

# **Disability Inclusive Climate Change Adaptation Programs as a key value to Sustainable Development in Zimbabwe: An Analysis of Selected Cities in Zimbabwe**

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## **Abstract**

*Climate change significantly threatens the livelihoods of vulnerable communities worldwide, and Persons with Disabilities (PWDs) often experience impacts that are more disproportionate. As global warming intensifies, many countries experience prolonged periods of water scarcity with devastating effects on agriculture, ecosystems and human settlements. Zimbabwe is contending aggravating effects of climate change including increased frequency and severity of droughts, floods and extreme food insecurity. Such challenges aggravate existing susceptibilities especially for PWDs who face various encumbrances in participating fully in social and economic development. PWDs are frequently marginalised from climate change adaptation planning, budgeting and practices. This paper used the empowerment theory by Julian Rappaport (1993) to explore the intersection of disability and climate change adaptation in Zimbabwe, advocating for disability-inclusive strategies that include making use of interpreters and linguists in spreading information, involving PWDs in policy development. With document reviews, interviews and observations, the paper sought views from the PWDs and other key stakeholders on how PWDs are affected by climate change and how they can be included in climate adaptation programs. PWDs from Harare and Bulawayo were interviewed through their Organisations of Persons with Disabilities and selected institutions that teach students with disabilities. Ten PWDs were interviewed, five from Harare and five from Bulawayo. The findings of the study show that exclusion still exists and PWDs continue to be more vulnerable and excluded from major climate change adaptation and sustainable development initiatives. The study gives recommendations to include disability-friendly early warning systems, inclusive Disaster Risk Reduction planning, inclusive infrastructure, disability-friendly policy frameworks and disability-friendly environmental clubs can help to foster inclusive climate-resilient sustainable*

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*development. It concludes by presenting possible solutions which can be used to achieve this.*

**Key Words:** Inclusivity, Vagaries of climate Change, Sustainable development, Disability-friendly Climate adaptation.

## **1. Introduction**

Climate change poses a significant threat to sustainable development, especially in regions like Zimbabwe, where the impacts are felt acutely across various sectors, including agriculture, health and water resources (Mastrorillo et al., 2016). The integration of disability-inclusive approaches into climate change adaptation programs is essential for ensuring equitable resilience among all populations, particularly those with disabilities who often face heightened risks and barriers in disaster scenarios (Mastrorillo et al., 2016; United Nations, 2018).

In Zimbabwe, where approximately 10% of the population are PWDs (Zimbabwe National Statistics Agency, 2022), traditional adaptation strategies frequently overlook the unique needs and perspectives of these individuals. This oversight not only undermines the effectiveness of adaptation efforts but also perpetuates social inequalities (Hurst et al., 2020). By incorporating disability-inclusive frameworks, climate adaptation programs can mobilize a broader range of resources, knowledge and community participation, ultimately leading to more sustainable and resilient development outcomes. This paper explored the critical role of disability-inclusive climate change adaptation programs in Zimbabwe, emphasizing their value in promoting sustainable development. It argues that integrating disability considerations into climate policies is not merely a matter of social justice but a necessary component for achieving long-term sustainability in the face of climate change. The intersection of disability and climate change adaptation is particularly crucial in Zimbabwe, where socio-economic disparities are profound. PWDs often experience greater vulnerability due to limited access to education, resources, information, and services necessary for effective

adaptation. Studies indicate that this demographic is disproportionately affected by climate-related disasters, exacerbating existing inequalities and hindering their participation in resilience-building initiatives (Baker et al., 2018).

Moreover, disability-inclusive climate change adaptation programs can enhance community resilience by fostering inclusive decision-making processes. Engaging PWDs in Climate change risk reduction planning and implementation ensures that their unique perspectives and knowledge inform adaptation strategies, leading to more tailored and effective solutions. For instance, the involvement of disabled persons' organizations can facilitate the identification of specific vulnerabilities and the development of targeted interventions that address these challenges (Shaw et al., 2019). Such targeted programs not only benefit the PWD but their families and the community at large. This paper considered two of these Organisations of Persons with Disabilities (OPDs), one from Harare and one from Bulawayo so as to try and cater for PWDs in both Mashonaland and Matebeleland.

Furthermore, the Sustainable Development Goals (SDGs) emphasise the importance of inclusivity and equity in achieving sustainable development. Goal 10: Reduced Inequalities and Goal 13: Climate Action explicitly call for the integration of marginalised groups in climate resilience efforts (United Nations, 2015). Therefore, aligning climate change adaptation strategies with these goals not only promotes social equity but also enhances the overall effectiveness of such initiatives in Zimbabwe. In as much as these issues overlaps to the able-bodied, this paper is biased to PWDs since these are usually left out in most on such issues and discussions particularly in the development of climate change adaptation frameworks.

This paper analysed existing climate change adaptation frameworks within Zimbabwe, assessing their inclusivity and effectiveness in addressing the needs of PWDs, with those from Harare and Bulawayo as case studies. By highlighting successful case studies and identifying gaps in current practices, it aims to provide actionable recommendations for policymakers and practitioners. Ultimately, this

research underscored the necessity of adopting a disability-inclusive approach to climate change adaptation as a fundamental aspect of sustainable development in Zimbabwe.

Moreover, education and awareness-raising are critical components of effective climate change adaptation. Many PWDs lack access to information regarding climate risks and available support systems (Mastrorillo et al., 2016). Implementing inclusive education programs that provide accessible information on climate change can empower PWDs and enable them to participate actively in adaptation efforts. Such initiatives can also promote awareness among the broader community, fostering a culture of inclusivity that values diverse experiences and knowledge. Additionally, the role of technology in facilitating disability-inclusive climate adaptation cannot be underestimated. Innovative solutions, such as mobile applications and assistive technologies, can enhance communication and information dissemination during climate emergencies. By leveraging technology, adaptation programs can create more accessible platforms for PWDs to share their experiences and contribute to resilience-building initiatives (Zhou et al., 2021).

## **2. Background of the Study**

Zimbabwe, like many countries in Sub-Saharan Africa, faces significant challenges related to climate change, including increased frequency and intensity of droughts, floods, and extreme weather events. These challenges have profound implications for the country's socio-economic development, particularly affecting vulnerable populations, including PWDs in Harare and Bulawayo. As the nation grapples with these environmental issues, it becomes increasingly important to examine how climate change adaptation strategies can be made inclusive to ensure that all community members can participate in and benefit from resilience-building efforts. The prevalence of disability in Zimbabwe is notable. PWDs demographics in Zimbabwe often experiences systemic inequalities that are exacerbated during climate-related disasters. Barriers such as inaccessible infrastructure, lack of information and limited participation in decision-making processes impede their ability to effectively respond to climate impacts.

Despite the growing recognition of the need for inclusive approaches in climate change adaptation, many existing programs in Zimbabwe still fail to adequately address the needs of PWDs. For example, most information is disseminated without the consideration of the deaf, hence they also suffer from mis/dis-information if not lack of it thereof. Traditional adaptation strategies often prioritize the general population while neglecting specific vulnerabilities and capacities of disabled individuals like the deaf who use Sign Language (Hurst et al., 2020). This lack of inclusivity undermines the overall effectiveness of climate resilience initiatives and perpetuates cycles of disadvantage.

This study sought to explore the landscape of disability-inclusive climate change adaptation programs in Zimbabwe, aiming to identify best practices, existing gaps, and opportunities for enhancing inclusivity. By focusing on the intersection of disability and climate change, this research contributed to the understanding of how sustainable development can be achieved while promoting equity and resilience for all citizens, particularly the most disadvantaged.

In Zimbabwe, the socio-economic context further complicates the challenges faced by PWDs in the face of climate change. High levels of poverty, unemployment and limited access to education disproportionately affect this demographic, making it difficult for them to adapt to environmental changes (Mastrorillo et al., 2016). For instance, PWDs rely on informal employment or subsistence agriculture, both of which are highly vulnerable to climate variability. Data gathered through this research showed that a major number of vendors and informal traders in Harare and Bulawayo central business districts are PWDs. The loss of livelihoods due to droughts or floods not only threatens their economic stability but also exacerbates their exclusion within society.

Lack of inclusive policies and frameworks also poses significant barriers to effective climate change adaptation. Although Zimbabwe has made commitments to various international agreements, such as the Paris Agreement and the Sendai Framework for Disaster Risk Reduction, the implementation of these commitments

at the national and local levels often falls short, particularly regarding disability inclusion (United Nations, 2018). There is a pressing need for robust policy frameworks that specifically address the needs of PWDs, ensuring their active participation in climate resilience planning and implementation. Zimbabwe has also made specific strides by, for example, taking steps towards the ratification of the African Disability Protocol and by being a signatory to the United Nations Convention to the Rights of Persons with Disabilities although there is still need to align her policies with these policies.

Also, cultural attitudes towards disability in Zimbabwe may influence the effectiveness of adaptation strategies. Stigmatisation and discrimination can limit opportunities for PWDs to engage in community activities, including climate adaptation efforts. This cultural context necessitates community-based approaches that not only focus on technical solutions but also address social perceptions and promote inclusivity (Zhou et al., 2021).

### **3. Statement of the Problem**

Climate change poses significant challenges to communities worldwide and Zimbabwe is no exception. The country is increasingly experiencing extreme weather events, such as droughts, heatwaves and cyclones, which exacerbate existing vulnerabilities, particularly for marginalized groups. Among these groups, PWDs face unique and heightened risks that are often overlooked in climate adaptation strategies. Despite their significant numbers—approximately 10% of the population (PWDs) are frequently excluded from decision-making processes and lack access to essential resources and information necessary for effective adaptation.

Current climate change adaptation frameworks in Zimbabwe tend to prioritize the general population, failing to adequately address the specific needs and vulnerabilities of PWDs. This lack of inclusivity not only undermines the effectiveness of adaptation efforts but also perpetuates cycles of disadvantage and marginalization. Inaccessible infrastructure, limited access to information, and

systemic biases contribute to the heightened vulnerability of this demographic during climate-related disasters.

Moreover, the inter-sectionality of disability with other socio-economic factors, such as poverty and gender, further complicates their situation. PWDs who also belong to other marginalized groups often experience compounded vulnerabilities that are not addressed in existing adaptation strategies. As a result, the potential for building resilience and promoting equity in climate adaptation remains largely unfulfilled. This study investigated the gaps in current climate change adaptation strategies in Zimbabwe concerning disability inclusion. By identifying existing barriers and exploring best practices, the research aims to inform the development of more equitable and effective adaptation approaches that empower PWDs and enhance community resilience as a whole.

In addition to the systemic barriers faced by PWDs in climate adaptation, there is also a significant gap in awareness and understanding among policymakers and the broader community regarding the specific needs of this demographic. Many climate change initiatives lack comprehensive training and resources aimed at promoting disability inclusion, leading to a cycle of exclusion in both planning and implementation phases. This gap not only affects the effectiveness of climate adaptation strategies but also limits the engagement of PWDs in resilience-building efforts.

Furthermore, the absence of disaggregated data on disability within climate change impacts complicates the ability to develop targeted interventions. Without a clear understanding of how climate change uniquely affects PWDs, it becomes challenging to design inclusive programs that address their needs effectively. This lack of data contributes to a broader issue of invisibility, where the experiences and perspectives of PWDs are overlooked in climate discussions and decision-making processes.

Community engagement is another critical area where existing strategies often fall short. Many adaptation programs do not actively involve PWDs in the co-design of initiatives, resulting in solutions that may not be relevant or effective for their specific circumstances. This lack of participatory approaches diminishes the potential for innovative solutions that leverage the lived experiences of PWDs, ultimately undermining the resilience of the entire community. The study therefore was aimed at recommending disability inclusive climate change adaptation programs for a sustainable Zimbabwe.

#### **4. Literature Review**

Climate change disproportionately affects vulnerable populations, PWDs being among the most at risk. Research indicates that climate-related disasters, such as floods and droughts, exacerbate existing inequalities, hindering the effectiveness of recovery efforts for these individuals (Mastrorillo et al., 2016). Studies have shown that PWDs often face additional barriers during emergencies, including inaccessible evacuation routes and inadequate access to information, which can lead to higher mortality rates and negative health outcomes (Hurst et al., 2020). This study feeds and develops from existing literature as will be discussed in this section.

Zimbabwe is particularly vulnerable to the impacts of climate change, with agriculture being a critical sector affected by changing weather patterns (Mastrorillo et al., 2016). The country has attempted to implement various climate adaptation strategies, including the National Climate Change Policy and the Zimbabwe National Resilience Framework. However, these frameworks often lack specific provisions for PWDs, resulting in a gap between policy and practice (United Nations, 2018).

The integration of disability considerations into climate change adaptation programs is essential for promoting equity and achieving sustainable development goals (SDGs). Goal 10 (Reduced Inequalities) and Goal 13 (Climate Action) of the

SDGs explicitly call for the inclusion of marginalized groups in climate resilience efforts (United Nations, 2015). Literature emphasizes that inclusive adaptation strategies not only benefit PWDs but also enhance the overall resilience of communities by leveraging diverse perspectives and experiences (Shaw et al., 2019).

Despite the recognized need for disability-inclusive climate adaptation strategies, several barriers persist. These include systemic biases within policy frameworks that prioritize the general population, limited access to information and resources and cultural attitudes that stigmatise disability (Kivunja, 2020). Research has shown that many adaptation programs fail to engage PWDs in meaningful ways, often treating them as passive recipients of aid rather than active participants in the decision-making process (Zhou et al., 2021).

Successful case studies from various regions demonstrate the benefits of inclusive climate adaptation practices. For example, community-based approaches that actively involve PWDs in planning and implementation lead to more effective and relevant adaptation strategies (Baker et al., 2018). Moreover, the use of technology and innovative communication methods can facilitate better access to information and resources for PWDs (Zhou et al., 2021).

The role of local knowledge in climate adaptation is well-documented, with literature highlighting its importance in developing context-specific solutions. Engaging local communities, particularly PWDs, can enhance the effectiveness of adaptation strategies by incorporating traditional ecological knowledge and lived experiences (Shaw et al., 2019). This participatory approach fosters ownership and accountability, ensuring that programs are tailored to the actual needs of the community.

The literature underscores the critical importance of integrating disability considerations into climate change adaptation strategies in Zimbabwe. By addressing existing gaps and barriers, and leveraging local knowledge and

inclusive practices, adaptation programs can become more effective and equitable. This review sets the stage for further exploration of specific strategies and recommendations that can enhance the participation and resilience of PWDs in the face of climate change.

## **5. Materials and Methods**

The study adopted the qualitative research approach which assumes that reality is subjective, socially constructed and based on interpretive meanings people assign to their lived experiences (Bryman, 2016). Denzin & Lincoln (2011) argue that qualitative research promotes in-depth understanding of the awareness levels, perceptions and experiences of PWD about Climate Change Adaptation and Resilience programmes as well as how they impact their lives and wellbeing as they try to mitigate the climate-induced vulnerabilities.

The Descriptive Survey research design was used to conduct a cross-sectional analysis of how inclusive are the Climate change Adaption programmes as a key to promoting sustainable development for the PWDs. This design helped to identify and analyse the levels of inclusivity of the PWD in the current adaptation efforts, impact of climate change on their lives, adaptation programmes available as well as the challenges they face as they try to mitigate the climate-induced shocks. A sample of 20 PWDs were purposively sampled from two organisations working with PWDs from Harare and Bulawayo (King George VI Centre and Signs of Hope Trust Zimbabwe). Five key informants were also purposively selected based on their relationship with PWDs from the staff members of these two Organisations of Persons with Disabilities (OPDs), Environmental Management Agency in Zimbabwe (EMA), Department of Social Welfare, and two Health Care providers.

The study was informed by the Empowerment theory developed by Julian Rappaport in 1993 which advocates for the support of individuals and communities to gain control over their lives to address social, economic and environmental

challenges. It emphasizes the importance of enhancing community members' self-efficacy, participation, and access to resources through collaborative partnerships, collective action, and capacity building as a way of building resilience of community members (Rappaport, 1987). The data was collected through document reviews, indepth interviews with ten PWDs, observations as well as key informant interviews with five participants. The interviews were booked in advance and the conversations were recorded on audio devices for transcription later to save time and allow for probing and rephrasing of questions to ensure that the respondents provide comprehensive information on the topic under study. Non-verbal cues were also observed for the PWDs as these helped to identify emotions attached to the responses as they gave insights into their inclusion in climate-related programmes as well as the challenges they are facing due to climate change. Ethics were observed to ensure voluntary participation, informed consent, anonymity of respondents as well as confidentiality of the information provided. Thematic data analysis was done to identify themes, patterns and relationships that provide insights about disability inclusivity in climate change adaptation programming and uncover underlying concepts and meanings.

## **6. Research Findings and Discussion**

### **7.1 Knowledge, Awareness and Perceptions about Climate Change and Sustainable Development**

The study findings confirmed that PWDs have heard about climate change adaptation, resilience and sustainable development, they do lack comprehensive knowledge of what this is all about. The PWDs expressed concern on their lack of participation in any of the climate change planning, budgeting and implementation programmes, thereby resulting in their failure to fully comprehend what these programmes are about. None of the PWDs interviewed had ever attended a workshop, training or capacity building programme.

One of the PWDs had this to say;

*“We have heard our parents and teachers talk about Climate change but we do not really understand what this is all about and think maybe it does not really concern us so much since we are not usually included in any of such programmes. We are not aware that there are any trainings or workshops that are organised for PWDs, if there are any we would also love to attend since we are also human beings just like everyone else despite our disabilities”.*

The key informants concurred with the PWDs adding that, in most cases the guardians or OPDs do attend such events on behalf of the PWDs but at times fail to capacitate these individuals on climate change related issues. This therefore leaves the PWD without personal disaster preparedness and creates a gap in knowledge that needs to be filled if sustainable development has to be achieved. Observations revealed that their awareness levels also vary with their nature of disability, with the severely crippled and blind being the most disadvantaged.

One of the Key Informants commented that;

*“exclusion of the PWD in awareness campaigns, environmental awareness workshops, capacity building programmes is exacerbated by the societal norms of hiding these individuals from the public eye. Even those who have been institutionalised still do not have access to this valuable information as the Institutional Authorities feel they are the custodians of the PWD and will always protect them when disaster strikes. They instead attend the workshops presumable on behalf of the PWDs”.*

Such form of thinking and mentality does not promote inclusion of the PWD and perpetuates their vulnerability to climate-induced shocks and hamper their individual participation and any contribution to sustainable development thereby escalating social exclusion. This goes in line with Mastrorillo et al., (2016)’s line of argument which stipulates that lack of access to information on basic life needs by PWDs hinders not only their safety and access to exercise their rights but also to economic development of any nation.

## **7.2 Climate Change-related Challenges faced by the PWDs**

The PWDs expressed that they face various challenges that are induced by climate change just like everyone else. They further explained that these challenges are further complicated by their existing special needs brought about by their different forms of disability. The majority of PWDs reported experiencing physical barriers which are caused by inaccessible infrastructures. They reported that most premises around Harare and Bulawayo and elsewhere are not disability-friendly. Public premises like schools, health centers, market places, city streets and shops, ablution facilities and even the homes do not have rails, ramps or friendly buildings to accommodate the blind, crippled and deaf.

The majority (90%) of the PWD reported facing communication challenges especially who are deaf and dumb. They indicated that even if they want to learn about climate change issues, they struggle to read and understand the language of the general population. Most (70%) of these PWDs have fully acquired some form of sign language (official signs or home signs) but the general populace whom they interact with do not seem to know sign language. What complicates their total participation in climate change adaptation and resilience programmes is the fact that the early warning systems, awareness campaigns and emergency information are often not accessible to PWDs, especially those with visual, hearing, or cognitive impairments as they are not packaged to meet the needs of the PWD.

Although the deaf are mobile, they need signs to be posted all over for them to read and understand these facilities, without which they cannot fully participate in sustainable development programmes. More so, the blind are totally excluded as no braille material is available for them to read, although walking sticks are at times available for their mobility but when they get to an unfamiliar place then they sorely rely on asking the people around, who at times may just ignore their plight. Additionally, a significant number of PWD (45%) reported facing health challenges that are worsened by climate change impacts like heatwaves, floods, air pollution and cold temperatures which complicate the already existing vulnerabilities.

One of the PWDs commented;

*“What you have asked about is really a thorn in our flesh, as a deaf and dumb, I am usually not treated like I am human except when I go to our school. At home I have realised only my family members are the ones I can communicate with, any relative or neighbour struggles to communicate with me because they do not know my language and I cannot speak theirs. When I want to go anywhere, I have to be accompanied because I cannot communicate with anyone without an interpreter in shops, at the hospital, or with even some of my own relatives. This is so scaring that when disaster strikes how do I save myself without this interpreter, how do I ask for help from people without this interpreter? How then do I participate in the Climate change programmes when no one else can communicate with me?”*

The Key informants consolidated these findings adding that the PWDs face diverse challenges due to poor infrastructure thereby signifying total exclusion and insensitivity to the daily needs of these people in developmental efforts, worse still in disaster situations. The public spaces, transport systems and even the recreational facilities in the country are not disability-friendly making it difficult for the blind, deaf and crippled to quickly get help especially during an emergency without the need to rely on other people to help them which is not sustainable. Further challenges experience by the PWDs as reported by the key informants involve evacuation challenges due to narrow corridors, stairs, terrains and lack of adequate and proper evacuation equipment especially in public spaces and their homes. Some of the PWDs fail to comprehend the evacuation instructions making it very difficult to react during emergency situations like floods and fires. This therefore becomes contrary to the Empowerment theory that advocates for the total involvement of all individuals in society to build their self-efficacy and resilience to any external shock (Rappaport, 1987).

Although advocacy has been going for long now but implementation has not been done. They added that PWDs often suffer low or lack of education, low access to health services, lack of access to productive resources, poor sources of livelihoods

that intensify their poverty and hunger. Despite this the PWDs are socially regarded as more like second-class citizens who are left to the individual families to deal with them and help them yet they can also make a significant contribution towards any developmental effort within their communities and the nation at large. In addition, these PWD are also affected by droughts, inflation, floods, climate induced diseases and many other challenges without any access to proper information or means of getting the information due to their lack or low education. This therefore means that these people will have to be dependent upon their loved ones all their lives yet they could empowered to have improved livelihoods, be self-reliant and productively participate in socio-economic development of not only their families but the community at large. Kivunja, (2020) also noted the same through the observation that the exclusion of PWDs from basic communication leads to their lagging behind with regards to information pertaining to their education, health access and other basic needs.

### **7.3 Disability-Inclusive Climate Change Adaptation Programmes**

Only a few PWDs (35%) reported some participation in minor livelihood projects initiated by the families and contributing here and there to income generation. A few (35%) PWDs reported participating in small merchandise/vending activities in the CBD and doing general manual work like building, house cleaning, grass cutting, and building. None of the PWD mentioned being involved in any professional job due to their lower levels of education and marginalisation by both their families and community. Stigma and discrimination were also mentioned as a major challenge that engineers the perceptions of people about PWD and how they then engage them in these climate change resilient programmes. This then causes the PWD to suffer social isolation and eventually lose their self-esteem and zeal to participate in the productive activities themselves.

The majority (60%) of the PWD have heard about Climate Change Adaptation programmes that include smart agriculture, environmental campaigns, capacity building workshops, the climate change early warning systems but none of them

reported ever participating in such programmes or getting full information about such programmes. Key informants confirmed these findings by reporting that such programmes are usually attended by the representatives of PWD who come from the OPDs and not the PWDs themselves. Reasons for such marginalisation highlighted by the key informants included mobility problems, low literacy levels of the PWDs, physical needs and unavailability of sign language interpreters and braille material for the blind.

The key informants highlighted several programmes that have implemented in both Harare and Bulawayo which included the Climate Adaptation Water and Energy Infrastructure Programme (CAWEP) of 2022 which supported the development of climate-resilient water and renewable energy infrastructure in vulnerable communities. Again, the Transformative Urban Climate Adaptation programme which focused on addressing water-related hazards and impacts in Harare had no PWDs participating. In Bulawayo, the Green Cities Initiative Led by the Food and Agriculture Organization (FAO), which aimed to transform Bulawayo into a greener, cleaner, and more resilient urban center focusing on agroforestry practices, land restoration, and mitigating greenhouse gas emissions did not include PWDs. Although the Climate Change Programming on Radio in Bulawayo broadcasts climate change awareness programs in various languages, helping to educate and inform the public about climate resilience and adaptation, nothing has been done to translate that information into sign language or braille for inclusion of the deaf and blind.

## **Conclusion**

The interchange between climate change and disability indicates the need for multi-stakeholder approaches to sustainability and resilience issues. The study established that the PWDs are marginalised in climate change adaptation and resilient programmes. Various forms of disability pose different vulnerabilities of the PWD to climate change and climate induced shocks. The PWDs face various challenges which include physical barriers, unfriendly infrastructure, lack of disability-friendly health and education systems, communication and language

barriers, stigma and discrimination as well as inadequate evacuation and emergency equipment to help them during disasters. The PWD have low literacy levels and inadequate knowledge about climate change and sustainable development issues.

Although Climate change adaption programmes exist, PWDs do not have access to attend these as they are usually attended by representatives from OPDs who then have a mandate to cascade the information to the PWDs. Unfortunately, not all PWDs are part of these organisations and the majority struggle with meagre livelihood activities to fend for themselves despite their vulnerability to impending climate induced disasters. The most marginalised are the blind, deaf and those severely crippled. These however require targetted interventions to promote their involvement in development efforts after serious capacity building and skills training.

### **Recommendations**

It is hoped that by integrating PWD into climate change adaptation and sustainable development programmes, a more resilient society can be created that enables everyone to be included in productive programs and capacitate the PWDs to be resilient against the variabilities of climate change. This helps them to become self-sufficient and relieve their families of the burden of caring for them and generate income and start up entrepreneurial activities that can ultimately benefit the whole community and the society at large. A multi-stakeholder approach is ideal and the following recommendations were made;

#### **Disability-friendly Infrastructure**

All infrastructure, especially all public places like education centers, health centers, market places, recreational facilities must be disability inclusive through the construction of rumps and rails to facilitate those who are wheel chair bound to access, signs should be put together with well labeled facilities to show where people can access the services. All such infrastructure including ablution and evacuation facilities must be disability friendly such that during climate-related

emergencies, PWD will not struggle to access and exit. Braille material must also be made readily available so that those with visual impairment can be catered for and also partake in any climate related activity or programme.

### **Disability-friendly Early warning system**

There is need to develop early warning systems that communicate climate change alerts in various formats such as text, audio, sign language, and visual signals, ensuring they reach all individuals, including those with disabilities. These can be in the form of Community Drills organised to give environmental information that covers disaster risk preparedness and sustainable development including all persons in the communities including PWDs so as not to leave anyone behind. This helps to build the PWD awareness about environmental and climate change information thereby developing their mitigatory strategies. For example, in 2018 Fiji implemented an inclusive early warning system as part of the Climate Risk and Early Warning Systems (CREWS) initiative (Climate Risk & Early Warning Systems (CREWS), 2024). The system included multiple formats for disseminating warnings, such as text messages, audio alerts, and visual signals. The initiative also involved training community members, including persons with disabilities, on how to respond to warnings and eventually strengthened the PWD's resilience to climate induced shocks.

### **Inclusive Disaster Risk Reduction Planning**

The PWD must be involved in the Disaster Risk Reduction Planning process to ensure their needs are considered. This will help to understand their perception of climate change adaptation, the risks involved, challenges they are facing as well as customized plans that can be developed targeting the PWDs and their various forms of disabilities. This equips them with strategies to respond during emergencies and also help others whenever the need arises. For example, in 2019, the Nchiru Disability Self Help Group in Kenya successfully advocated for disability inclusive planning which was supported by the Kenyan government and about 38 climate change action plans were developed in over 38 counties (Marangu, 2022). These plans were translated into vernacular languages and

made available in multiple readable formats to increase accessibility for persons with disabilities.

### **Disability-Friendly Policy Frameworks**

There is need to design policies that are disability friendly in every area of life for example educational policies, health policies, empowerment policies, employment policies, transport systems, recreational policies, land reform policies among others. Policy Audits are also very crucial to assess the contemporary social, economic, political and environmental policies and ensure they are inclusive to the PWDs. Such audits can help to identify gaps in disability inclusion which hampers their participation in all facets of development. Additionally, advocacy is also key to always remind and enforce the policy makers to continuously review their policies and address inclusivity issues. A good example is the one implemented by the European in 2020 where it devised initiatives to work with partner countries through the European Union Green Deal (Denninghaus, 2024). This initiative supports disability-inclusive climate adaptations, green economy, and sustainable cities policy frameworks and emphasizes the importance of designing inclusive and accessible infrastructure and service provision.

### **Disaster-Friendly Environmental Clubs**

Environmental clubs which are disaster and disability friendly can be established in schools that help to raise awareness on environmental, climate change, sustainable development and disaster preparedness which will include all students including those living with disabilities. Such clubs can be coordinated by the national environmental organisations like EMA and be cascaded into the communities to cater for those PWD who might be out of school. Such clubs also help to conscientize everyone on how to respond when disaster strikes as well as how to help those living with PWD making everyone's responsibility to look out for the PWD. A good example is the Philippines Environmental clubs initiated in 2017 in schools and communities which have been focusing on disaster preparedness and environmental sustainability (Centre for Disaster Preparedness, 2024). These clubs include activities that are accessible to persons with disabilities and

encourage their active participation. The initiative has led to increased awareness, resilience and inclusivity of PWD in disaster preparedness efforts.

### **Capacity Building and Training**

Awareness campaigns, road shows, multi-media campaigns including those in sign language and printing in braille can be done to increase the knowledge of the PWD about key environmental challenges, climate change and how it is intertwined to sustainable development. These can take the form of skills development programs, sensitisation workshops, capacity building activities, road shows, visual and non-visual presentations which can help to provide information to the PWDs. The PWDs must be encouraged to take leadership roles within these clubs to promote their participation and boost their motivation, self-esteem and environmental and disaster preparedness.

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