

# STRIVING FOR RESILIENCE

LESSONS LEARNED FROM EXPERIENCES OF  
DROUGHT AND CYCLONE IDAI IN ZIMBABWE



**trōcaire**

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**Cover image** A farmer presents her raised bed gardens and composting techniques in Matobo District, Zimbabwe



Raised garden beds  
Matobo  
Zimbabwe

# EXECUTIVE SUMMARY

Achieving positive impact while working in the field of resilience is a challenge faced by practitioners across the globe. While resilience aims to improve the ways in which individuals, households, communities, civil society and institutions within a system have increased their ability to prepare withstand and recover from adversity, shocks and stresses (such as floods, storms, drought, food insecurity and economic instability); we cannot always determine when and where these impacts will occur. Therefore, when natural or manmade hazards do occur in areas where resilience activities take place, it is imperative to follow up with vulnerable communities to improve learning about the experience.

As a result of the El Niño induced drought (beginning in November 2018) and the devastation of Cyclone Idai (March 2019) which affected communities across Zimbabwe, Trócaire undertook a study in August 2019 to gain greater insight on the impact their resilience work in select communities of Matobo and Bikita Districts. The study does not present the full story of what occurred throughout Zimbabwe, but it does highlight some lessons learned along with providing recommendations to improve resilience programming in the future. The lessons learned from this paper are described in greater detail throughout the work, with major findings highlighted below:

- Households in Matobo and Bikita Districts, in general, have higher capacity to prepare for drought than cyclone/flood due to their familiarity with the hazard.
- Most households taking part in the use of small grains and agroecological practices are food secure, even throughout drought period. Furthermore, they appeared to have higher capacity to prepare and cope with the drought compared to non-programme participants
- There is a paradigm shift occurring throughout Matobo and Bikita Districts that maize is not needed as the only household crop. Part of this could be attributed to failure of maize as a result of perennial mid-season dry spells and droughts, a general embrace from agricultural extension officers for agroecological techniques and promotion of small grains, much improved from previous years. Additionally, the enabling policy framework which promotes agroecology and small grains guides the government extension staff is a major component of this
- There is a better understanding and good uptake of water conservation techniques. One reason for this could be that these techniques are presented in a participatory way, through learning centres and lead farmers. This is greatly improved from the colonial past when these techniques were mandated in communities who showed little interest in implementing something forced upon them. The communities have had the experience of their water bodies silting
- There is a general understanding of the importance of early land preparation (pot holing, mulching). In Bikita, farming is made easier because labor is spread out across time, rather than piling all field work at the onset of the rains.
- Some agro-ecological practices, promoted by Trócaire, such as pot holing, contour trenches and runoff pits helped build resilience to both cyclone and drought
- There is an increased awareness among the farmers in both Matobo and Bikita on the need to embrace agroecological practices (potholing, mulching, use of cover crops, organic manuring, use of bottle drips, infiltration trenches) that promote moisture retention.

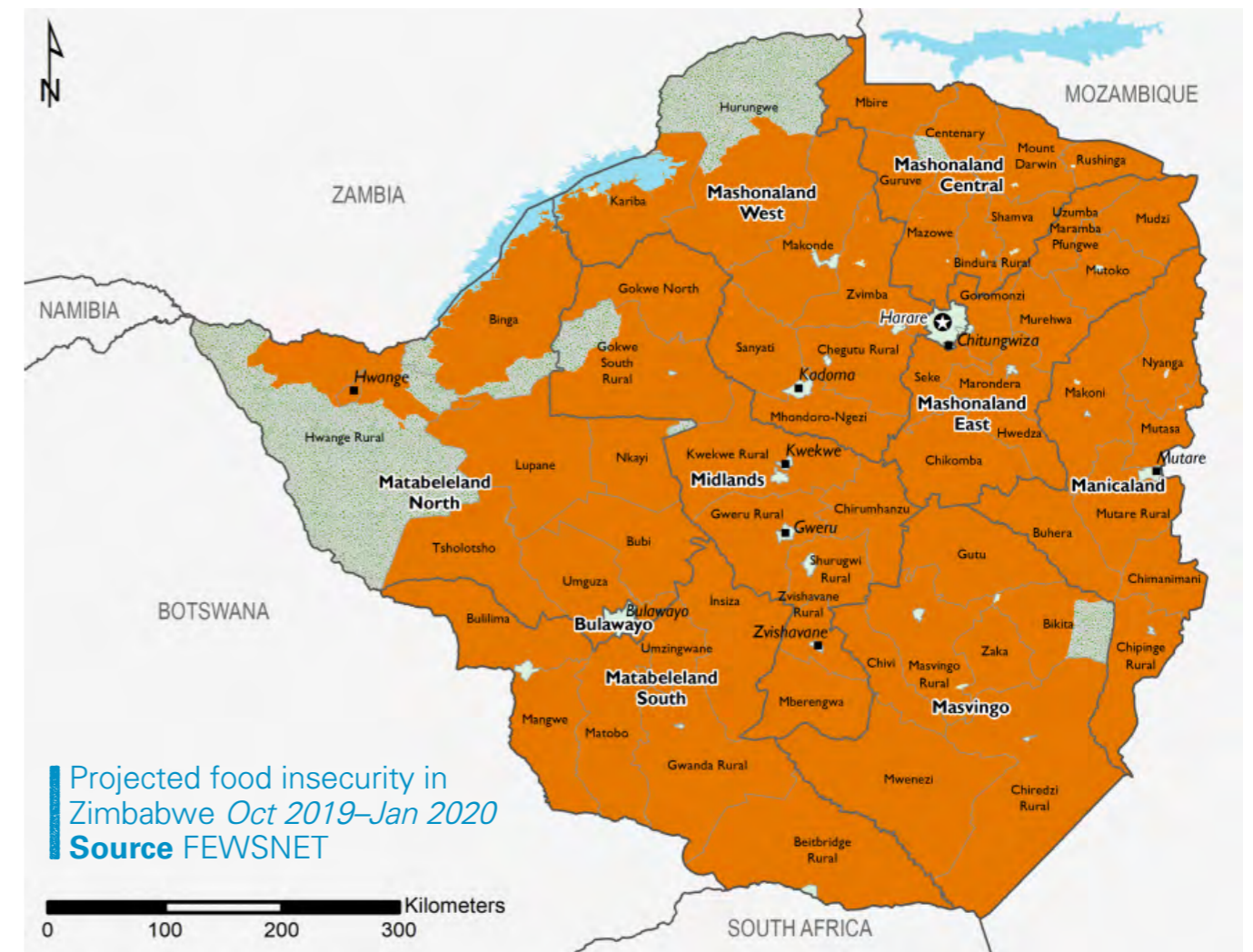
# ACRONYMS

- CPU** Civil Protection Unit
- DRR** Disaster Risk Reduction
- Eba** Ecosystem-based adaptation
- Eco-DRR** Ecosystem-based Disaster Risk Reduction
- FEWSNET** Famine Early Warning Systems Network
- FGD** Focus Group Discussion
- KII** Key Informant Interview
- NGO** Non-Governmental Organization
- UNOCHA** United Nations Office for the Coordination of Humanitarian Affairs
- ZimPro** Zimbabwe Project Trust
- ZimVac** Zimbabwe Vulnerability Assessment Committee

## PURPOSE

This paper is intended to contribute to increased learning for Trócaire and implementing partners - Caritas Bulawayo, Caritas Masvingo, Dabane Trust and Zimbabwe Project Trust (ZimPro). It aims to provide insight relating to the impact of ongoing resilience building activities in target communities of Matabeleland South and Masvingo Provinces as a result of the recent drought and cyclone events in 2019.

Learning derived for this paper and an accompanying piece on resilience in Malawi were developed to provide recommendations for current and future resilience building programmes in these countries and globally (where relevant).



## Background

Zimbabwe has experienced various natural and manmade shocks and stresses throughout its history. In 2019, the country faced a series of natural disasters. In addition, the ongoing economic crisis has resulted in a rising inflation rate as of April 2019. This has significantly damaged overall consumer spending power. High import demand, especially for food items such as maize meal and the importing of electricity further aggravated the situation. Affordability of basic food items is a real issue, forcing vulnerable groups to resort to negative coping strategies. This underlying challenge, along with the natural hazards of the El Niño induced drought and Cyclone Idai (described below) has put Zimbabwe in a position of high need for humanitarian assistance from government and the international community.

### El Niño-induced drought

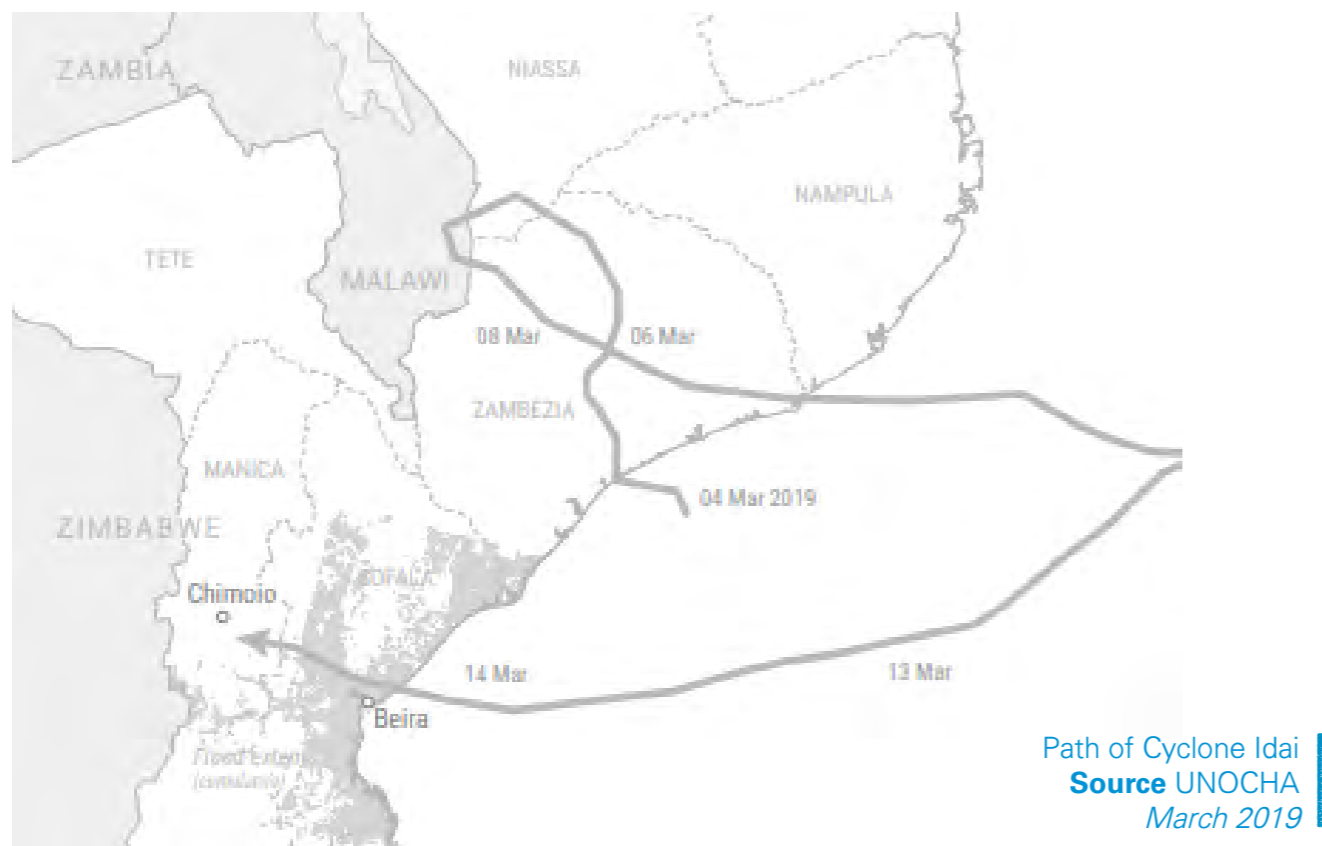
While Cyclone Idai grabbed many international headlines, this was a shock sprung upon an

already challenged population. The cyclone occurred in the middle of the El Niño induced drought which is still in effect as of publication of this document (September 2019). The drought began in November 2018 and has resulted in less than 50% of average annual maize production and a depletion of the national grain reserve. The 2019 Zimbabwe Vulnerability Assessment Committee (ZimVAC) estimated that 5 million people in the rural areas are food insecure. Of this population, further analysis estimates that over 3.5 million people (roughly 38% of the rural population) need urgent humanitarian action between October to December 2019.<sup>1</sup> The entire country has felt the impact of the drought situation, with every province receiving a rating of “crisis” relating to their food insecurity.

### Cyclone Idai

Cyclone Idai made landfall on 15 March 2019 and

<sup>1</sup> 2019-2020 Humanitarian Appeal Revision: Zimbabwe, Republic of Zimbabwe



became one of the worst tropical storms to befall Southern Africa, with Mozambique, Malawi, Madagascar and Zimbabwe all effected. While Zimbabwe did not have the overall death toll or number of people displaced as Mozambique, Cyclone Idai did impact the eastern part of the country; the provinces of Manicaland, Masvingo, Midlands and Mashonaland East all experienced heavy wind, rains, flooding and landslides. 270,000 people were affected and over 50,000 were displaced. Homes and household items were both washed away and destroyed. In addition, the agriculture sector, which makes up most of the economy in the four provinces felt significant damage: with numerous damages to crops, livestock and agricultural infrastructure.

## Introduction

Trócaire, as an agency has made a commitment to resilience programming across its four goal areas. Resilience is referred to specifically under Goal Area 2 (Resource Use and Rights) and Goal Area 4 (Humanitarian Preparedness and Response). In Zimbabwe, Trócaire, along with implementing partners Dabane Trust, Caritas Bulawayo, Caritas Masvingo and Zimbabwe Project Trust (ZimPro) have been working in Matobo and Insiza (Matabeleland South Province)

and Bikita and Gutu (Masvingo Province) districts of Zimbabwe on livelihoods and resilience building programmes dating back to 2017. As with Trócaire's other resilience programmes in Zimbabwe and throughout Africa, the aim of the programming is to ensure that vulnerable rural communities have resilient livelihoods and are food secure. A resilience approach is taken to ensure that individuals, households, communities, civil society and institutions within a system have increased their ability to prepare for, withstand and recover from adversity, shocks and stresses (such as floods, storms, drought, food insecurity and economic instability). Fostering improved learning around the topic of resilience often presents a challenge due to the fact that in order to truly see if communities' conditions are improving, this often cannot be understood until another shock or stress occurs in the target communities of the programming. More so, as each challenge faced by a vulnerable community is not the same, resilience practitioners must develop means to truly understand the impact of programming activities. However, when disasters do occur in resilience programme areas, it is imperative to follow up with target communities to see if livelihoods and overall conditions have been impacted in a negative or positive way.

With this background in mind, Trócaire and implementing partners put together a study team comprised of staff from both agencies to visit communities impacted by the recent drought and cyclone events and interact with community members and other stakeholders to gain a greater understanding about:

- 1 The impact that recent climatic shocks and stresses had on the communities, particularly the most vulnerable groups such as women, children, elderly and persons with disabilities
- 2 Strategies undertaken by communities to prepare for, respond to and recover from the drought and cyclone events
- 3 The impact (if any) Trócaire and partner resilience programme activities had in target communities for beneficiaries to prepare for, respond to, cope and recover from the drought and cyclone events.

This paper provides the findings of a learning trip conducted from 19–23 August 2019. Due to the limited time of the trip, this paper was not able to cover all the areas within Trócaire and partners' current programme area. The intent of this document is to provide a snapshot of several communities impacted by the events in Matobo (drought) and Bikita (drought and cyclone) districts, along with presenting some programming recommendations on how to address specific challenges that were highlighted.

## Overview of study area

The study team met with leadership and community members representing Wards 8, 9, 10, 11 of Matobo District (Matabeleland South) and Wards 12 and 22 of Bikita District (Masvingo Province). Communities located in Matobo experienced drought while communities in Bikita were impacted by both the drought and Cyclone Idai. Trócaire and partners are implementing the Resilience and Sustainable Livelihoods Programme in these areas, the programme is described in the section below. In addition to receiving inputs from the Resilience and Sustainable Livelihoods Programme, project beneficiaries in Bikita District also received assistance from Trócaire and partners in April to June 2019 as part of the Cyclone Idai response.

# RESILIENCE PROGRAMMING

## Resilience and Sustainable Livelihoods Programme

The Resilience and Sustainable Livelihoods Programme is a four-year (March 2017 – December 2021) initiative funded by Irish Aid with the goal of empowering men and women in Masvingo (Bikita and Gutu districts) and Matabeleland South (Matobo and Insiza districts) Provinces to engage in sustainable and resilient rural livelihoods and live free from gender-based violence. Trócaire works alongside implementing partners Caritas Bulawayo, Caritas Masvingo, Dabane Trust, Zimbabwe Project Trust (ZimPro) and technical partners Fambidzanai Permaculture Training Centre and Zimbabwe Environmental Law Associated (ZELA). Key outcomes of the project include:

- Strengthened farmers' committees with equitable and meaningful participation of women are engaging with local authorities on rights to utilisation and joint management of natural resources
- Women and men farmers are sustainably managing water catchment areas and utilising water for crop production
- Women and men farmers are incrementally applying agroecological practices in agriculture
- Women and men farmers are growing and utilising diversified traditional food and seed varieties
- Women and men farmers linked to formal and informal markets in order to generate income
- Promoting an enabling policy environment for smallholder farmers



Focus group discussion  
with women farmers  
Bikita District  
Zimbabwe



Vermicompost at a household in Matobo. Worms are also sold to fishermen for added income Zimbabwe

## Study Criteria

Study criteria were developed by the Trócaire team and is divided into the following three categories:

### Strategies for Resilience

Examines the actions and activities that communities undertook before, during and after the flood/cyclone event. This includes both positive and negative preparedness and coping strategies. Some of these activities were a component of ongoing Trócaire programming (described above) and others were undertaken within communities themselves or involved the government or other NGO actors.

### Factors for Resilience

Examines the enabling factors that allowed the communities to undertake positive strategies to absorb and adapt the impacts of the flood/cyclone event.

### Adapting for Resilience

Examines the actions identified by communities that will or should be continued to both recover from the flood/cyclone events and to better prepare for future events. This category aims to capture key learning and identify anything that could be done differently in the future.

## Study Methodology

To inform this study, a study team from Trócaire (3 staff), Dabane Trust (2 staff), Caritas Bulawayo (2 staff) and Caritas Masvingo (2 staff) used the methods listed below to collect information. Field work took place between 20 – 22 August 2019.

### Desk Review

Documents from the Resilience and Sustainable Livelihoods Programme (mentioned above) were reviewed along background descriptions for each community. The 2019-2020 Humanitarian Appeal for Zimbabwe, the new National Agricultural Policy Framework of Zimbabwe: 2019 - 2030, along with Situation Reports for the drought and cyclone were access via Relief Web were consulted for the development of this document.

### Direct Observation/Transect Walks

The study team conducted transect walks and household visits of programme participants to observe notable features inside each community including various agroecological activities

households and communal areas are practising. During these visits, short, informal conversations were held with community members to provide more information.

### Focus Group Discussions

The study team conducted a total of 8 Focus Group Discussions (FGDs) with community members from the three study areas, with a total of **68 participants, 43 women and 25 men.**

Focus Group Participants	Number of Participants	Location
Women	10	Matobo District
Men	6	
Watershed Management Committee	6 (4M, 2F)	
Non-programme participants	5 (4M, 1F)	
Mixed group – programme participants	11 (2M, 9F)	Bikita District
Women	5	
Men	9	

### Key Informant Interviews

A total 8 people were interviewed (focusing on government focal points and community leaders).

Community Members & Other Stakeholders Interviewed	Number of Interviews
Trainer at Agroecology Center – Matobo	1 (F)
Crop and Livestock Officer – Bikita (male)	2 (M)
Lead farmers – Matobo, Bikita	2 (1M, 1F)
Civil Protection Officer	1 (M)
District Administrator – Bikita	1 (M)
Ward Councilor – Bikita	1 (M)
<b>Total Interviews</b>	<b>8 (6M, 2F)</b>

### Debrief with Study Team and Trócaire Zimbabwe

Following each day of data collection, the study team held debrief sessions to summarize the key learning areas and develop a common understanding of the context. On 23 August 2019, Trócaire staff who participated in the study shared their initial findings with Trócaire Zimbabwe.

# FINDINGS



**Table 1 Preparedness and Coping Strategies – Drought**

District	Before June–October 2018	During November 2018–September 2019
Matobo	Use of agroecological methods for water and soil management including infiltration trenches, contour ridging, pot holing, mulching and manuring*	Community uptake in a different number of enterprises at household level through trainings gained from Learning Centres – Enterprises include container gardens, mandala gardens, use of A Frames and nursery production, collection of grass for hay bales – livestock feed*
	Emphasis on small grain production (pearl millet, finger millet and sorghum)*	Awareness campaigns by lead farmers to promote small grain amongst non-programme participants*
	Use of Indigenous Knowledge to predict coming drought (identifying flowering acacia tree)*	Use of plastic bottles for slow drip irrigation in household gardens – leads to increase soil moisture
	Taking up market gardening for increased income	Illegal gold mining increases
	Growing of crops in home gardens, including raised container beds*	Food stressed families reduce number of meals per day
	Selling bricks made through brick molding – increased deforestation occurs to fuel kilns	
Bikita	Use of agroecological methods for water and soil management including infiltration trenches, contour ridging, pot holing, mulching and manuring*	Collection of grass for hay bales – livestock feed*
	Emphasis on small grain production (pearl millet, finger millet and sorghum)*	Awareness campaigns by lead farmers to promote small grain amongst non-programme participants*
	Taking up market gardening for increased income	Theft of livestock and grain – typically by youth
	Growing of crops in home gardens, including raised container beds*	Receiving remittances from South Africa
	Brewing of traditional beer for income generation – oftentimes maize flower is purchased with profit	Transactional Sex for food and supplies amongst community members
	Seed saving of small grains occurs	
	Selling bricks made through brick molding – increased deforestation occurs to fuel kilns	
<b>KEY</b> <i>positive preparedness or coping strategy</i> <i>negative coping strategy</i>		

\* involved Trócaire inputs for resilience programmes

**Table 2 Preparedness and Coping Strategies – Cyclone Idai**

District	Before 4 years – 1 day before	During 1 day prior to the event – 3 weeks following	After 3 weeks following – August 2019
Bikita	Use of agroecological methods for water and soil management benefitted cyclone preparedness, such as contour ridges, infiltration pits and pot holing*	Neighbors assisted each other during the immediate response and early recovery, namely through provision of housing to those displaced, food and cooking utensils	Households in need received cement for reconstruction of houses and other structures from government, churches and NGOs
	Use of small grains (pearl millet, finger millet, sorghum) proved to be more water resistant than maize*	Ward councilors and village heads worked with community groups on immediate needs assessment, reporting to Civil Protection Unit (CPU) and NGOs	
	Poor natural resource management, such as deforestation for fuel	Social media provided safety messaging and updates	
<b>KEY</b> <i>positive preparedness or coping strategy</i> <i>negative coping strategy</i>			

\* involved Trócaire inputs for resilience programmes

## Strategies for Resilience

During the FGDs and KII, participants from the communities were asked to describe their experience with the drought and cyclone events and to identify specific actions they took to prepare for and cope with the disasters. When discussing the drought (in Matobo and Bikita), FGD and KII participants were asked to describe their experience before and during, as the drought was still occurring during the time of the study. For Cyclone Idai (in Bikita), respondents were asked to describe their experience before, during and after the event occurred. **Table 1** and **Table 2** present a summary of the actions described by the communities. Contents of these tables contain both *positive* and *negative* coping strategies which are highlighted below.<sup>1</sup> *Positive* strategies were identified as actions that were undertaken by most of the community that did not have any adverse effects in the short- or long-term on people’s mental or physical wellbeing, income or assets. Additionally, these are strategies and actions that did not pose a significant threat or negative impact on the natural environment. *Negative* strategies are considered the opposite and could have caused short- or long-term harm to people’s mental or physical wellbeing, income or assets in addition to damaging the natural environment.

**Table 1** and **Table 2** highlight several notable trends across the two districts:

- Communities in Matobo and Bikita Districts are more familiar preparing for and coping with drought, which occurs more frequently than cyclones and floods. Therefore, there are more strategies associated with drought. Similarly, the Resilience and Sustainable Livelihoods Programme was designed to build resilience to food insecurity and drought, flooding and storms were not part of the strategy, hence fewer programmes activities associated with cyclone and flood mitigation.

- While many agroecological techniques were practiced at the household and community level, techniques which emphasised water

<sup>1</sup> There were many other activities identified during this process including: BEFORE: conducting piece work in neighboring communities – purchase grain with income, selling of chicken and goats; DURING: Conducting piece work in outside communities for grain, taking livestock to neighbouring communities for pastureland, gathering natural fruits, purchase of supplies from informal markets, selling of chicken and goats, selling excess worms from vermicompost to fishermen

conservation emerged as the techniques most emphasised in FGDs and KIIs.

- While there were some negative actions that occurred, prior to drought, negative coping strategies increased dramatically during the food shortage, speaking to the high level of vulnerability of many households throughout the two districts.

- In addition to promoting water retention and being more resilient toward droughts, crops grown using the “pot holing” method were found to have stronger root formation which allowed them to withstand strong winds. Following Cyclone Idai, many of these crops survived and were harvested.

- An unforeseen benefit of Cyclone Idai was that the heavy rains which came with the event allowed for wilted sorghum crop to resuscitate and mature.

- Conservation agriculture and use of small grains (pearl millet, finger millet and sorghum) ensures that there is at least some harvest, even during period of little rainfall. Farmers in Bikita district were asked about their yields from the most recent harvest. The following results indicate that the average household was food secure for 5 – 6 months and were much better off than households who grew only maize:

Crop produced x 50kg bag	Average # of bags of FGD respondents	Average total kg of FGD respondents
Round Nuts	4.33	216.67
Ground Nuts	4.44	222.22
Pearl Millet	7.67	383.33
Finger Millet	5.00	250.00
Sorghum	5.22	261.11
Average per cereal (pearl millet, finger millet, sorghum)		298.15
Average kg of cereal per person/HH		59.63
Average kg of cereal per person month		4.97

- It was clear, through conducting the FGDs with non programme participants in Matobo, that programme participants were more prepared for the drought. While this study cannot offer a comprehensive answer if the resilience

**Table 3** Positive Preparedness or Coping Strategies

Strategies	Enabling Factors
<b>Use of agroecological methods for water and soil management including infiltration trenches, contour ridging, pot holing, mulching and manuring</b>	<ul style="list-style-type: none"> <li>· Learning centres within communities allow for transfer of knowledge and skills</li> <li>· Cross learning occurring, even from communities located far away</li> <li>· Acceptance for cross learning between neighbours</li> <li>· Buy-in from crop and livestock officers from government</li> <li>· Water through renewable energy systems</li> <li>· Availability of raw materials - Crop residue and wild sources</li> <li>· Use of everything in the production chain as practiced under agroecology</li> </ul>
<b>Emphasis on small grain production (pearl millet, finger millet and sorghum)</b>	<ul style="list-style-type: none"> <li>· Understanding of the failure of maize over the past few years</li> <li>· Presence of learning centres which utilized control plots</li> <li>· Lead farmer approach</li> <li>· Shifting of mentality about the palatability and health benefits of small grains in comparison to maize. These messages were shared with farmers during the annual district agricultural shows and the national food and seed festival</li> <li>· Buy-in from crop and livestock officers from government</li> </ul>
<b>Use of Indigenous Knowledge to predict coming drought</b> <i>e.g. identifying flowering acacia tree</i>	<ul style="list-style-type: none"> <li>· Traditional knowledge in communities of Matobo District and Bikita</li> <li>· Facilitation of sessions on integrating indigenous and scientific knowledge by Trócaire and implementing partners</li> </ul>
<b>Taking up market gardening for increased income</b>	<ul style="list-style-type: none"> <li>· Learning centres within communities allow for transfer of knowledge and skills</li> <li>· Flexibility to utilize different monetary sources including South African Rand, bartering and Eco cash</li> </ul>
<b>Growing of crops in home gardens, including raised container beds</b>	<ul style="list-style-type: none"> <li>· Learning centres within communities allow for transfer of knowledge and skills</li> <li>· Low labour need of gardening techniques emphasized such as Container gardens.</li> </ul>
<b>Collection of grass for hay bales – livestock feed</b>	<ul style="list-style-type: none"> <li>· Prevalence of grasses and fodder from small grain crops blended with wild leguminous species.</li> <li>· Agroecological training which stresses reuse of all materials</li> </ul>
<b>Awareness campaigns by lead farmers to promote small grain production amongst non-programme participants</b>	<ul style="list-style-type: none"> <li>· Cross learning occurring, even from communities located far away</li> <li>· Acceptance for cross learning between neighbours</li> <li>· Buy-in from crop and livestock officers from government</li> <li>· New National Agricultural Policy Framework which contains information about the benefits of agroecology</li> </ul>
<b>Use of plastic bottles for slow drip irrigate in household gardens – leads to increase soil moisture</b>	<ul style="list-style-type: none"> <li>· Agroecological training which stresses reuse of all materials and recycling of water.</li> <li>· General understanding of communities on the importance of soil moisture and water conservation during times of drought and erratic rainfall patterns</li> <li>· Limited water availability that push communities to try water conserving options.</li> </ul>
<b>Brewing traditional beer for income generation</b> <i>(often maize flour is purchased with profit)</i>	<ul style="list-style-type: none"> <li>· Presence of a viable market for the product</li> <li>· Brewing skills are innate within the communities for generations</li> <li>· Profitability of brewing vs. selling actual maize</li> </ul>

programme is one main reason for increased resilience, the table below presents the positive coping strategies practised across both districts and those which are associated with the project:

Time period	# of Positive Coping Strategies	# Associated with Resilience Programme
<b>Drought</b>		
Before	7	5
During	3	2
<b>Total</b>	<b>10</b>	<b>7</b>
<b>Cyclone / Flood Event</b>		
Before	2	2
During	3	0
After	1	0
<b>Total</b>	<b>6</b>	<b>2</b>

### Factors for Resilience

When looking at the positive preparedness and coping strategies and using inputs from the FGDs and KIIs, the study team looked to identify factors for why these positive activities were able to take place.

**Table 3** highlights several notable trends across the districts:

- Agroecological training has numerous benefits which can be seen from the different positive preparedness and coping strategies which occur, including the growing of organic crops, preservation of natural resources and reuse of materials to implement these initiatives (i.e. bottle drip irrigation, hay bales).

- Community cohesion in the districts appears to be strong when discussing the openness of farmers to share new techniques and technologies and travel long distances for knowledge transfer.

- The economic situation in Zimbabwe can provide challenges to market access despite the innovation found in rural communities such as bartering and using foreign currency (South African Rand) for transactions.





## ADAPTING FOR RESILIENCE

One critical aspect of resilience building is adapting to changing conditions by learning how to change current practices to fare better in the future. Community members were asked what they would do differently in the future to prepare for droughts and cyclones. The findings at different levels (including Household/Community level, government and NGOs) are presented in **Table 4**.

The table highlights several notable trends based on what activities communities will continue or change in the future to prepare for and cope with drought and cyclones:

- Early warning messages for Cyclone Idai were provided by government during and following the event. However, many community members expressed that despite the warnings, they did not expect the cyclone to have the impact that it did. This speaks to the need to increase preparedness in vulnerable communities through awareness raising activities around understanding of risk

- Cyclone preparedness is something that is on many community members' list of priorities in Bikita district. The impact of the cyclone will most likely increase this risk understanding

**Table 4** Actions Moving Forward

HOUSEHOLD & COMMUNITY	GOVERNMENT	TRÓCAIRE/PARTNERS OR OTHER NGOS
<ul style="list-style-type: none"> <li>· There is a strong need for community members to adjust their planting season to avoid late harvest which typically occurs at the beginning of the flooding season. Planting early maturing crops by November and harvesting was highlighted as a key strategy moving forward</li> <li>· Expand the water and soil conservation practices using the techniques advocated for in the resilience programme such as infiltration trenches, contour ridging, pot holing, mulching and manuring</li> <li>· Highlight the benefits of pot holing, contour ridging and infiltration trenches as techniques useful for drought and cyclone preparedness</li> <li>· Additional tree planting is needed as wind breaks against heavy winds, reduce soil erosion</li> <li>· Where possible, strengthen roofs to avoid wind/rain damage, including pens where livestock are kept</li> </ul>	<ul style="list-style-type: none"> <li>· Ensure that communities are aware of the potential impact of hazards heading their way such as cyclones, increase community awareness efforts so that warning messaging is followed</li> <li>· Introduce more irrigation schemes and water harvesting techniques, including provision of small dams, would like additional training on water harvesting</li> <li>· Added enforcement of laws and bylaws that protect the utilisation of natural resources. The Environmental Management Agency (EMA) must take this role to enforce the laws and policies that are already in place</li> </ul>	<ul style="list-style-type: none"> <li>· Provide addition training on traditional seed varieties and seed saving</li> <li>· Partner with government to provide communities with regular awareness raising meetings for hazard awareness and promotion of early warning systems</li> <li>· For cyclone preparedness, provide shelter training to ensure that houses and other structures can withstand strong winds, rains and flood waters (outside of Trócaire's programming area – but could refer to other shelter actors)</li> </ul>

# CHALLENGES AND RECOMMENDATIONS

The main aim of this learning paper was to identify positive preparedness and coping strategies of communities in Matobo and Bikita Districts following the experience of the drought and cyclone events of 2018-2019. Throughout the interaction with the communities and in debrief sessions with the study team, there were a number of items that came up related to the implementation of the programming. The following table presents some challenges along with recommendations for how they could be addressed.

Challenges	Recommendations
<i>There is a lack of enforcement of environmental management laws such as enforcing deforestation, communities recognized the importance of planting trees in the future – this was highlighted as a key challenge in Matobo</i>	<ul style="list-style-type: none"> <li>· Work with community groups to increase tree planting throughout project areas</li> <li>· Gain buy-in of community leaders and lead farmers to spread messaging around environmental management</li> <li>· Use tree planting activities as an advocacy piece for government (namely the Environmental Management Agency) to increase enforcement around illegal deforestation and other activities that damage the natural environment</li> </ul>
<i>There is a general lack of preparedness in cyclone affected areas (Bikita) for immediate response and recovery</i>	<ul style="list-style-type: none"> <li>· Increase DRR and awareness activities within vulnerable communities</li> <li>· Channel these activities through existing groups and structures who are already functional in the communities (watershed management committees, dam management and borehole committees, garden and irrigation committees) – no need to create new DRR groups if they do not exist</li> </ul>
<i>Community members expressed the need for strengthened capacity around disaster risk reduction (DRR)</i>	<ul style="list-style-type: none"> <li>· See recommendations for improved preparedness as per above</li> <li>· Reinforce the idea that agroecological methods taught in the Resilience and Sustainable Livelihoods Programme are effective DRR measures that should be replicated, scaled up and presented as ecosystem-based disaster risk reduction and adaptation (Eco-DRR/ Eba)</li> </ul>
<i>Youth are not directly targeted in the Resilience and Sustainable Livelihoods Programme. Additionally, youth were mentioned as main perpetrators of livestock and grain theft during lean periods</i>	<ul style="list-style-type: none"> <li>· Develop new ways to engage youth in innovative ways – such as working on the marketing of products and targeting young women who remain in the communities when their male counterparts leave their communities for neighbouring countries to look for employment</li> <li>· Engage with other actors who specialize in youth in rural areas of Zimbabwe to develop new approaches</li> </ul>
<i>Ensuring the sustainability of the farmer's groups and learning centres once project ends</i>	<ul style="list-style-type: none"> <li>· Map out income generating capacity (through selling of produce, livestock, etc.) for the learning centres to identify if they can support their costs without financial inputs from Trócaire</li> <li>· Begin developing phase out plan</li> </ul>

# LESSONS LEARNED

While no scientific conclusion can be drawn, the experience did provide a series of overall lessons related to this work which are highlighted below:

- Households in Matobo and Bikita Districts, in general, have higher capacity to prepare for drought than cyclone/flood due to their familiarity with the hazard. There was limited knowledge that the intensity of the cyclone would increase based on previous experience with cyclone Dineo which was not as severe when compared to Cyclone Idai.
- Most households taking part in the use of small grains and agroecological practices are food secure, even throughout drought period. Furthermore, they appeared to have higher capacity to prepare and cope with the drought compared to non-programme participants.
- There is a paradigm shift occurring throughout Matobo and Bikita Districts that maize is not needed as the only household crop. Part of this could be attributed to failure of maize as a result of perennial mid-season dry spells and droughts, a general embrace from agricultural extension officers for agroecological techniques and promotion of small grains, much improved from previous years. Additionally, the enabling policy framework which promotes agroecology and small grains guides the government extension staff is a major component of this.
- There is a better understanding and good uptake of water conservation techniques. One reason for this could be that these techniques are presented in a participatory way, through learning centres and lead farmers. This is greatly improved from the colonial past when these techniques were mandated in communities who showed little interest in implementing something forced upon them. The communities have had the experience of their water bodies silting.
- There is a general understanding of the importance of early land preparation (pot holing, mulching). In Bikita, farming is made easier because labor is spread out across time, rather than piling all field work at the onset of the rains.
- Some agro-ecological practices, such as pot holing, contour trenches and runoff pits helped build resilience to both cyclone and drought.
- There is an increased awareness among the farmers in both Matobo and Bikita on the need to embrace agroecological practices (potholing, mulching, use of cover crops, organic manuring, use of bottle drips, infiltration trenches) that promote moisture retention.

## CONCLUSION

This learning paper, along with an accompanying document related to resilience programming in Malawi (entitled *Building Resilience and Shaping the Future: Lessons learned from the experiences of Cyclone Idai in southern Malawi*) is only one piece in a larger puzzle relating to how to build resilience in vulnerable rural communities. Moving forward, the intention is to use these documents to present findings related to activities promoted in the project and to design improved resilience programmes for Malawi, Zimbabwe and anywhere Trócaire works in the field of resilience.

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