

## Cyclone Ana Impacts on Livelihoods and Agricultural Systems: Experiences and voices from Chikwawa and Nsanje Districts

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### Key Messages

- Increasing weather variability associated climate change threatens Malawi's national aspirations to developing a more diversified agricultural sector.
- The success of the agricultural diversification process depends on making leading alternative commodities profitable and resilient to increasing weather shocks.
- We discuss how Cyclone Ana impacted agricultural communities in Lower Shire Region and propose ways to mitigate detrimental effects of this cyclone and potential similar future events.
- *Short-term proposal:* Swift support to the flood victims with agricultural production inputs, especially seeds, to take advantage of the Dimba season and alluvial deposits from the floods. Also, agencies providing direct support to flood victims should coordinate with the Department of Disaster Management (DoDMA) to ensure equitable distribution of relief items to all victims.
- *Medium-term proposal:* Rehabilitate and strengthen infrastructure, including feeder roads, main roads, bridges, irrigation schemes, schools, and others destroyed or shaken by the floods.
- *Long-term proposal:* Implement a permanent resettlement scheme for households in Chikwawa and Nsanje districts, especially in flood-prone areas as the occurrence, frequency, and severity of floods in Chikwawa and Nsanje is likely to continue with climate change.

### Introduction

Cyclone Ana hit southern Malawi and parts of Mozambique on 24th and 25th January 2022, leaving several households destitute and killing at least 11 people. Besides destroying lives and property, the floods heavily affected the agri-food system, including crop and livestock production, infrastructure, and markets. The MwAPATA Institute and the Policy Support for Agriculture Transformation (PoSAT) Project in the Ministry of Agriculture conducted a rapid

assessment of the impacts of Cyclone Ana. The main objective of the assessment was to understand how the cyclone affected agricultural systems in Chikwawa and Nsanje Districts, which constitutes the Shire Valley Sub-Region. Specifically, the analysis assists in understanding how the cyclone has impacted household agricultural diversification through its impact on diverse agricultural value chains. The policy brief draws insights from Key informant interviews that were conducted with

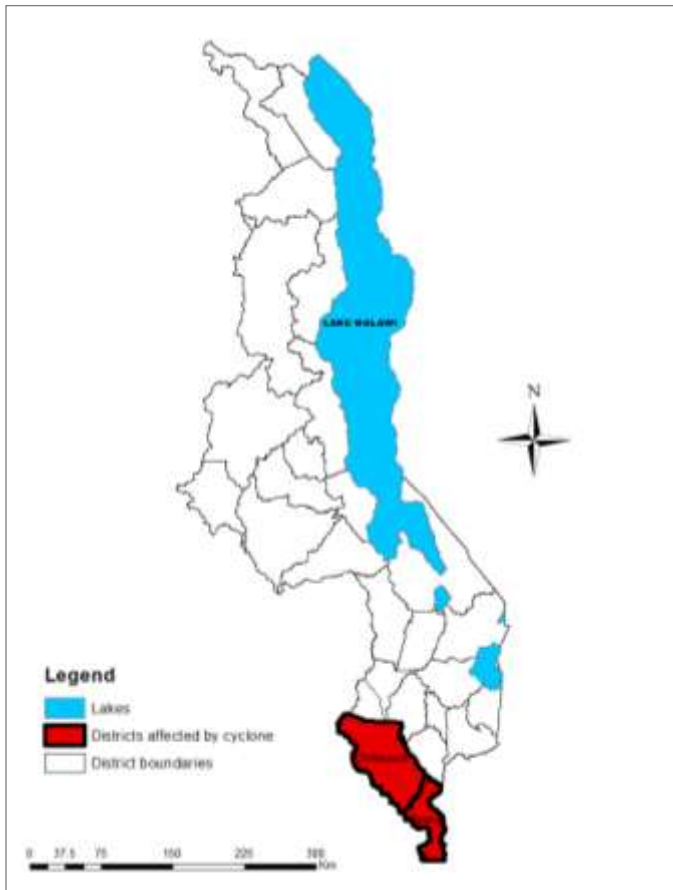
district agriculture officials and district disaster reduction and rehabilitation Officials. In addition, the policy brief is informed by focus group discussions with flood victims and key informant interviews the flood victim camp leaders.

## Effects of Cyclone Ana on Livelihoods and Agricultural Systems

### Human lives

The floods affected a total of 84,106 households in Chikwawa district from all the 12 Traditional Authorities (TA).<sup>1</sup> At the time of the assessment, 11 people were reported dead in Chikwawa District.<sup>2</sup>

**Figure 1. Districts affected by Cyclone Ana**



Source: Authors

In Nsanje, all 9 TAs were affected by the floods, with the worst hit TAs being Mlolo, Mbenjere,

Nyachikadza and Mankhanga.<sup>3</sup> Unlike in Chikwawa, Nsanje did not record any deaths at the time of conducting the rapid assessment.

### Story of the Cyclone Ana floods survival

*“The rains started on January 24th at night. The water levels slowly started rising. We stayed and waited to see if the water levels would subside, but the waters kept rising. So, we started moving to our friend’s houses, one after another, which appeared to be on higher grounds, but the water also reached there. Then we started seeing houses collapsing. Then, we said it was safe to move out of the area altogether.*

*We left behind some other people when we were crossing the tarmac. They thought the water levels weren’t going to raise. Alas! The water levels rose to levels too high for them to dare even join us at the police unit. They survived by climbing an anthill. Some people who knew how to swim helped in rescuing people’s property, but as I said, the water was too much to rescue many items. One woman from Lukina died while trying to rescue a knapsack sprayer.*

*Most houses and property were damaged. We could not rescue our food. We went without food for two days. Most adults helped themselves with sugarcane from Illovo sugar estates just close by”. -Narrated by a flood victim at Bereu Police Unit victim camp in Chikwawa district.*

Our interviews with Nsanje District Relief and Rehabilitation Officer revealed that Nsanje District disseminated the impending Cyclone messages to all areas that were at risk and the communities took the messages seriously. In addition, search and rescue teams were prepared to respond to the

impending flood.

The assessment team visited Bereu Police unit and Namalindi flood victim camps in Chikwawa district, and Nyachilenda camp in Nsanje district. Bereu Police unit camp had a total of 80 households, Namalindi camp had 151 households, and Nyachilenda camp had 692 households and a total of 3,460 people.

#### *Food stocks and nutrition*

Interviews show that the floods started the night of January 24th and continued to January 25th. The victims particularly in Chikwawa district were caught unawares and could not rescue any of their food stocks because the water levels were very high and fierce. If anything, flood survivors only managed to rescue their own lives from the floods.

A family in Chikwawa District reported having 12 bags of maize destroyed by the floods. The assessment revealed that the loss of food has resulted in serious food insecurity and will likely lead to malnutrition particularly among children.

#### *Crop production*

The floods affected all the Extension Planning Areas (EPA) in Chikwawa.<sup>4</sup> Similarly, all EPAs in Nsanje district were affected by the flood.<sup>5,6</sup> District floods reports indicate that a total of 42,276.7 hectares of various crops in Chikwawa district and 12,981 hectares in Nsanje district were affected by the flood. The floods came when most of the crops were in vegetative stages, and most farmers had already applied fertilizers. The crops were silted, washed away, submerged, or lodged by the flood.

**Figure 2. Bags of maize destroyed by floods in Chikwawa District**



Source: Authors

#### *Livestock*

The floods also affected livestock in both Chikwawa and Nsanje districts. It is estimated that a total of 25,444 livestock units were lost to the flood as shown in table 1. The monetary value of the lost livestock is MK1.36 billion.<sup>7</sup>

**Table 1: Infrastructure and Agricultural Assets Lost to the Flood**

	Chikwawa	Nsanje	Total
Crop area affected (ha)	42,277	12,981	55,258
Livestock losses (number)			
Cattle	500	4,001	4,501
Goats	1,948	2,761	4,709
Pigs	550	285	835
Poultry	10,217	5,032	15,249
Sheep	0	150	150
<i>Total</i>	<i>13,215</i>	<i>12,229</i>	<i>25,444</i>
Fish ponds affected	17	92	109
Irrigation schemes affected	11	98	109

Source: Chikwawa and Nsanje District Agriculture Offices flood assessment reports

### *Aquaculture*

The flood affected several fishponds and aquaculture facilities in Chikwawa and Nsanje districts. A total of 17 fish in Nsanje and 92 fish ponds in Chikwawa district were affected. Most ponds suffered damage on the inlet and outlet, and most fish were swept away by the flood.

### *Irrigation infrastructure*

The flood had a severe impact on irrigation infrastructure in the two districts. Eleven irrigation schemes in Chikwawa and 98 irrigation schemes in Nsanje were affected. Reports from the District Agriculture Offices indicated that the floods resulted in the siltation of dams, destruction of irrigation canals, and washing away of delivery pipes. The assessment team visited one solar-powered irrigation scheme in Nsanje and noted that some solar panels were either washed away by the floods or covered by muddy waters.

The flood damaged the Shire Valley Transformation Project intake dam and a stretch of 750m of the irrigation canal.

### *Road infrastructure*

The floods cut off several points along the M1 Road in Nsanje and Chikwawa. Interviews with district officials in both Chikwawa and Nsanje revealed that the road was washed away between Thabwa and Chikwawa Boma, between Bereu and Nchalo, and between Nchalo and Ngabu. In addition, the bridge on Chapananga road was cut-off. Besides the main roads, access roads were heavily affected by the flood. This led to a negative effect on transport, logistics, and service provision particularly within the districts and between the districts and Blantyre which is the hub of most service centers for the

southern region.

### *Housing and household assets*

Interviews with locals in the flooded areas indicate that flooding water rose to about 1.6m from the ground. Most houses collapsed in the heavy flooded water, especially those not built with cement. Some of the villages were completely vacated because they were not habitable anymore. Affected households lost virtually all their assets, including hoes, treadle pumps, panga knives, knapsack sprayers, axes, mattresses, bicycles, chairs, tables, livestock and others were lost to the flood.

### *Floods victims' disaster relief*

The flood victims initially started receiving support from the campsites' neighboring communities, especially for the first four days of the floods. There was a delay in accessing external relief due to the damaged road infrastructure. External support started trickling in on January 29th, 2022, particularly from the Department of Disaster Management Affairs (DODMA). Thereafter, other relief organization including the Red Cross, World Vision, Catholic Relief Services, Association of Land Rover Owners, Churches Action in Relief and Development (CARD), Habitat for Humanity and the Malawi Defense Forces. The support provided ranged from food stuff (e.g., maize flour, beans, soy pieces, salt), tents, utensils, cooking pots, and blankets.

District officials in Chikwawa expressed some level of worry over victim support because it was reported that well-wishers were shunning channeling their relief items through the district disaster office because of doubts over transparency and accountability.

### *Areas where further interventions are needed*

The respondents in all the study sites reported that the support was not enough. The most critical item that flood victims needed was food stuffs. The camps had many people, including children, women, and the elderly. On January 29th, 2022, DODMA distributed 40 50kg bags of maize flour and eight bags of beans to a Nyachilenda camp in Chikwawa district with 151 households and 738 people. This translated to 2.7kg per person. Assuming consumption rate of 0.293kg of maize per person per day, the food could take them about 9 days.<sup>8</sup>

In terms of agriculture, district agriculture officials revealed that floods come with many opportunities for crop production. The officials in both Chikwawa and Nsanje expect to have a bumper winter harvest if they can be swiftly supported with seeds for replanting and chemicals. The farmers think that production support should reach them no later than the end of March to maximize the presence of residual moisture. The farmers also requested to be supported with livestock restocking as most of their livestock were swept away by the flood.

The assessment asked flood victims about their perceptions of relocating to uplands sites. One group of farmers think that relocation would be very ideal considering that the 2022 floods were very fierce. Another group of farmers mentioned the importance of low lands to their livelihood. Both groups of farmers agree to the idea of resettlement if they are able to maintain their low-lying lands for agricultural production because such lands are very fertile.

### **Conclusion and recommendations**

The 2022 Cyclone Ana flood is one of the most intense floods that Malawi has experienced since

the 1980s. The flood threatened the very survival of thousands of lives, particularly in Nsanje and Chikwawa districts, and destroyed every aspect of livelihood.

This assessment sought to understand how the Cyclone affected households in the Chikwawa and Nsanje districts. Even though at the time of the assessment the flood victims had been sheltered in camps, they had incurred heavy losses ranging from human lives, food, crops, livestock, fish, household assets, and disconnection from their economic activities. Life in the camps was not easy as people from different backgrounds met and lived together. This report puts forward short, medium and long-term recommendations for consideration

#### *Short-term recommendations*

- There is a need for swift humanitarian support to the flood victims includes every item necessary for survival and livelihood rebuilding, including food, shelter, and clothing as households lost almost everything.
- There is also a need for swift support with agricultural production inputs including seeds and pesticides, and livestock. Production support is urgently needed to take advantage of the dimba season and alluvial deposits from the floods. Farmers should be supported with different crops that fit the winter season and the agroecology. This type of support is important because it will lessen the burden on humanitarian relief once households start harvesting their crops.



- There is a need for agencies providing direct support to flood victims to coordinate with the Department of Disaster Management (Dodma) to ensure equitable distribution of relief items to all victims.

#### *Medium-term recommendations*

- There is a need to rehabilitate and strengthen infrastructure, including feeder roads, main roads, bridges, irrigation schemes, schools, and others destroyed or shaken by the floods. Road networks are particularly important to reconnect affected households to their economic livelihoods including markets.

#### *Long-term recommendations*

With climate change, the occurrence, frequency and severity of floods in Chikwawa and Nsanje is likely to continue. There is, therefore, need to implement a permanent resettlement scheme for households in Chikwawa and Nsanje districts, especially in flood-prone areas. The relocated households should have the opportunity to maintain their lands in low lying area for cultivation.

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Available at: [www.mwapata.mw/reports](http://www.mwapata.mw/reports)

#### **Footnote**

1. Makhwira, STA Chiputula, Mlilima, Katunga, Kasisi, Chapananga, Lundu, Ngabu Ngowe, Masache and Ndakwera
2. Chikwawa District Council. 2022. Cyclone Ana Flood Disaster Situation Update. Chikwawa District Council
3. Ndamera, Tengani, Malemia, Senior Chief Makoko, Mlolo, Mbenjere, Nyachikadza, and Mankhanga
4. Chikwawa District Agriculture Office. 2022. Special Report on Floods. Ministry of Agriculture.
5. Kalambo, Mbewe, Mitole, Livunzu, Mikalango, and Dolo
6. Nsanje District Agriculture Office. 2022. Preliminary Floods Assessment Report for Nsanje District Agriculture Office. Ministry of Agriculture.
7. The average price of cattle is MK250,000; goats is MK30,000; pigs is MK40,000; sheep is MK30,000 and poultry is MK3,500.
8. Ranum, P., Peña-Rosas, J.P., Garcia-Casal, M.N., 2014. Global maize production, utilization, and consumption. *Ann. N. Y. Acad. Sci.* 1312, 105–112.

<https://doi.org/10.1111/nyas.12396>.



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