk Observatory. This structure, set up within the Directorate of Civil Protection, was meant as a tool for predictive risk management. Its missions are collection of all information relating to natural, health and anthropogenic risks; analysing, processing and dissemination of information relating to these risks; ensuring exchange of information between various stakeholders; decentralisation through the creation of peripheral sentinel sites for information collection and monitoring indicators; provision of preventive measures; managing lessons learned from each disaster to prevent future risks; and publication of a cyclical risk bulletin. However, it has been unable to perform its functions effectively so far. A review process was initiated in 2010 which led to the establishment of a National Emergency Response centre set up to collate data and coordinate humanitarian response. Amongst other actions, it aims to establish a community monitoring and alert system and develop

partnerships with telecom service providers to facilitate the flow of information in times of crisis.

Organisational framework for civil protection in Cameroon

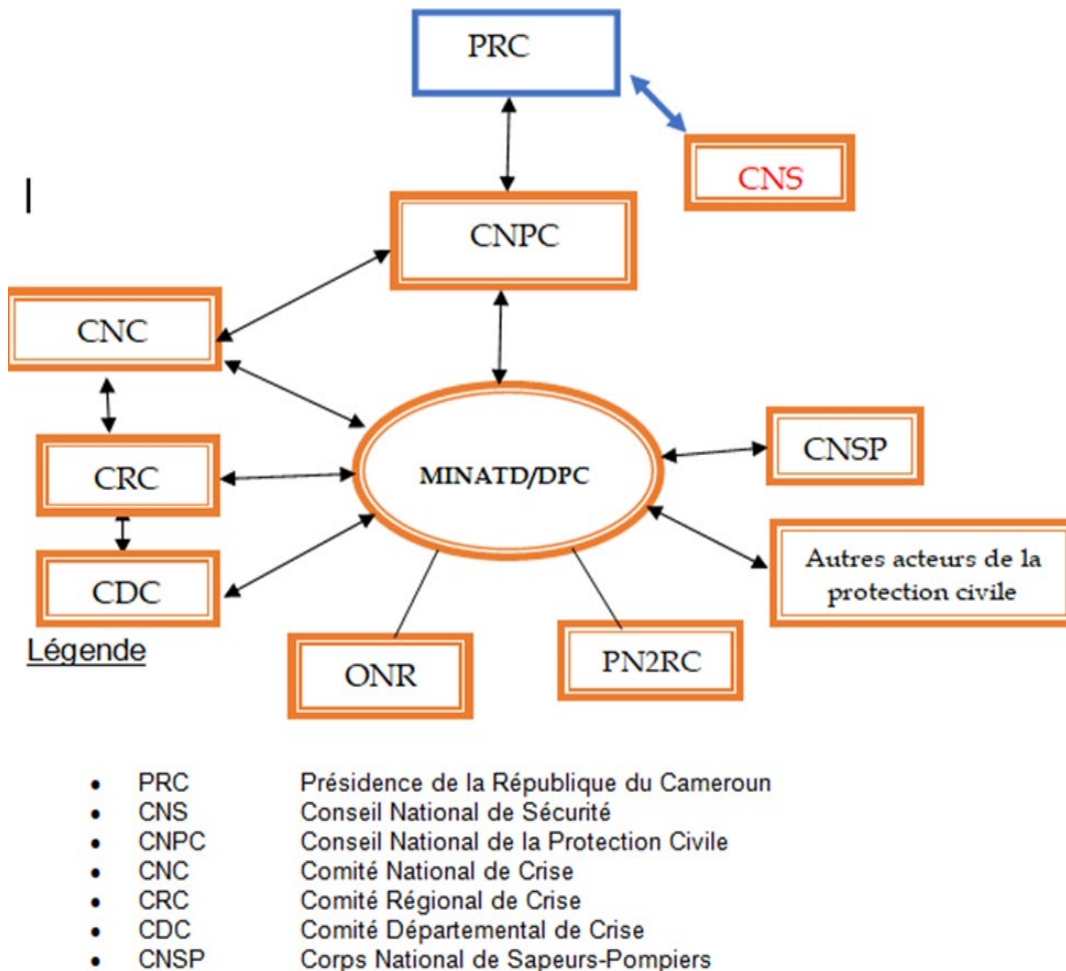


Figure 3: Disaster risk management administration for Cameroon.

Niger

The literature review provided insight into the DRM legislation in Niger and the associated organisational setup and communication infrastructure available within the country. The Office of the Nigerien Prime Minister chairs the national DRR platform that is mandated to coordinate the actions relating to the Sendai Framework. The platform also has a strategy and action plan in place. Five institutions are part of this platform, including the Ministry for Humanitarian Action and Disaster Management, the National Meteorological Service, the National Mechanism for Food Crisis Management, the Civil Protection Directorate, and the National Hydrology Service. Depending on the degree of vulnerability, appropriate responses are planned. Immediately after a flood warning, flood management committees

become active, preparations get started, and intervention mechanisms are put in place. Current EWS in place utilise multiple forms of communication including social media.

Under the auspices of the prime minister's cabinet and with the involvement of multiple ministries and governmental bodies, Niger has also developed a DRR strategy (updated in 2021) which includes a system to monitor droughts and floods across the country. This strategy has a component of EWS under the 4th strategic result (preparedness). On the legal front, the needs of persons with disabilities are taken as compulsory within the framework of the legislation by law 2010/002/ April 13, 2010 and its implementing decree of 2018.

Most of the participants in this study believed there was currently no early warning mechanism although a Flood Contingency Plan was mentioned. One respondent commented that the EWS positioned under the Civil Protection department is not fully operational.

Some of the participants stated that social media is used to share early warnings. However, 73% of DRM agencies who responded to the data collection tool believed early warning mechanisms were not linked to response mechanisms. 80 % of the respondents from DRM/EWM entities stated that they were aware of inclusive needs even though only 33% responded that they had received any specialised training on inclusion of persons with disabilities in early warnings. 87% of participants stated that disability disaggregated data was not available to DRM organisations.

5.2 Inclusion in early warning and DRM processes

Cameroon

60% of respondents from CBM and partners in Cameroon stated that persons with disabilities are not included in early warning and DRM planning. However, all responses from DRM entities, persons with disabilities and OPDs stated that persons with disabilities are completely excluded.

60% of respondents from Cameroon DRM organisations stated that persons with disabilities had not been included in community level disaster management planning and 87% stated that they do not have disability disaggregated data.

All the respondents representing persons with disabilities and OPDs in Cameroon stated that they had never been engaged in any of the forums for establishing early warning systems.

Niger

66% of participating DRM entities from Niger expressed that they take into consideration the needs of persons with disabilities and that persons with disabilities have participated

in DRM planning. As there were a limited number of respondents in this category, this aspect may need to be further analysed.

30% of persons with disabilities and OPDs in Niger felt they had some form of participation in the establishment of early warning systems and only 10% mentioned that their organisation had been involved in DRM planning at the local level.

Have you or your organization been included in the community level disaster management planning? / Est-ce que vous ou votre organisation avez été inclus dans la planification de la gestion des catastrophes au niveau communautaire?

10 réponses

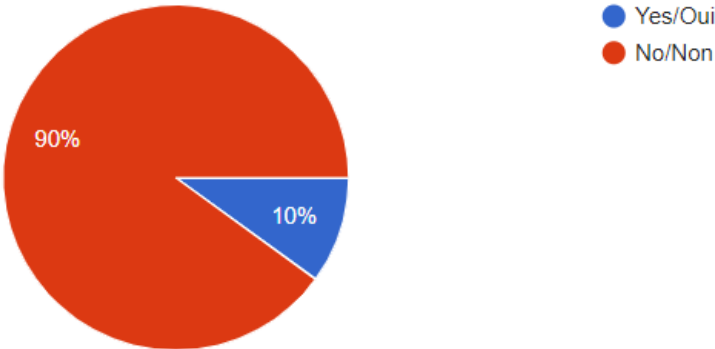


Figure 4: Responses to the question: have you or your organisation been included in the community-level disaster management planning?

Have you ever been engaged in any committee/forum for establishing early warning information systems? / Avez-vous déjà participé à un comité ou à un forum chargé d'établir des systèmes d'information d'alerte précoce?

10 réponses

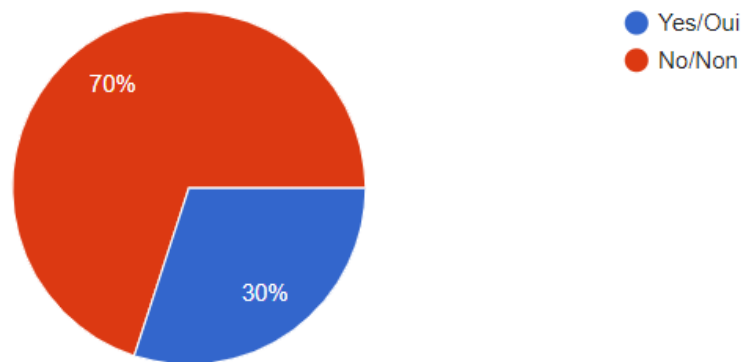


Figure 5: Responses to the question: Have you ever been engaged in any committee/forum for establishing early warning systems?

Have persons with disabilities been included in the community level disaster management planning? / Les personnes handicapées ont-elles ...stion des catastrophes au niveau communautaire?

15 responses

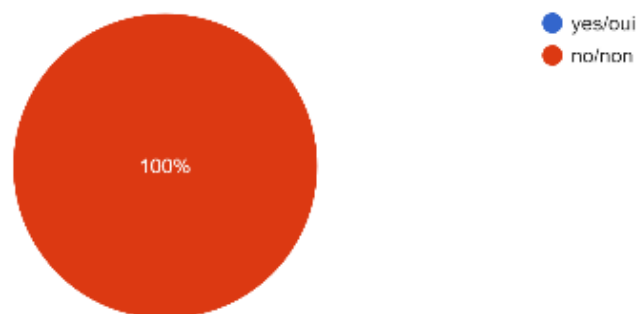


Figure 6: Responses to the question: have persons with disabilities been included in the community-level disaster management planning?

Have you ever been engaged in any committee/forum for establishing early warning information systems? / Avez-vous déjà participé à un comité ou...blir des systèmes d'information d'alerte précoce?

11 responses

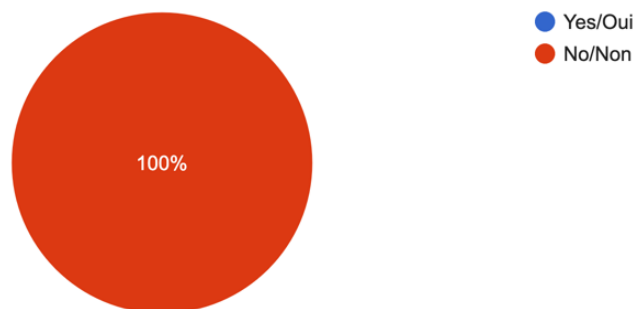


Figure 7: Responses to the question: have you ever been engaged in any committee/forum for establishing early warning information systems?

5.3 Accessibility of information

Cameroon

For Cameroon, a critical need for the provision of accessible information in MDIEWS was identified by the literature review. Because of this, a question related to early warning systems was included in the data collection tool for the respondents who were persons with disabilities and OPDs. The responses indicated that the following communication mediums were considered useful based on types of impairment:

	SMS	TV	Radio	Physical announcement	Newspaper/print media	Local committee/OPDs/civil society organisation (CSO)	Other
Hearing/Auditory	*						*
Vision		*	*	*			
Mental/psychosocial				*		*	*
Physical		*		*	*		*
Intellectual						*	*

All participating persons with disabilities had a smart phone available to them and most were using some form of accessible software. This suggests that smartphones could be used as a platform for an inclusive early warning system in Cameroon.

Do you have a smart phone available? / Disposez-vous d'un téléphone portable ?

11 responses

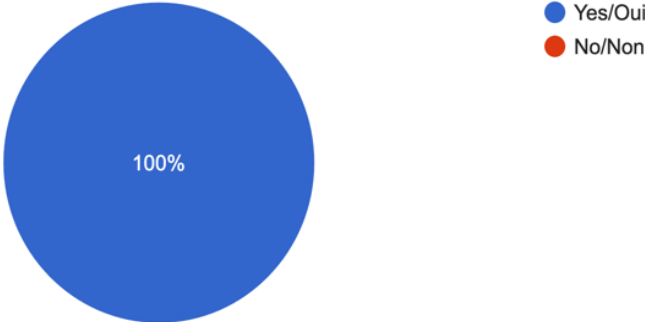


Figure 8: Smartphone availability among participating persons with disabilities in Cameroon.

Niger

The responses from CBM and their partners in Niger predominantly agreed that, despite some efforts and progress, the needs of persons with disabilities are not considered by current EWS. This was substantiated by the fact that only 30% of the survey respondents representing persons with disabilities and OPDs in Niger reported having engaged in the community forum for establishing EWS.

Do you think the current early warning systems consider the needs of persons with disabilities? / Pensez-vous que les systèmes actuels d'alerte précoce tiennent compte des besoins des personnes handicapées?

4 réponses

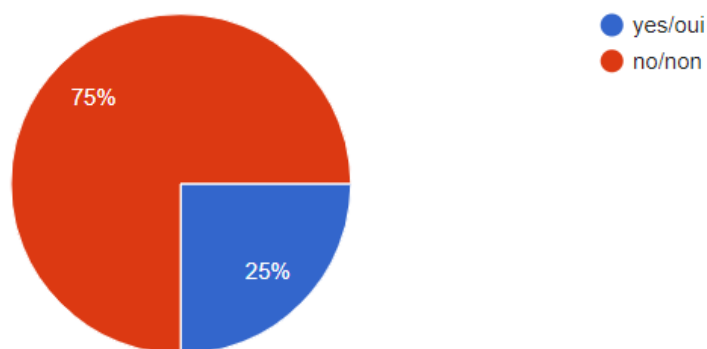


Figure 9: Responses in Niger to the question: do you think the current early warning systems consider the needs of persons with disabilities?

Respondents from CBM and their partners based in Niger reiterated the need for making early warning information accessible to people with various types of impairments with calls for diversification of tools and channels of communication.

The critical actions on information according to the responses from DRM agencies and bodies were:

- identification of target population and specifically persons with disabilities
- nature, location, and size of hazard
- dissemination of accessible information
- send a pre-alert message 72 hours in advance
- send an alert message 24 hours in advance
- systematic needs assessment for life saving support.

The responses from all participants in Niger showed that the following forms of communication were considered useful for each type of impairment:

	SMS	TV	Radio	Physical announcement	Newspaper/ print media	Local committee/ CSOs	Other
Hearing/ Auditive	*	*		*		*	
Vision	*	*	*	*		*	
Mental/	*	*		*			

psychosocial							
Physical	*	*	*	*		*	
Intellectual	*	*		*			

All groups of participating stakeholders across Niger agreed that SMS, television, and community-based announcements were a critical means of disseminating early warnings. The use of local committees was also a preference.

Only 25% of participating CBM and partners expressed partial accessibility of early warning system currently in place across Niger. Overall, the information collected and displayed in the pie charts above indicate widespread inaccessibility of early warning systems in Niger for people with different types of disabilities. They must be adapted to become accessible, based on categories of impairment. For instance, for people with hearing disabilities, there was no sign language interpretation. Similarly, it was difficult for the information to reach persons with visual and physical disabilities.

5.4 Available tools/technology

Cameroon

As reflected in the graph below, 100 % of the persons with disabilities involved in the data collection across Cameroon were using WhatsApp along with a range of other social media applications. Television and radio also had large coverage and are currently being used for early warning communication across Cameroon.

Do you use any of the following? / Utilisez-vous les applications / medias suivants ?

11 responses

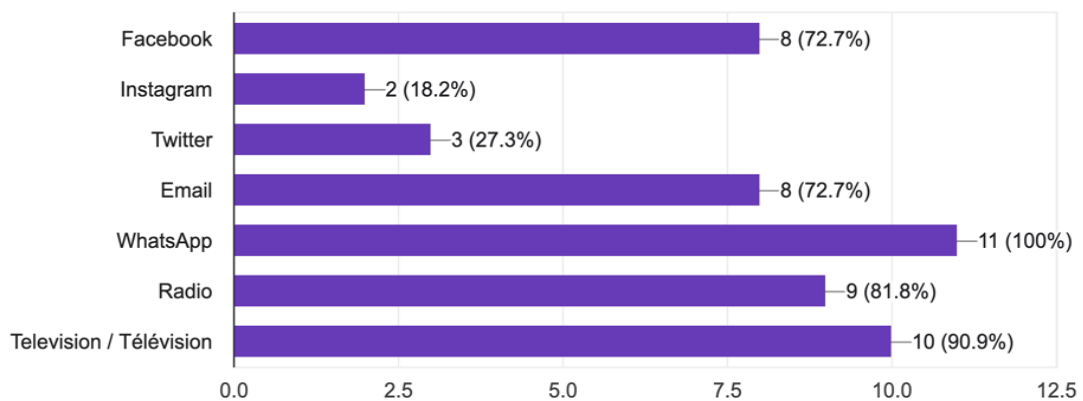
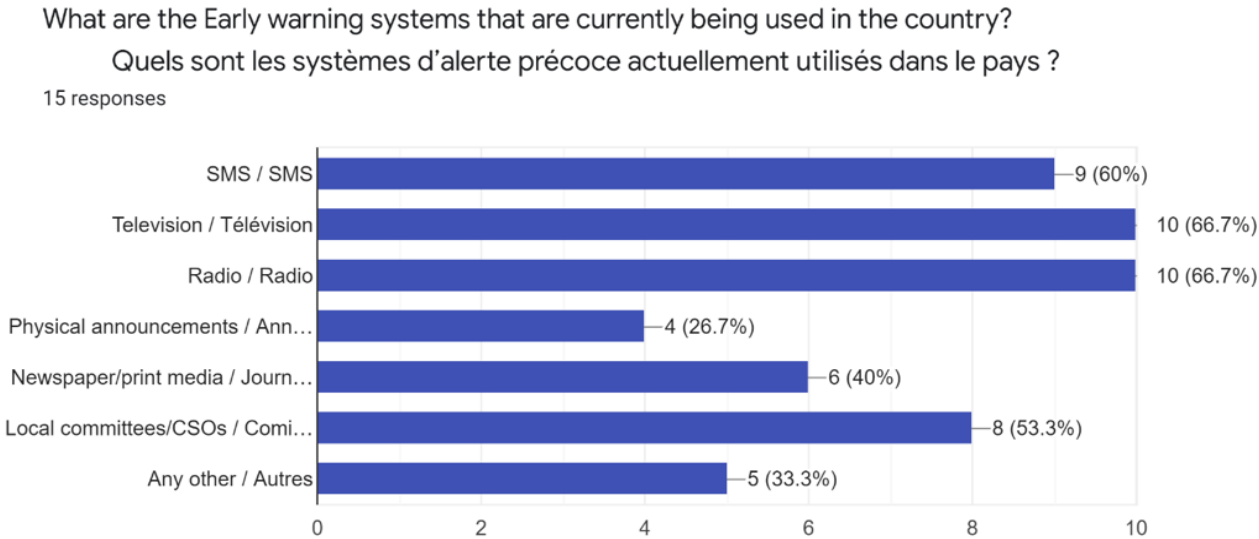


Figure 10: Different software usage among participating persons with disabilities in Cameroon.

As the graph depicts, TV and radio were the most used medium of communication for early warning dissemination by participants in Cameroon. Local committees and civil society organisations play an active part, especially in disseminating door to door information on the household level. They can be lifesaving for persons with limited mobility or persons with disabilities who are bed-ridden. These structures would be useful resources to engage for future EWS activities in Cameroon.

Figure 11: Early warning systems currently being used in Cameroon.



Niger

In Niger, all persons with disabilities consulted through this study had a smartphone, used a variety of software, and had access to multiple platforms. WhatsApp and email were the predominant social media applications used and internet, radio and television were other frequently used medium of communication.

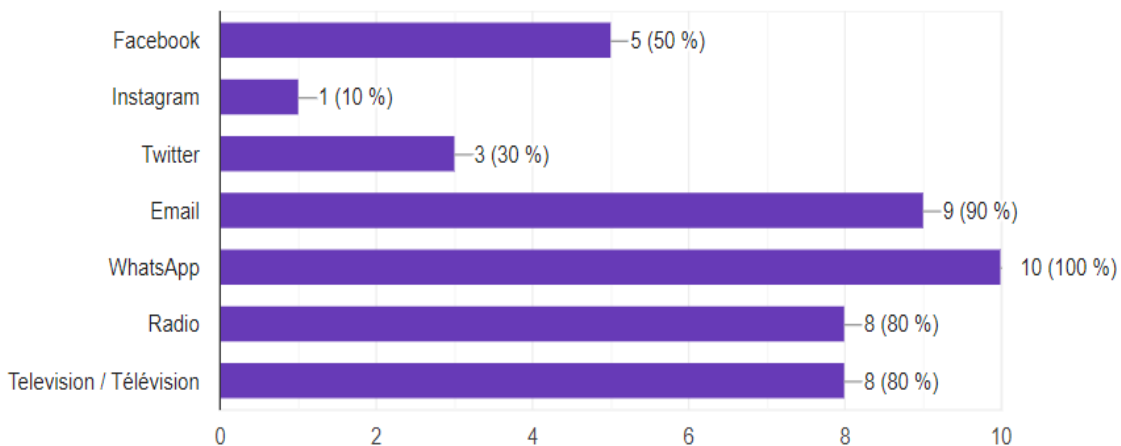


Figure 11: Software usage by participating persons with disabilities in Niger.

Respondents reported use of multiple accessibility tools and software across Niger. Some of those included Job Access with Speech (JAWS) as screen reading software for windows-based devices, talk back as a screen reader for android based platforms, braille as a medium of reading and writing for blind, and instant transcription for people with hearing related challenges. Responses from DRM agencies and bodies indicated that all means of communication were available in Niger. It is important to note here that Niger has some of the lowest telephone coverage in Africa with nearly half of the population without access to mobile phone services.²

5.5 Major barriers to inclusion

Cameroon

The barriers displayed in this table were expressed by stakeholders from Cameroon, representing all stakeholders' groups. They have been tabulated as per stakeholder cluster to reflect feedback from each group.

DRM/EWM organisations	CBM and partners	Persons with Disability and OPDs
Few people with disabilities have access to information, and those with visual and hearing disabilities often confront inaccessibility of communication.	Failure to consider situations of different types of disability, especially during early warning system development process.	Limited access to information
The lack of limited inter-linked comprehensive early warning models and the very	Inaccessible to targeted audience	Format of information not adapted for different types of disabilities

² 'Bringing Mobile Phones and Internet to Rural Niger', worldbank.org, 2021

low speed of the internet at the level of the various state institutions, especially at the National Meteorological Department		
Poor circulation of disaster information in Cameroon	No comprehensive alert system in place	Prevalent lack of ability to read and write among persons with disabilities
Failure to consider their specific needs in terms of communication, lack of specific consideration for people with disabilities, non-inclusive tools, and channels	No statistical data available on persons with disabilities, humanitarian planning and response not being inclusive	Accessible signage is not available
Lack of appropriate and accessible software, lack of clarity on concept of early warning among duty bearers	Legal policies do not consider specific needs of people with disabilities	Lack of expertise in technological tools related to early warnings
Lack of inclusive policy connected with ground reality and specific needs	Types of needs not considered by systems in place, communication channels in use are not accessible	Absence of accessible information regarding rescue points in case of disasters
Prevalent scarcity of resources to dedicated to early warnings	Limited capacity of people with disabilities around understanding and reacting to EWS	Stereotypes regarding persons with disabilities among duty bearers
Failure to consider types of disabilities while planning EWS	Poor circulation of disaster information in Cameroon	Manuals on risk management and risk maps are not in accessible format
Stigmatisation or self-stigma of persons with disabilities obstructing their involvement in society and their access to early warning alerts	Lack of specific consideration for persons with disabilities	Lack of proactive support and guidance by the institutions
Lack of awareness on interpreting early warning alert messages leading to limited understanding on	Non-inclusive tools and channels	Lack of accessible and swift means of transport and non-provision of real time information during developing crisis

best actions to take in case of early warning		
Communication mediums prioritised by institutions are often not widely accessed by persons with disabilities		

Niger

In Niger, the three groups responded differently in their identification of barriers, as presented below, with no commonality in barriers identified by each group.

DRM/EWM organisations	CBM and partners	Persons with Disability and OPDs
Absence of accessible communication means (such as sign language)	Lack of knowledge on disability inclusion among responsible institutions	Lack of participation of persons with disabilities in the system
Barriers in identification of target groups	Lack of sensitisation of authorities and persons with disabilities often possessing limited knowledge on their own rights	Non accessible information regarding crisis.
Lack of disaggregated data	Lack of consideration of disability specific needs while planning and implementing early warning interventions	Dissemination of outdated information
Lack of participation of persons with disabilities in planning processes	Limited political willingness	No opportunities for persons with disabilities, their families, and OPDs to participate in early warning action on community level
	Prevalent scarcity of resources	

5.6 Expectations of stakeholders

Cameroon

All three stakeholder groups were asked to identify their expectations from an early warning system. The survey reflected the following expectations from respondents in Cameroon concerning provision of early warning information and response:

- The alerts must include accessible details around the place of origin of crisis, place impacted, date of emergency, people affected, extent of damage, possible actions, and solutions.
- Early warning systems must take into account the vulnerability of the population, the resilience capacity of the exposed population, and the response capacity of key duty bearers.
- Accessible awareness, information and means of protection to be clearly mentioned. This may include available services/assistance for women, men, and children with disabilities across all age groups.
- In the event of a disaster, both rapid or slow onset, it must be considered critical to determine the effect on people, animals, material, and goods. Based on this information, the needs of the affected population should be assessed in short, medium, and long term while considering the specific needs of persons with disabilities.
- Preventive alerts after weather announcements and sensitise targeted population (based on geographic vulnerability and exposure to flood and/or drought) in local languages using accessible mediums of communication.
- The elements such as risk areas, outbreak of bushfires, quantity of rain, number of days without rain, cumulative rainfall, monitoring of rainfall, exposure, and vulnerability of areas (flood zones) to be regularly monitored.
- Localised early warnings in communities, social media, or additional modes of communication to be adaptive to accessibility related needs.
- Through phone calls and/or other accessible means such as hot-lines, ensure frequent dissemination of critical information to support disaster affected populations (i.e. contact details of fire-fighting agency or red-cross, safe and accessible evacuation routes and possible actions in absence of accessible search and rescue). This information should consider women, men, and children with disabilities across all age groups.
- Real-time information or description on the geography of the environment, including meteorology and climate related information in accessible formats (i.e. voice message, SMS, subtitling, interpreter, sign language).

Niger

In Niger, the expectations from the system as gather from the participants can be summarised as follows:

- Updated and reliable information on timing, date, and location of upcoming hazards.

- Practical advice to mitigate consequences of a crisis in an accessible medium.
- Actual participation of persons with disabilities in planning early warning action.
- Support the empowerment of persons with disabilities in early warning actions.
- Build capacities of organisations to become more inclusive of and for women, men, and children with disabilities.
- Sensitise authorities on disability inclusion in early warning action.
- Build technical capacities and develop tools and materials in local language.

6. Conclusion and recommendations

The recommendations expressed by all consulted stakeholders in Cameroon and Niger have been collated together in one table. The recommendations that came from more than one stakeholder group have been highlighted (in bold) and should be considered as a priority.

DRM/EWM organisations	CBM and partners	Persons with disabilities and OPDs
Make accessible communication available to the affected population	Improve communication between national meteorological and hydrological services and the structures in charge of disaster management and prevention, not excluding humanitarian workers.	Adaptation of information in multiple formats, documents should be in Braille and other accessible formats
Getting early warning systems known through wider dissemination and making channels accessible to persons with disabilities, design specific and adapted messages/signals	Create information relay centres with facilitation for accessible community feedback mechanisms.	Training of support workers in disability-inclusive early warning systems; training in overall disaster risk management
Have disaggregated data on people with disabilities with their location by area, ensure engagement of persons with disabilities.	Undertake awareness-raising actions on meteorological and hydrological phenomena for a better understanding of risks and better decision-making	Institutionalise recruitment of inclusive services such as subtitling, interpreters and personal assistants for sustainability.
Make appropriate software available in	Sensitisation and capacity building of stakeholders	Providesmart customised wheelchairs

communities highly prone to drought and floods, build capacity of persons with disabilities in mastering early warning mechanisms	on disability-inclusive disaster risk reduction (DIDRR)	
Use information channels accessible to persons with disabilities, capable to withstand floods.	Regular updating of contingency plans for disability-inclusive preparedness against floods and droughts	Sensitise OPDs on risks and early warning systems for floods and droughts; Sensitisation of communities on needs of Persons with disabilities in these crisis.
Include persons with all types of disabilities	Establishment of inclusive disaster preparedness and management committees	Involve persons with disability in design of early warning systems.
Transcribe / translate messages in local language using accessible mediums	Access to digital weather models and production of vigilance and alert information.	Increase awareness of governments on disability-inclusive early warnings
Sensitise institutional actors based on needs of persons with disabilities.	Set up a meteorological watch team at the National Meteorological Department to ensure a permanent watch of the weather and to be able to develop and disseminate decision-making aids	Set up accessible mapping of exposed risk areas
Access to financial resources	Access to information in local languages.	Budgeting for reasonable accommodation in disability interventions; Construction of places for refugees
Draw up a short medium and long-term national plan based on specific needs of people with disabilities at all levels	Capacity building for EWS actors, supporting EWS agencies with adequate materials, networking of OPD and EWS agencies and other organisations working in the field of EWS	Target population to be well informed through phone and radio- wide dissemination. Sound alerts and posters to be used for early warning.
Build capacities of actors in designing and	Development of a risk and disaster management	Institutionalising of sign language; with

managing inclusive early warning alert systems, including of persons with disabilities	policy / planning at OPD level	information to be made available in sign language
Ensure implementation of existing policies in place to safe-guard rights of persons with disabilities facing droughts and floods	Establishment of an inclusive platform for informing, monitoring, evaluating, and reporting of lessons learned and good practices in DIDRR activities	Provision of suitable equipment for dissemination of information; availability of telephone numbers of red cross etc.

Mainstreaming people with differences in age and ability into emergency preparedness, (i.e., disaster management and disaster risk reduction) is necessary to ensure the wellbeing of everyone. Persons with disabilities can face additional barriers in emergency situations. The removal of these barriers can be accomplished with the development of standard operating procedures that plan for accessible early warning systems, accessible communications, and accessible services.

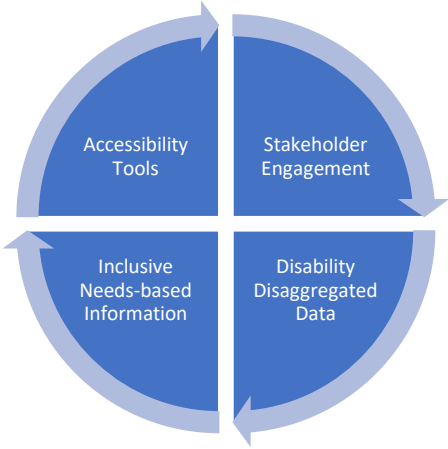


Figure 12: The recommendations

Analysis of recommendations leads to the proposal of four main areas for future multi-hazard disability-inclusive early warning systems concerning flood and drought in Cameroon and Niger, as presented below.

Ensure stakeholder engagement:

The feedback shows that persons with disabilities have not been included in DRM activities including early warning systems. There is a need to foster collaboration between disaster preparedness organisations, broadcasters, and organisations of persons with disabilities

to mainstream disability issues in disaster risk reduction strategies. A critical barrier in ensuring this collaboration is that the relevant agencies have not received any training in disability inclusion. Therefore, there is a need to build the capacity of disaster management organisations, governments, broadcasters, and built environment practitioners by providing technical specifications on accessible communications through regular engagement with the DRM agencies.

Another barrier to collaboration is that persons with disabilities do not have adequate knowledge of their rights and the early warning systems. Local communities must be able to understand and respond to advisory information and should have sufficient knowledge and capacity on disasters and emergencies. Therefore, engagement activities are required to educate them about their rights and accessibility for the early warning systems. This should translate into the establishment of disaster preparedness and management committees inclusive of and led by persons with disabilities.

Gather disability disaggregated data:

All types of disabilities have unique specific needs and there must be a dedicated focus and targeted approach to cater to these needs. Generic requirements would not be able to cater to their specific early warning needs. Therefore, disability disaggregated data needs to be gathered and made available to all stakeholders including disaster management agencies. This may include influencing existing early warning information systems in Cameroon and Niger to include dedicated sections in tools used for identifying the specific needs of flood and drought exposed populations.

The natural outcome of an effective inclusive warning system is its contribution to designing an effective and accessible disaster response. Disability disaggregated data should be used to guide the DRM agencies in developing inclusive programmes and ensuring the visibility of persons with disabilities in the entire early warning management cycle, especially while planning response. Another critical consideration in this context would be to include families and caregivers of persons with disabilities in the entire effort. Therefore, data also needs to include families, caregivers, volunteers, and local civil society organisations, acknowledging their critical role and utilising the same data for comprehensive and inclusive search, rescue, and evacuation, based on disability-inclusive early warnings.

Inclusive needs-based early warnings:

Currently broadcast early warnings are not considered inclusive and accessible by the majority of stakeholders in Cameroon and Niger. All early warning messages must provide information in different formats such as verbal, visual, and written mediums in order to be

sensitive to the specific needs of all community members including persons with disabilities and older persons. The early warnings must recognise the uniqueness of both types of hazards when communicating alerts. With floods being a fast onset disaster, multiple warnings in a short period of time are required. These messages would focus more on evacuation, preservation, and a quick response.

In contrast, drought is a slow onset disaster which requires regular situation reports over a long period of time. Therefore, the early warning messages would need to inform the target audience in multiple formats, providing useful and relevant information that would help persons with disabilities and their communities to respond effectively. The early warning system should also provide relevant contact information. Accessible programmes and messages need to be developed to be broadcast using radio and television.

Pilot inclusive early warning systems:

Based on findings from this study, there is potential to develop pilot early warning systems for floods in Cameroon and for drought in Niger. The learning from both systems must come together to inform future interventions in this area. The pilot early warnings may include:

- **Inclusive risk assessment** providing essential information to set priorities for mitigation and planning strategies including the design of disability-inclusive EWS.
- **Accessible monitoring and predicting systems** with real-time predicting capabilities providing timely estimates of potential risks faced by individuals, communities, and the environment. This should prioritise monitoring such a pilot through persons with disabilities, their families and OPDs.
- **Ensure information communication** systems are in place for delivering warning messages to potentially affected locations and to alert local and regional governmental agencies, including persons with disabilities. The messages need to be reliable, simple, contextualised, and in a variety of formats to be easily understood by authorities and the public. Formats may include audio, visual, print, and electronic mediums.

To integrate the data collection and inclusive messages, it is preferable to adapt existing software. Otherwise, new software needs to be developed. This software would be co-developed and made available to disaster management agencies and used for establishing communication with the target population. The software and database would be hosted by the state disaster management agencies and a downloadable application for smart phones should be made available to persons with disabilities, family members, representatives of local response agencies and OPDs. This application should be able to provide a two-way communication medium, with the target population sharing risks and

their updated status in emergency, and disaster management agencies using the same to predict the crises, issue relevant information, and gather feedback.

It is anticipated that such multi-layered programming on disability-inclusive early warning systems will trigger early action, saving precious lives and paving the way towards inclusion of disability and key disability stakeholders in the entire early warning action across Cameroon and Niger.