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# Local leadership for global impact - climate change knowledge exchange visits with communities most at risk: a case of Chimanimani District in Manicaland - Zimbabwe

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## ABSTRACT

Climate change poses a formidable challenge to global development, with its severe impacts disproportionately affecting vulnerable rural communities. Flooding, drought, land degradation, are destroyed lives, property, and livelihoods, particularly among impoverished populations. Efforts are being made locally by the affected communities to mitigate and adapt to the increasing intensity and frequency of climate-related events. This study was undertaken in Bumba, Nthezdwa and Chaseyama area in Zimbabwe's Chimanimani district, a geographically arid region near Mozambique. The aim was to learn about the local community's experiences and strategies in responding to climate change including the aftermath of cyclone Idai. Qualitative research methods, participatory approaches, focused group discussions and key informant interviews were employed involving 54 community members and 6 key informants. Civil Society Organizations were actively engaged in responding to climate change through ecosystem-based adaptation measures. Initiatives included agroforestry, indigenous tree planting, underground water harvesting to replenish aquifers, and beekeeping and processing as a source of income. The positive outcomes of these interventions include increased underground water levels for horticulture and the reclamation of eroded galleys. To further support beekeeping practices, 5000 bee hives were being prepared for distribution in the hilly regions to preserve the trees for bees and act as wind breakers while earning income. In conclusion, this study emphasizes the significance of localized solutions and active community participation in addressing climate change effects. By implementing ecosystem based solutions from local experiences has a positive impact in building resilience and mitigating climate change effects.

**Keywords:** Climate change, adaptation, mitigation, vulnerability, indigenous, Chimanimani

## INTRODUCTION

Climate change has become one of the greatest disaster risks facing the globe. The intensity and frequency of climate related disaster risks is on the increase observed in many regions globally (IPCC, 2022). Climate change –induced extreme weather events have been at their worst increase in the past decade between 2010-2020 across Africa and globally

(Dube, Nhamo, & Chikodzi, 2021). UNDRR, (2020), in the last 20 years, 90 percent of

major recorded disaster events were weather-related. Flooding is also becoming more frequent and widespread. Huq et.al. (2007) reported that floods are already having very severe impacts in many urban and rural areas in African nations. The frequency and intensity of climate related disasters include flooding, drought and extreme weather conditions. Floods in their nature, have more of negative effects on food security availability, accessibility, stability and utilization to the affected population; lack of clean water and many other essential goods and services (IPPC, 2001 and 2021). Floods have destroyed developmental infrastructure and increased human casualties around the globe (UNISDR, 2015). This poses a great threat to the livelihoods and development of nations, especially least developed countries. Worst affected by these risks are women and communities with limited coping capacity usually in rural areas. These normally depend on agriculture production that is dependent on weather and climate. In effect, the recovering experiences of floods may well depend on disaster risk reduction preparations efforts by both communities and governments and can become crucial for evolving future responses to sudden and irregular climate events.

Moreover, flooding has disproportionately destroyed building structures, and further worsened economic status, particularly people who live in lower areas and informal settlements (Kikwasi and Mbuya, 2019). Whereas in sub-Saharan Africa, losses due to flooding is over US$300 billion (Jongman, 2018). This challenge of managing and preparing for disaster risks cannot be left for the government alone but should incorporate informal organizations and local communities as well.

Major observations of climate related events include extreme climatic events in all inhabited regions, with many regions experiencing unprecedented consequences, particularly when multiple hazards occur at the same time or within the same space (IPCC, 2022). Further, the report indicates that there has been an increase in extreme weather events such as wildfires, extreme heat, cyclones, storms and floods have adversely affected communities causing huge losses and damage to human health, shelter, displacement, incomes and livelihoods, security and inequality especially for the vulnerable communities residing in hazard prone regions. For instance floods in Mozambique in 2000 which displaced about 4000 people in Maputo and crippled the entire transport system and communities at large (Christie and Hanlon, 2001). Disaster risk reduction and climate change mitigation strategies have been made in responding to these hazards. The local government and communities should take a leading role in mitigation and adaptation strategies. The resilience of the community is the cornerstone of increasing the capacity of the community to adapt and live with the hazards in a sustainable way. The United Nations International Strategy for Disaster Reduction (UNISDR) emphasizes resilience as the ability of a system, community or society exposed to hazard and recovery from the effects of hazard (UNISDR, 2009).

## LOCAL MITIGATION AND ADAPTATION STRATEGIES

The effects and impact of climate change has not spared the globe and poor nations and local vulnerable communities in developing nations. Both the livelihood and the ecosystem where the communities depend for their livelihood is affected. There is a need for communities to adopt measures and strategies which are sustainable without worsening climatic conditions. Adaptation and mitigation are the two key approaches that are proposed for the community at risk. Adaptation is premised on a transformative agenda that translates into fundamental changes to livelihoods or behaviors of the community (O'Brien 2012; Kates et. al.. 2012; Preston et. al., 2013). Resilience is the ultimate goal of sustaining a community's livelihood. Mitigation on the other hand focuses on measures to lessen the impact on the vulnerable community as they attempt to adjust their livelihoods in the changing climate.

The focus of this study was to learn about the local community's experiences and strategies

in responding to climate change effects including the aftermath of cyclone Idai in Chimanimani district of Zimbabwe.

### Challenges for local adaptation

At community level, people are unable to effectively adapt and reduce the risk of exposure to disaster risk reduction and hazard due to poor governance and legal framework. Lack of comprehensive governance and legal framework usually (top-down approach) contributes to the failure to set clear disaster risk reduction targets for communities-at-risk (Holloway, 2003; Pelling and Wisner, 2009). Both policy and decision makers at national and local level were limited. The communities were rarely consulted on what needs to be done to reduce disaster risks they are exposed to. The government through key ministries such as agriculture, education and community development came up with solutions for the community and yet the community could not comply with the advice given. It has been argued that successful community based DRR interventions create resilient communities, whilst reducing vulnerability through development projects (UNDP, 2004; UNISDR, 2004; DFID, 2005). The local community provides ownership and leadership in preparing and responding to measures to mitigate effects of climate change. In this regard, the use of a community's capacity and resources is crucial for sustainability of interventions in disaster risk reduction (Shaw et al., 2011). The community is, after all, the key factor and primary beneficiary of DRR interventions and victims when disasters strike .There is a need therefore to recognise local leadership and governance sustainable community development.

### Community leadership and disaster risk reduction

Currently, disasters are affecting people at different levels based on their capacity and vulnerability to withstand them (Phiri et. al., 2016). According to the International Strategy for Disaster Reduction (ISDR), (2009), vulnerability refers to long term factors and conditions that adversely affect the ability of a community to respond to, cope with or recover from the damaging effects of the occurrence of hazards or disaster events. Preparedness and lack of information are the capacity gaps in most communities. Supporting institutions mandated to provide services is an effective and sustainable way to reduce vulnerability and risks affecting the communities. Vulnerability is not only a natural phenomenon of lacking capacity, but also a result of an entire range of constantly changing biophysical, social, economic, cultural, political and even psychological factors that shape people's lives and create the environment in which they live (Phiri et. al., 2016 and Kizilay, 2010). Knowledge and skills is critical for both local leadership and the communities living at risk of the effects of climate change. The role of the society is significant to bring social economic development while responding to climate change and disaster risk affecting them. According to Oxfam (2007), Social vulnerability is associated with communities that are marginalized in economic terms. This means that people who are economically steady are safer than the poorest when disasters occur.

This research has revealed that community based interventions and plans yield the best results. The most trustworthy primary data in understanding the disaster risk profiles of communities is when the local communities and their leadership are fully involved and consulted (Abarquez and Murshed, 2004; UNDP, 2007; 2009;2; Holloway et. al., 2008; Pelling and Wisner, 2009). Participatory approaches are an effective way of providing community leadership to assist the at-risk communities. This entails applying local knowledge and experiences to analyse their own coping capacities. It involves mobilisation of local resources to develop tools and strategies for DRR, and to find possible lasting solutions for building resilience in communities. A resilient community uses its local resources and skills to manage and mitigate hazards from becoming disasters. Community understanding disaster risks is of paramount importance. This is supported by the Sendai Framework of Disaster Risk Reduction priority two (2), that focuses on

strengthening disaster risk governance to manage disaster risk (UN, 2015). The aim is to enhance the role and give power to the structures managing disaster risk management systems at national and community level.

## METHODOLOGY

The study employed qualitative research design. This was with a view to collect information on the perception and experiences of the community on climate change related disaster risk. It also focused on understanding the role local leadership can influence adaptation and mitigation of disaster risks to sustain their livelihoods. The information was collected from Chaseyama area in Chimanimani district. Geographically, the district is close to the border with Mozambique. Chimanimani was in 2019 affected by the worst disaster, cyclone Ida which claimed hundreds of lives and left a trail of destruction of property in the district. Additionally, local communities working on environmental degradation and recovery from Cyclone Idai were interviewed during the study. This was to appreciate the local challenges and measures being implemented on the ground and how they are impacting on the livelihood of the local communities.

### Geographical Overview of Chimanimani

The study was undertaken in Chimanimani district of Manicaland Province of Zimbabwe. It is a mountainous district situated in the eastern part of Zimbabwe bordering with Mozambique in the east, Mutare the provincial capital in the North (Figure 1). The population of the district according to the 2012 census was 134 939. Chimanimani is a rural district whose main economic activities largely depend on subsistence farming. Crops grown include maize, sorghum. Cattle is the most common kept Livestock.

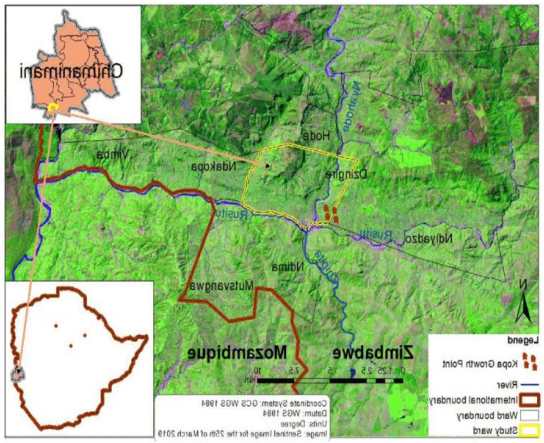


**Figure 1:** Chimanimani District
SOURCE:https://www.researchgate.net/figure/Location-of-the-study-area-in-Chimanimani-District-Zimbabwe_fig1_343239193/download ACCESSED 7/6/2022

### Study Setting

The National Conservation Development Trust (NCDT) is a Civil Society Organization based in Zimbabwe working with CSOs in Chimanimani Area in the Manicaland Province. The Trust is a nature based organization that focuses on reducing the degradation of the environment.

### Data collection methods

The study used participatory methods for data collection. This included focused group discussions (FGD) for community members. Members were put in groups of 8 deliberate to questions from the interview guide. Translation from Shona was done by the National Conservation Trust Representative.
Key informant interviews were conducted for stakeholders including project facilitators at PORET responsible for training community members. Also community leaders and lead individuals who were implementing ecosystem based solutions such as water harvesting, indigenous tree planting among others.
Further, community meetings were conducted at PORET Centre where participants included, youths, women and men representatives from different villages attended the training on adaptations and mitigation strategies. These measures could better be understood in the

realm of the social institutions and cultural values, formal laws and policies and economic opportunities that shape the informal rules and norms of access (Milgroom et. al., 2014). The study investigated experiences from local experiences and knowledge on issues relating to climate change adaptation in the community including the following:

1. Major livelihood activities
2. Knowledge about the understanding of climate change by the community
3. Causes and impact of climate change in the communities
4. Climate change adaptation and mitigation strategies currently in place in the community,
5. Management of local environment, climate change and its consequences
6. Recommendation of interventions to enhance resilience

### Sampling methods

The study employed purposive sampling, whereby participants were selected based on their role in the local leadership. These included; expert the main project stakeholder, National Conservation Development Trust (NCDT), Chief Executive Officer Mr. Togarasei Fakarayi and Mr. Shingi Sakarombe the Project Coordinator. Other institutions involved were those applying the Ecosystem Based Adaptation (EBA) approach to conserve biodiversity and the physical environment. It has partnered with local CSOs in Chimanimani district. These institution included; Participatory Organic Research and Extension Training (PORET),Towards Sustainable Use of Resources Organization (TSURO), Chikukwa Ecological Land-Use Community (CELUCT), and partnership with the government department through Agricultural Technical and Extension (Agritex) staff.

A total of 54 local community members participated in the study consisting of 24 Males and 30 females respectively. These were purposely selected as being members representing communities or participants in the ecosystem based adaptation training conducted at PORET. Local bee-keepers were also involved.

### Data Analysis

The information about resilience and climate change adaptation perspectives was analyzed under the following thematic perspectives derived from FGDs and interviews:

1. Local knowledge management strategies of the environment for addressing Climate change
2. Understanding of climate change
3. Causes and effects of climate change
4. Ecosystem based adaptation an approach disaster risk reduction
5. Options for addressing climate change for resilience

The data was descriptively analysed and discussed in the proceeding sections on findings.

## FINDINGS

### Exposure of Chimanimani in Manicaland province to climate change

The study focused on Chimanimani district geographically located in Manicaland province that is frequently exposed to disaster risks of flooding. The history of flooding is not new in this region. Mozambique being a coastal nations is susceptible to weather related disasters for a long time for instance in 2000, Christie and Hanlon, (2001) reported that around 4000 people were affected by floods. The study area Chimanimani suffered the effects of Mozambique's climatic conditions. The district is exposed to frequent drought and dry spells coupled with aridity of the soil. In 2019, Chimanimani was hit by the cyclone Idai that emanated from Mozambique. It was reported that this was the one of the worst tropical cyclones on record to affect Africa and the Southern Hemisphere. The long-lived storm caused catastrophic damage, and a humanitarian crisis in Mozambique, Zimbabwe and Malawi, leaving more than 1,500 people dead and many more missing.

According to the Cyclone Ida Report by (IFRCS, 2019), the cyclone affected more than 270 000 people leaving 341 dead and many others missing. Further, 17 608 households were left homeless, 12 health facilities damaged, water, sanitation and hygiene infrastructure were damaged, 139 schools were affected, 33 primary schools and 10

secondary schools were temporarily closed, and 9 084 learners were affected.

Zimbabwean government's disaster response effort has been led by an Inter-Ministerial Committee on Civil Protection and involved the army in rescue operations and delivering emergency food and medicines to affected areas surrounding Chimanini and other locations. Not only the state was involved in operations but domestic response to the disaster was equally prominent. This involved, local communities, individuals, CSOs and corporates. The responded acted almost promptly to the devastation of Cyclone Idai with assistance of food, clothing, water, transport and offers to help in rescue operations. Dozens of appeals and initiatives were launched immediately after the cyclone (ZRCS, 2019).

In this study, the author visited the affected community in Chimanimani area accompanied by NCDT staff to learn lessons and experience of the climate change as driver affecting the community. The ultimate goal was to learn the role of the local leadership plays in Disaster risk reduction activities in the community. The first point was at a community centre called Participatory Organic Research and Technology centre (PORET) located in Chimanimani district.

### Local knowledge on the management of the environment, climate change and its consequences

Climate change and Environment from local perspective understanding. The community has had local knowledge and experience of climate change, its causes, effects and impact on their livelihood. In the group discussions and focused groups, the community have adequate knowledge about climate change through training that were offered by stakeholders in the area. These included; PORET, Tsuro and Agriculture Extension Officers. Locally climate change is referred to as (Ishanduko ya chongi) literally meaning changing climate.

As part of collaboration with other institutions, NCDT in partnership with PORET trained communities on climate change and ecosystem management in the semi-arid area of Chimanimani. PORET specializes mainly on agroforestry and permaculture. NCDT brought in component of climate change and ecosystem management.

### *Local understanding of climate change*

A discussion on climate change led by NCDT brought up local understanding of signs of climate change by local communities. The focused group discussion meeting with in Chaseyama had this to say as the evidence of climate change observed in the area to include the following:

1. Locally Climate change is referred to as (Ishanduko ya chongi)
2. Weather has become unpredictable and erratic
3. Shortage of water for agriculture and domestic use has been observed
4. Drying of bore holes and streams
5. Temperature is changing either too hot or too cold
6. Shifting of rainy seasons, commencement and ending of seasons temperature and rains
7. Flooding is on the increase in the area
8. Siltation of rivers in the area and due to erosion from the upland
9. Prevalence of diseases such as malaria on the increase

One member stated evidence of changing climate that… "in the past we used to receive rainfall in October but the we receive it in November , December even in January, as a result we can't effectively plan our farming activities.."

### *The understanding of Causes of climate change by the community*

The general understanding of the local community is that climate change is an act of God as the creator of the earth. Other causes include:

1. Overpopulation of people causing pressure on the forest products
2. Wild fires as they clear the land and hunting
3. Deforestation (cutting of trees for various uses e.g. construction, energy for cooking
4. Cultural beliefs on the preservation of natural resources local community have

defaulted by cutting trees from reserve forests locations
5. Bank cultivation and cutting of trees around streams and land increases the emission of water vapour which is a green gas.

### *Implication of climate change on the community*

Climate change has affected the community in terms social, economic, and environment sphere. Based on the evidence given above. Low rainfall and dry spells and drought has resulted into low crop yield of maize a staple crop, even drought tolerant crops such as millet and sorghum are affected, limited pasture and water for livestock such as goats. Other indirect effects of climate change on the community include:

1. Early Marriages, divorce and Prostitution on the increase as a source of livelihood
2. Diseases and ,malnutrition
3. Loss of indigenous seeds and tree species, taken as an alternative source livelihood
4. Loss of biodiversity
5. Community social and economic Problems
6. Poverty
7. Hunger
8. Diseases prevalence
9. Death of livestock due to lack of water and pasture
10. Drying of water sources including the Odzi river and other
11. Conflicts human and animal for water and pasture, crops
12. Strong winds including cyclone Idai that ravaged the area in 2019
13. Gulley's and erosion negatively affect the environment
14. Floods and drought, dry spells being experienced in the area destroying livelihood assets for the community e.g crops, houses and sources of water.

### Climate change and Environmental Management

The Environment and its resources is of great value to the people of Chimanimani. The land in Chimanimani (Hot Spring Area) is generally arid with little vegetation mostly sparsely distributed shrubs. The level of environmental degradation in Chimanimani district is high. The land is heavily deforested due to utilization of fire wood and timber trading with the neighboring Mutare City. The community through training at PORET Training Centre has been involved in land reclamation of the gully through stone pitching.

"This gully two years ago was very deep I could stand inside but with the interventions of using stones and sand banks, the gully is now completely buried" (Response from a Community member).

The approaches on sustainable environmental management being promoted in the area is the Ecosystem Based approach. The community is prepared and encouraged to use their own local knowledge and skills in adapting to climate change effects and build local resilience. However, innovative ways of addressing land degradation, deforestation, sparsely vegetation areas, and water shortages are required. This need to be implemented at a much bigger scale to help improve the environment and ecosystems.

### *Ecosystem based adaptation to climate change and environmental management*

NCDT work in Chimanimani is also centered on ecosystem-based approach to Climate change adaptation and disaster risk reduction. There are also other environmental institutions in the area such as Environmental Management Agency (EMA), Forestry department, Wildlife department and other civil society organizations working on biodiversity conservation and ecosystem management in Chimanimani.

Interventions on environmental management of the ecosystem are being implemented by the Participatory Organic Research Training (PORET) centre, an ecosystem focused Civil Society Organization (CSO) working in Chimanimani since 2010, (Julius Piti, CEO and Founder of PORET). In addition, PORET and TSURO main areas of interventions are centered on conservation agriculture, agroforestry/permaculture and bee keeping. Issues of ecosystems management are being mainstreamed into their core areas of work.

Planting of indigenous tree species including fruit crops is one of the ways the forest is being conserved while empowering the

community. The tree seedlings are used to curb deforestation in the district. As for Ms. Mazungunya an indigenous tree nursery farmer had this to say. ".I sell seedling to the CSOs to give local communities to plant in their villages. In the year 2020, I sold over 2000 local tree species to CSOs working in conservation of nature". This was one of the community success stories.

A beneficiary from the tree planting had this to say….. "we have learnt that planting local trees is good to prevent heavy winds from blowing off our roof in times of heavy rains like was the situation when cyclone Ida happened in 2019, this was because our community surrounding is bare with no trees to hold the strong winds".

### Local Actor's Role in Localizing Climate Change Actions, Planning to Address Climate Change

The community and CSOs in Chimanimani district are working on climate change adaptation and mitigation strategies with the view to build resilience against disaster risks related to climate change. Flooding and dry spells and drought have been identified as the main ones in the area. The Cyclone Idai of 2019 has left its trails which will be not easily forgotten by the local communities (Report of 2020 by Chimanini Rural District Council).

### *Community participation in environmental management PORET Centre.*

PORET is one of the key actor that has been playing a critical role in capacity building in climate change adaptation and mitigation strategies. The Participatory Organic Research Training Centre is located in the outskirts of Chimanimani district. It was established for agroforestry and permaculture demonstrations to benefit the surrounding communities. At the time of the research, PORET was taking care of vegetation within the center. It is serene natural environment whose vegetation is ecologically management. The Centre is specialized in offering training using the community based approach. The catchment for interventions includes over 34 villages. Members attend training at the Centre for a period of 4 Months of intense training that includes both theory and practical application on environmental management and ecosystem restoration. Both male and female are considered during the training and emphasis is equally placed on the youths as they are the seen as the future of Chimanimani. "The two weeks training at PORET has taught us a lot of things we didn't know such making sand trenches for harvesting and storing water underground. We can then use water later after the rain season." Response from a Community member

### *Climate change resilience activities Offered by NCDT and PORET*

In 2021, NCDT and PORET conducted a baseline in this area in 2021 where they identified conservation and livelihood gaps to be addressed at household level for the benefit of ecosystems and people. Water shortages remain a critical challenge in developing these concepts to yield high positive impact to communities with significant livelihood and ecosystem changes. From the fieldwork activities, the following are some of the interventions being implemented:

1. Sustainable agriculture, smart farming
2. Agroforestry using indigenous tree species
3. Underground water harvesting using trenches
4. Mulching of plants
5. Energy efficiency using tsotso stoves
6. Training in growing of drought tolerant crops
7. Land reclamation for gully fixing
8. Beekeeping as part of nature conservation and preservation of the forest.

PORET has been collaborating with other CSOs in the area Julius Piti. CEO and Mr. Kumbirai Dube training Officer at PORET. The Nature Conservation and Development Trust (NCDT) of Harare. According to NCDT CEO, Mr. Togarasei Farakayi. Through the facilitation of NCDT and PORET and other CSOs, the community was trained to identify activities relating to climate change, natural resources conservation, watershed management, and beekeeping among other activities

### *Support for the community to address climate change and its consequences*

The focus was to share academic knowledge that would support the community in their plans to address climate change and its consequences in their plans. The Expert point of view is that the NCDT project in general is a very positive project combining conservation and while improving food security at household level. It must be noted that before NCDT interventions, the community had already some beekeeping activities though at small scale level with few bee hives in place. Capacity building is work in progress and form part of the NCDT programme where bee keeping is merged with ecosystem management, climate change adaptation, disaster risk reduction and resilience livelihoods.

Currently, capacity building is work in progress and form part of the NCDT programme where bee keeping is merged with ecosystem management, climate change adaptation, disaster risk reduction and resilience livelihoods. The beekeeping project may need to more consultation for technical guidance on hive security and maintenance. Mulungushi University in Zambia where the Expert works has vast experience in beekeeping and processing. Project can benefit from activities through bee keeping. The expert will engage his counterpart experts at the University to share knowledge and skills. These included introducing bee yards where more hives can be packed rather than the current state where the hives are scattered all over the place.

The NCDT bee keeping project should also consider establishing value addition process at community level as well as out-grower schemes for bee keepers. This is the model Mulungushi University is using in honey collection. Lastly, funds allowing, the community should think of an exchange visit to Zambia to interact on bee keeping, processing and marketing at Mulungushi University. The university sells its honey to Shoprite stores nationwide.

NCDT is currently looking for funds complete the construction of the hives and setting up of the targeted apiaries. Then it will move on to value addition, out-growers scheme and improve on the honey processing center facilities. Indeed, the exchange visit will be helpful for further technical guidance and knowledge sharing as we build towards this.

### *Evidence highlighting the exchange of knowledge for effective solutions to address climate change*

Climate change activities and interventions are being implemented by the communities to adapt to effects of climate change and reduce the risks associated with it. The beekeeping project is being implemented in the area as a way of reserving the forest on the mountainous part of Chimanimani.

### Proposed Solutions and Strategies for resilience

The following strategies are recommended by the community members during the focused group discussions meeting:

1. Afforestation was identifies as an important activity that can make the community resilient to flooding and cyclones in the future.
2. Introduction of communal grazing land and sustainable management of pasture in Chimanani
3. Introduction of Indigenous Knowledge System in the management and preparedness to climate related risks and hazards. Traditional early warning interventions should be revised
4. Development of nutritional gardens for each households this would reduce malnutrition
5. Water harvesting techniques including roof top and rain water harvesting through trenches
6. In future there is need to consider to consider drilling of boreholes to supply
7. Use of clay stoves (Tsotso stove) less wood but retains heat for some time

### BEEKEEPING COMMUNITY PROJECT IN NORTH OF CHIMANINI FOREST MARY WATERS WARD 16

The community in this area is working on a beekeeping project. The Leader of a community reported that… “with support

from NCDT our community received 200 hives that have been set-up. They have already harvested some honey". The project is being supported by NCDT as part of the conservation of the forest while empowering the community with a livelihood and income generating activity while conserving the forest and earning income from selling of honey.

NCDT is working with local villagers in Bumba, Nthedziwa and Chimanimani by sponsoring this project. The leader beekeeper and NCDT community liaison focal person Mr. Clever Garirofa had this to say… "under our community beekeeping project we are focusing in the process manufacturing 5000 beehives to be distributed to the communities as a conservation strategies of the mountainous forest of Chikukwa in Chimanimani district.

## CONCLUSION

Locally, the community has been aware of the causes, effects and have been learning methods and strategies of adaptation and disaster preparedness against climate change effects they are being faced with. Key intervention is capacity building training being offered by NCDT, other CSOs, PORET, TSURO among others have built the local capacity in the community for adaptation and resilience through partnership in training with NCDT. Forests do not only act a wind breakers from strong winds but also are used for beekeeping. Sustainable agriculture production is yet another area being used to efficiently use the limited moisture content. Further, the community has been practicing water harvesting technique through infiltration and tranches digging for underground water recharge system.

## GENERAL RECOMMENDATIONS

1. Community capacity building training should focus more on enhancing livelihood activities while conserving the environment and adapting to climate change effects such as beekeeping.
2. Climate change interventions should integrate indigenous knowledge within the community while using the modern scientific approaches e.g. early warning systems
3. The top priority intervention required by the local community is provision of water through boreholes for both domestic and irrigation of nutritional gardens.
4. Strong winds including cyclones could be addressed if the community could plant trees to act windbreakers as well as realizing agroforestry products.

## Recommendations for funding local CSOs' adaptation and resilience to climate change

The international support for local community (CSOs) interventions is very critical and so is local community participation in DRR. Therefore, International Missions should focus on directly funding local CSOs to work with the vulnerable communities. CSOs such as NCDT and PORET have the technical capacity and understand the local community context and environment of which the local community operates. International missions should be there to provide oversight, accountability, evaluation and monitoring.

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